THE 15 ACRES PROJECT

Draft Environmental Impact Report

Case No. EA-12-002
State Clearinghouse No. 2012112016

Prepared for:

City of Foster City

May 2013

URBAN PLANNING PARTNERS INC.

The 15 Acres Project

Administrative Draft Environmental Impact Report
Case No. EA-12-002
State Clearing House No. 2012112016

Prepared for the City of Foster City

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I. INTRODUCTION

A. PURPOSE OF EIR

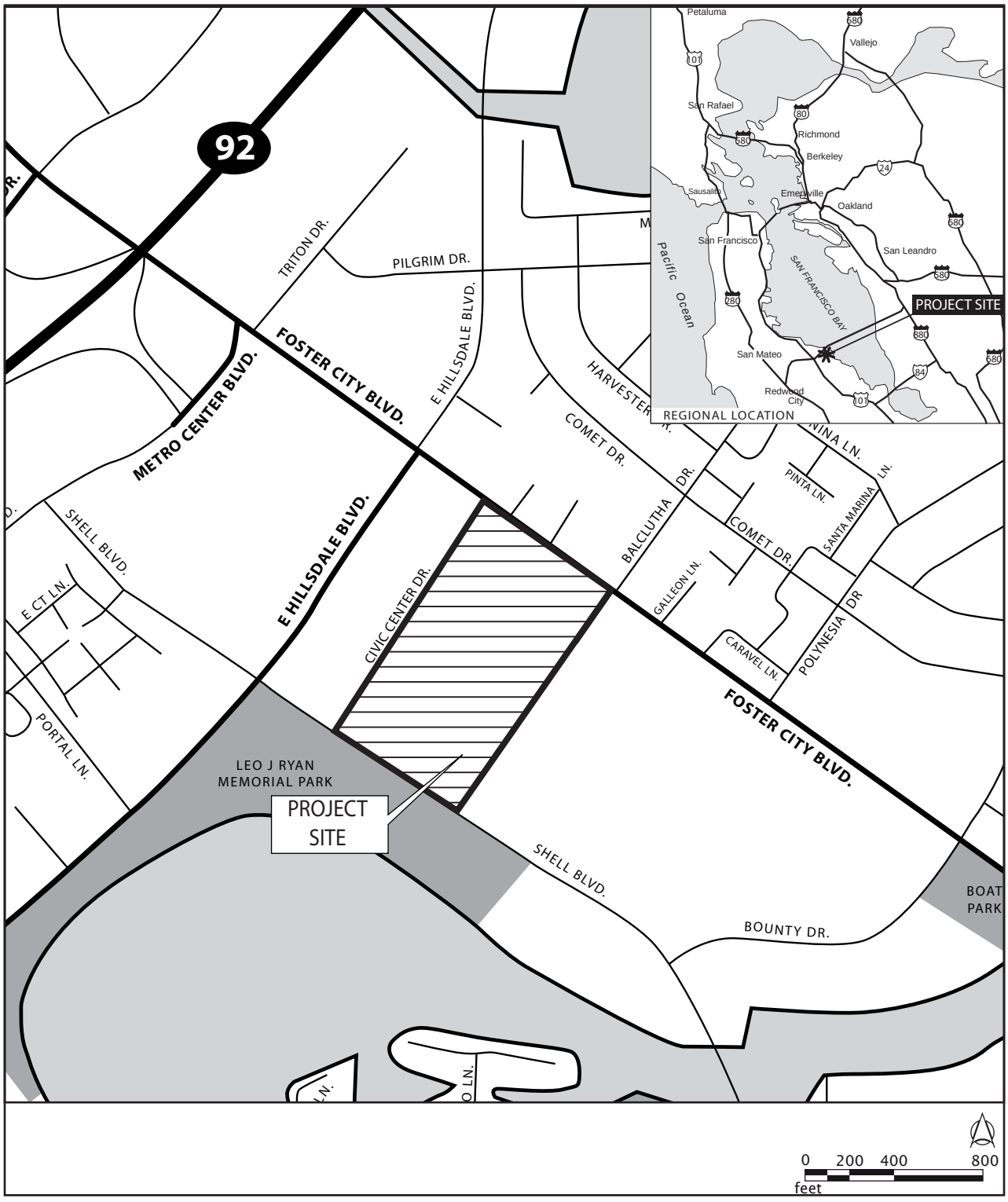
This Draft Environmental Impact Report (EIR) describes the environmental impacts of the proposed 15 Acres project (project). The intent of this EIR is to inform City staff, the Planning Commission, City Council and other responsible and interested agencies, and the general public of the proposed project and its potential adverse environmental impacts, recommend mitigation measures to lessen or avoid significant adverse impacts, and consider a reasonable range of feasible alternatives to the project. The information contained in the EIR will be reviewed and considered by public agencies prior to making a decision about the proposed project.

The City of Foster City (City) is the lead agency for environmental review of the proposed project. The Draft EIR is available for public review for the period identified in the Notice of Availability attached to the front of this document. During this time, written comments on the Draft EIR may be submitted to the City of Foster City, Community Development Department at the address indicated on the Notice of Availability. Responses to all comments received on the environmental analysis in the Draft EIR during the specified review period will be included in the Response to Comments Document/Final EIR.

B. PROPOSED PROJECT

The project site is a vacant, approximately 15-acre City-owned property located adjacent to the Foster City Government Center. The site is bounded by Civic Center Drive to the north, Foster City Boulevard to the east, Balclutha Drive to the south, and Shell Boulevard to the west, as shown in Figure 1-1. This site is the last remaining vacant publicly-owned site with development potential in the City.

The project seeks to create a mixed-use development (housing, neighborhood retail, and community services) on a vacant site in Foster City where nearby civic and cultural amenities make it ideally suited for senior-focused housing, a vibrant town square, and other community provisions that would benefit Foster City as a whole. The City has entered into an Exclusive Negotiation Agreement (ENA) with the project applicant to negotiate a sale of the land to the applicant in connection with the proposed project.



Source: Google Maps, 2013

Figure I-1
The 15 Acres
Project Location and Regional Vicinity Map

The project would include 18 new buildings ranging in height from 25 feet to 95 feet. Key elements of the project include:

- Age-restricted residential units including:
  - 196 for-sale residential units (e.g., condominiums, townhomes);
  - 152 assisted and independent living units; and
  - 66 affordable housing units.
- 70,000 square feet of retail space.
- Public open space, including a town square to be utilized for public events such as open air festivals, entertainment events, and markets; pedestrian paseos and a central street; and a 75-foot landscaped setback along Shell Boulevard.

The proposed project would require approvals by the City of Foster City, including a General Plan Amendment; a Rezoning and General Development Plan; a Tentative Map; a Specific Development Plan and Use Permit; a Development Agreement; and Building Permits, in addition to certification of this environmental review document.

C. NOTICE OF PREPARATION/EIR SCOPE

The City circulated a Notice of Preparation (NOP) that briefly described the proposed project and the environmental topics that would be evaluated in the EIR. The NOP was published on October 30, 2012, and the public comment period for the scope of the EIR lasted from October 30, 2012 to November 30, 2012. The public was advised of the NOP and the public scoping session in the following ways: published notices in the Foster City Islander, Daily Journal and Examiner; posted on Foster City website; televised on Foster City TV Channel 27; posted in public noticing locations; Posted on electronic marquee at Leo J. Ryan Park; posted on-site; and emailed to list serve for the project.

The NOP was also sent to responsible and trustee agencies, organizations, and interested individuals. Additionally, the NOPs were sent to the State Clearinghouse.

One public scoping session was held for the project in conjunction with the Planning Commission meeting on November 15, 2012. Comments received by the City on the NOP at the public scoping meeting were taken into account during the preparation of the EIR. No members of the public provided any written or verbal comments. NOP comments were received from two State of California agencies: the Department of Transportation and the Department of

Fish and Game. Comments from the Department of Transportation encouraged the City to coordinate the preparation of a Transportation Impact Study with Caltrans. Comments from the Department of Fish and Game suggested a complete detailed assessment of biological resources within the project site based on its proximity to the Don Edwards National Wildlife Refuge, a slough complex, and the San Francisco Bay, and advised that a California Endangered Species Act (CESA) permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. The NOP is included in Appendix A of this document, as are written comments received by the City on the NOP.

The following environmental topics are addressed in this EIR:

A. Land Use
B. Transportation and Circulation
C. Air Quality
D. Noise
E. Geology, Soils, and Seismicity
F. Hydrology and Water Quality
G. Biological Resources
H. Hazards and Public Safety
I. Public Services, Utilities, and Recreation
J. Aesthetics and Shade and Shadow
K. Wind
L. Global Climate Change
M. Cultural and Paleontological Resources

Environmental topics not warranting detailed evaluation (agricultural and forestry resources, mineral resources, population, and housing) are discussed in Chapter Vll.D, under Effects Found Not to be Significant.

Chapter IV, Public Policy, provides a discussion of the proposed project's relationship with applicable planning-related policies. This discussion is provided in a stand-alone chapter of this EIR, since a policy conflict is not in and of itself considered a significant environmental impact under CEQA.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I* - Introduction: Discusses the overall EIR purpose; provides a summary of the proposed project; describes the EIR scope; and summarizes the organization of the EIR.

- *Chapter II – Summary:* Provides a summary of the impacts that would result from implementation of the proposed project and describes mitigation measures or alternatives recommended to avoid or reduce significant impacts; areas of known controversy; and a description of the project alternatives.
- *Chapter III – Project Description:* Provides a description of the project objectives, project site, site development history, the proposed development, and required approval process.
- *Chapter IV – Public Policy:* Lists relevant planning policies and describes the project's relationship to each policy.
- *Chapter V – Setting, Impacts, and Mitigation Measures:* Describes the following for each environmental topic: existing conditions (setting); significance criteria; potential environmental impacts and their level of significance; and mitigation measures recommended to mitigate identified significant impacts. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance level is identified for each impact before and after implementation of the recommended mitigation measure(s).
- *Chapter VI – Alternatives:* Provides an evaluation of three alternatives to the proposed project. The alternatives include the No Project Alternative, Reduced Commercial Space Alternative, and the Reduced Density Alternative.
- Chapter VII – CEQA Required Assessment Conclusions: Provides the required analysis of effects found not to be significant; growth-inducing impacts; unavoidable significant effects; significant irreversible changes; and cumulative impacts.
- *Chapter VIII – Report Preparation*: Identifies preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices:* Contains the NOP and written comments submitted on the NOP.

All supporting technical documents and reference documents are available for public review at the City of Foster City Community Development Department.

II. SUMMARY

A. OVERVIEW OF PROPOSED PROJECT

This EIR has been prepared to evaluate the potential environmental effects of the 15 Acres project. The project site is a vacant, approximately 15-acre property located adjacent to the Foster City Government Center. The property is currently publicly-owned; however the City has entered into an Exclusive Negotiation Agreement with the project applicant and would sell the land to the applicant in connection with the proposed project.

The project seeks to create a mixed-use development (senior housing and care facilities, neighborhood retail, and community services) on a vacant site in Foster City, with nearby civic and cultural amenities. This location is ideally suited for senior-focused housing, a vibrant town square, and other community provisions that would benefit Foster City as a whole. The project would include 18 new buildings ranging in height from 25 feet to 95 feet. Key elements of the project include:

- Age-restricted residential units including:
  - 196 for-sale residential units (e.g., condominiums, townhomes);
  - 152 assisted and independent living units; and
  - 66 affordable housing units.
- 70,000 square feet of retail space.
- Public open space, including a town square to be utilized for public events such as open air festivals, entertainment events, and markets; pedestrian paseos and a central street; and a 75-foot landscaped setback along Shell Boulevard.

The 15-acre project site is located immediately adjacent to the City of Foster City Government Center. The site is bounded by Civic Center Drive to the north, Foster City Boulevard to the east, Balclutha Drive to the south, and Shell Boulevard to the west, as shown in Figure III-1. The site is level and includes graveled and paved parking areas, intermittent patches of opportunistic weedy vegetation, and bare earth.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter V, Setting, Impacts, and Mitigation Measures. CEQA requires a summary to include discussion of: (1) potential areas of controversy; (2) significant impacts

and proposed mitigation measures; (3) cumulative impacts; (4) significant irreversible and unavoidable impacts; and (5) alternatives to the proposed project. Each of these topics is summarized below.

1. Potential Areas of Controversy

No areas of substantial controversy regarding the project were raised in letters or verbal comments received in response to the Notice of Preparation (NOP) dated October 30, 2012. NOP comments were received from two State of California agencies: The Department of Transportation and the Department of Fish and Game. Comments from the Department of Transportation encouraged the City to coordinate the preparation of a Transportation Impact Study with Caltrans. Comments from the Department of Fish and Game suggested a complete detailed assessment of biological resources within the project site based on its proximity to the Don Edwards National Wildlife Refuge, a slough complex, and the San Francisco Bay, and advised that a California Endangered Species Act (CESA) permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project.

No members of the public provided any written or verbal comments at the Planning Commission hearing on November 15, 2012.

These issues were taken into consideration in the scope of this project and are addressed in Chapter V, Setting, Impacts and Mitigation Measures.

2. Significant and Significant Unavoidable Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."[1]

As discussed in Chapter V, Setting, Impacts and Mitigation Measures, and shown in Table II-1 below, the project would result in several potentially significant impacts. The majority of the impacts identified would be mitigated to a less-than-significant level with implementation of the recommended mitigation measures; however, two of the identified impacts may be significant and unavoidable.

[1] 14 California Code Regs. 15382; Public Resources Code 21068.

Impacts that may not be mitigated to a less-than-significant level and could remain significant (identified as SU in Table II-1) are identified for the following topics:

- Land Use, related to construction noise exceeding the City's established standards and policies which were, in part, designed to reduce environmental impacts; and land use incompatibility (related to construction noise); and
- Noise (construction).

The potentially significant impacts that could be mitigated to a less-than-significant level are identified for the following topics:

- Transportation and Circulation
- Air Quality
- Noise (project operation-related)
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Biological Resources
- Hazards and Public Safety
- Public Services, Utilities and Recreation
- Aesthetics and Shade and Shadow
- Wind
- Global Climate Change
- Cultural and Paleontological Resources

Impacts are anticipated to be less than significant for all other environmental topics.

Cumulative impacts are discussed in Chapter VII, CEQA Required Assessment Conclusions. The proposed project would not significantly contribute to or be affected by any significant cumulative impacts.

3. Alternatives to the Proposed Project

Chapter V includes analysis of three alternatives to the proposed project to meet the CEQA requirements for analysis of a reasonable range of project alternatives. The three project alternatives analyzed in Chapter V include:

- The **No Project/No Build Alternative**, which assumes the continuation of existing conditions within the project site;
- **The Reduced Commercial Alternative,** which assumes 30,000 square feet of commercial space, rather than the 70,000 square feet proposed in the 15 Acres project; and

- **The Reduced Density Alternative,** which assumes 331 residential units and 24,000 square feet of commercial space.

C. SUMMARY TABLE

Information in Table II-1, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter V. The table is arranged in four columns: (1) impacts; (2) level of significance prior to mitigation (when mitigation is necessary); (3) recommended mitigation measures; and (4) level of significance after implementation of mitigation. Levels of significance are categorized as follows: LTS =Less Than Significant, S =Significant and SU =Significant and Unavoidable. A series of mitigation measures is noted where more than one mitigation measure is required to achieve a less-than-significant impact, and alternative mitigation measures are identified when available. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter V.

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
A. LAND USE			
LAND-1: Implementation of the proposed project would require construction activity that would exceed established noise policies designed to avoid/mitigate an environmental effect.	S	LAND-1: Implement Mitigation Measure NOISE-1.	SU
B. TRANSPORTATION AND CIRCULATION			
TRANS-1: Project construction activities could interfere with circulation patterns.	S	TRANS-1: Prior to the issuance of a site development permit/use permit, the project sponsor shall develop and submit a construction management plan for City approval that specifies measures that would reduce impacts to motor vehicle, bicycle, pedestrian, and transit circulation associated with project construction activities. The construction management plan shall include the following: ▪ Location of construction staging areas for materials, equipment, and vehicles. ▪ Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur. ▪ Identification of haul routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation, and safety; and provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project sponsor. ▪ Provisions for removal of trash generated by project construction activity. ▪ A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager. ▪ Provisions for pedestrian and bicycle circulation through the congestion zone. The project sponsor shall implement the construction management plan during the construction period.	LTS

LTS = Less Than Significant, S = Significant, SU = Significant and Unavoidable

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
C. AIR QUALITY			
AIR-1: Expose existing sensitive receptors to substantial pollutant concentrations caused by the construction of the project.	S	AIR-1: The following two-part mitigation measure shall be implemented: AIR-1a: Implement BAAQMD Recommended Best Control Measures for reducing fugitive dust emissions, including: ▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day; ▪ All haul trucks transporting soil, sand, or other loose material off-site shall be covered; ▪ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited; ▪ 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). 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 mechanic and determined to be running in proper condition prior to operation; and ▪ Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.	LTS

LTS = Less Than Significant, S = Significant, SUU = Significant and Unavoidable

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
AIR-1 *continued*		AIR-1b: Selection of equipment during demolition, grading and trenching construction phases to minimize emissions. Such equipment selection would include the following: ▪ Diesel-powered off-road equipment larger than 50 horsepower and operating at the site more than two days that are used for demolition and mass grading/excavation and building construction shall meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent; ▪ Minimize the number of hours that equipment will operate including the use of idling restrictions; and ▪ Line power shall be installed at the site as soon as possible after construction start and would be used to power equipment to avoid use of diesel-powered generator engines. Note that the construction contractor could use other measures to minimize construction period diesel particulate matter emissions to reduce the predicted cancer risk below the thresholds. Such measures may be the use of alternative powered equipment (e.g., LPG powered forklifts), alternative fuels (e.g., biofuels), added exhaust devices, or a combination of measures, provided that these measures are approved by the City.	

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
D. NOISE			
NOISE-1: Noise generated by construction activities on the site could cause a substantial temporary increase in noise levels at surrounding uses including the civic center, the NPJC, the multi-family residential buildings across Foster City Boulevard, the William E. Walker Recreation Center across Shell Boulevard. The project may also be constructed in phases, thereby subjecting on-site residents to construction noise during later construction phases of the project.	S	NOISE-1: The following multi-part mitigation measure shall be implemented: ▪ 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. ▪ During all project site excavation and on-site grading, the construction contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. ▪ The construction contractor shall locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. The construction contractor shall 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. ▪ 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. ▪ The construction contractor shall utilize "quiet" air compressors and other stationary noise sources where technology exists. ▪ The construction contractor shall 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. ▪ The construction contractor shall control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site. ▪ The construction contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. ▪ If pile driving is necessary, the construction contractor shall pre-drill foundation pile holes to minimize the number of impacts required to seat the pile. ▪ If pile driving is necessary, the construction contractor shall consider using multiple pile driving rigs to expedite this phase of construction. ▪ If pile driving is necessary, the construction contractor shall consider the use of "acoustical blankets" to shroud the pile hammer.	SU

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
E. GEOLOGY, SOILS, AND SEISMICITY			
GEO-1: Project occupants would be subject to seismic shaking hazards.	S	GEO-1: The following three-part mitigation measure shall be implemented: GEO-1a: Prior to the issuance of any grading or construction permits for the project, a design-level geotechnical investigation shall be prepared by a licensed professional and submitted to the City Building Inspection Division for review and approval. The geotechnical investigation shall determine the proposed project's geotechnical conditions, including seismic shaking hazards and measures to address these hazards. The analysis presented in the geotechnical investigation shall conform to the California Division of Mines and Geology recommendations presented in the Guidelines for Evaluating Seismic Hazards in California. The investigation will include, as appropriate, the following: a site screening evaluation; evaluation of on- and off-site geologic hazards; quantitative evaluation of hazard potential; detailed field investigation; estimation of ground-motion parameters; evaluation of landslide, liquefaction, lateral-spreading, and ground-displacement hazards; and recommendations to reduce identified hazards. The geotechnical investigation report shall include a finding that the proposed development fully complies with the California Building Code, applicable City ordinances, and the City Building Inspection Division requirements. The CBC and applicable City ordinances were developed to ensure that compliant structures would be "earthquake-resistant," not "earthquake-proof." The CBC is intended to protect people inside buildings by preventing collapse and allowing for safe evacuation. Structures built according to code should resist minor earthquakes undamaged, resist moderate earthquakes without significant structural damage, and resist severe earthquakes without collapse. GEO-1b: Design review 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. GEO-1c: All design measures, recommendations, design criteria, and specifications set forth in the design-level geotechnical investigation shall be implemented as a condition of project approval.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
GEO-2: Damage to structures or property related to man-made fill, unstable soils, or unstable subsurface materials resulting in settlement or differential settlement could occur.	S	GEO-2: In addition to the requirements included in Mitigation Measure GEO-1, the designers of the proposed project's building foundations and improvements (including sidewalks, roads, driveways, parking areas, and utilities) shall consider the site being underlain by Bay Mud and non-engineered fill. The design-level geotechnical investigation, prepared by a licensed professional, shall be fully compliant with CBC and include measures to ensure that potential damage related to compressible materials or soils and non-uniformly compacted fill is minimized. Future settlement from placement of new loads, including the addition of fill materials, shall be taken into account in the design of all structures and utilities. Design options may range from removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill, to construction of improvements to withstand the forces exerted during the expected settlements. All design measures, design criteria, and specifications set forth in the site-specific design-level geotechnical report, and the City Building Inspection Division standards shall be compliant with CBC and followed to reduce impacts associated with problematic soils to a less-than-significant level. The geotechnical consultant shall, with the construction contractor, verify design assumptions and provide monitoring to observe geotechnical aspects of foundation construction.	LTS
GEO-3: Damage to structures or property of the proposed project related to expansive (shrink-swell) and corrosive soils could occur.	S	GEO-3: The following two-part mitigation measure shall be implemented: GEO-3a: The design-level geotechnical investigation shall include an evaluation of the potential for expansive soils on the site and shall be fully compliant with the CBC and include measures to ensure potential damage related to expansive soils is minimized or avoided. Mitigation options may range from removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles. All design criteria and specifications set forth in the design-level geotechnical investigation shall be implemented to reduce impacts associated with problematic soils.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
GEO-3 *continued*		GEO-3b: The design-level geotechnical investigation shall include an evaluation of the potential for corrosive soils on the site. If the results indicate corrosive soil conditions are present, appropriate measures to address these conditions shall be fully compliant with CBC and incorporated into the design of project improvements that may come into contact with site soils. Wherever corrosive soils are found in sufficient concentrations, the report shall provide recommendations 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 onsite soils. In general, these recommendations are expected to include, but not be limited to, the following provisions: ▪ Protect buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric coated steel or iron (including all buried metallic pressure piping) against corrosion from soil. ▪ Protect buried metal and cement structures in contact with earth surfaces from chloride ion concentrations. ▪ Use sulfate-resistant concrete mix for all concrete in contact with the ground. ▪ Design and implement the most effective corrosion protection feasible. All recommendations of the geotechnical investigations shall be implemented. The geotechnical consultant shall coordinate with the construction contractor to determine the corrosion protection system.	
F. HYDROLOGY AND WATER QUALITY			
HYD-1: Construction period and operation period activities could result in degradation of water quality in Foster City Lagoon and the Bay by reducing the quality of stormwater runoff.	S	HYD-1: Implementation of the following two-part mitigation measure would reduce construction- and operation-period impacts to water quality to a less-than-significant level: HYD-1a: Consistent with the requirements of the Statewide Construction General Permit, the project applicant shall prepare and implement a SWPPP designed to reduce potential adverse impacts to surface water quality during the project construction period. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities 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 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 BAT/BCT standard; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed. The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
HYD-1 *continued*		consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Storm Water Quality Handbook Construction Site BMPs Manual. The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project Risk Level, sampling of the site effluent and receiving waters. A Qualified SWPPP Practitioner (QSP) shall be responsible for implementing the BMPs at the site. The QSP shall also be responsible for performing all required monitoring, and BMP inspection, maintenance, and repair activities.	
		HYD-1b: The project sponsor shall fully comply with the C.3 provisions of the MRP. Responsibilities include, but are not limited to, designing BMPs into project features and operations 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 requirements of the San Mateo Countywide Water Pollution Prevention Program, as outlined in the August 2012 C.3 Stormwater Technical Guidance manual (or updated version), shall be incorporated into project designs. 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. Funding for long-term maintenance of all BMPs must be specified (as the City will not assume maintenance responsibilities for these features). The project sponsor shall comply with all requirements of the City's standard COA. At a minimum, in accordance with the COAs, the hydrology/hydraulic analysis shall be completed on the existing storm drain system to verify that it is adequately sized to accommodate the runoff from the project. Modifications to the system shall be funded by the project sponsor as needed. The project sponsor 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 Department and/or Building Inspection Division for review and approval. Both the SWPPP and drainage system maintenance plan must be approved by the City prior to approval of the grading plan.	

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
G. BIOLOGICAL RESOURCES			
BIO-1: Development of the proposed project could eliminate scattered seasonal wetlands that have formed on fills on the site.	S	BIO-1: An updated wetland delineation shall be prepared by a qualified wetland specialist and submitted to the Corps for verification. If jurisdictional wetlands are confirmed on the site, and no longer considered exempt from Corps and/or RWQCB jurisdiction, appropriate authorizations shall be obtained prior to any fill activities. This may include the need for compensatory mitigation to ensure conformance with the no-net loss of wetlands habitat on a regional and State-wide level. Compliance with any requirements of possible jurisdictional agencies would ensure that any direct or secondary effects of the project on possible jurisdictional agencies would be adequately addressed.	LTS
H. HAZARDS AND PUBLIC SAFETY			
HAZ-1: Upset and accidents involving hazardous materials releases and transport and use during construction activities could result in adverse effects to public health or the environment.	S	HAZ-1: The following three-part mitigation measure shall be implemented: HAZ-1a: 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 feasible. 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 leaks shall be 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. HAZ-1b: 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, and required personal protective equipment, as appropriate, in responding to the emergency. The contractor(s) shall submit these procedures to the City for approval prior to demolition or development activities.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
HAZ-1 *continued*		HAZ-1c: If hazardous materials will be stored on the project site for more than 30 days in quantities equal to or greater than specified thresholds, a HMBP shall be prepared by the contractor(s), as required by SMCEHD. Emergency responders and public health officers rely on information contained in the HMBP in the event of a hazardous materials incident to prevent a potential threat to human health and/or the environment. The HMBP shall be submitted to SMCEHD and FCFD for review and approval and shall be subject to inspection requirements by SMCEHD and FCFD for completeness and accuracy. The HMBP shall be updated every other year or when significant changes are applicable, including new emergency contact information, a major increase in the quantity of hazardous materials stored on-site, and/or changes in the location of hazardous materials storage.	
HAZ-2: Exposure of construction workers and the public to identified or previously unknown contamination in soil and groundwater and other hazardous materials during project construction and operation could result in adverse health effects.	S	HAZ-2: The following three-part mitigation measure shall be implemented. HAZ-2a: Construction at the project site shall be conducted under a project-specific Construction Risk Management Plan (CRMP) to protect construction workers, the general public, and the environment from sub-surface hazardous materials previously identified and to address the possibility of encountering unknown contamination or hazards in the subsurface. The CRMP shall summarize soil and groundwater analytical data collected on the project site during past investigations, delineate areas of known soil and groundwater contamination, and identify soil and groundwater management options for excavated soil and groundwater, in compliance with local, State, and federal statutes and regulations. The CRMP will: 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	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
HAZ-2 *continued*		unknown hazardous materials be encountered during construction activities. The contingency plan shall be developed by the contractor(s), with the approval of the City, prior to grading and earthwork activities. 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. 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 or regulatory agency, as appropriate; and 4) designate personnel responsible for implementation of the CRMP. The CRMP shall be submitted to the Foster City Community Development Department for review and approval prior to construction activities.	
		HAZ-2b: Engineering fill brought on-site shall be demonstrated, by knowledge of its source (e.g., virgin material) or 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 groundwater (e.g., ESLs). As appropriate, the engineered fill shall be characterized by a qualified environmental professional using a representative sampling methodology in accordance with U.S. EPA's SW-846 Test Methods, 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 Building Division for approval prior to transporting engineering fill onto the project site.	
		HAZ-2c: Any on-site reuse of hydrocarbon impacted soil will follow the guidance provided by the SMCEHD, which is designed to meet screening levels for residential (or potential future residential) land use as defined by the Regional Water Board. The guidance specifies the site conditions, sampling and characterization, evaluation criteria, regulatory limits, and work plan and reporting requirements necessary for on-site hydrocarbon impacted soil reuse.	

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
I. PUBLIC SERVICES, UTILITIES AND RECREATION			
UTL-1: Implementation of the proposed project could result in wastewater generation that exceeds the collection system's capacity.	S	UTL-1: The following two-part mitigation measures shall be implemented: UTL-1a: Prior to the issuance of a site development permit/use permit, 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. UTL-1b: The applicant shall prepare pre-construction survey reports prior to the issuance of a site development permit/use permit and post-construction survey reports prior to issuance of occupancy permits on the existing wastewater collection and force mains, to be submitted to the Foster City Public Works Department for review.	LTS
UTL-2: Implementation of the proposed project could result in stormwater generation that exceeds the collection system's capacity.	S	UTL-2: Confirmation of the capacity of the City's surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements and connections to accommodate the proposed project. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. The City shall require the applicant to implement BMPs to reduce the peak stormwater runoff from the project site to the maximum extent practicable. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers.	LTS
J. AESTHETICS AND SHADE AND SHADOW			
AES-1: The proposed project would create additional sources of glare in the vicinity of the project site.	S	AES-1: In order to reduce the potential light- and glare-related impacts to a less-than-significant level, the following mitigation measures shall be incorporated into the project: AES-1a: During the Design Review process, the City shall review the reflective properties of exterior building materials selected for the proposed structures. Prior to Final Development Plan approval, City staff shall ensure that the use of exterior reflective materials is minimized and that any proposed reflective materials minimize day and nighttime glare.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
AES-1 *continued*		AES-1b: A lighting plan shall be prepared for each new building on the project site and submitted to the City for review as part of the Final Development Plan. 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. Prior to issuance of a building permit, the City shall ensure that all development plans for the proposed project conform to the performance standards provided under Section 17.68.080 of the Zoning Code.	
K. WIND			
WIND-1: The Assisted Living structure has an exposure and potential height and massing that could, depending on the building's design, substantially increase ground-level winds.	S	WIND-1: Final design of the Assisted Living structure should employ the following design guidelines to reduce wind impacts to a less-than-significant level: ▪ The Civic Center Drive face of the building shall be articulated and modulated through the use of architectural devices such as surface articulation, variation of planes, wall surfaces and heights, as well as the placement of step backs, cutouts and other features. ▪ The Civic Center Drive frontage along the building and areas near the corner of the building shall utilize properly located landscaping to mitigate winds for pedestrians. Porous materials (vegetation, hedges, screens, latticework, perforated or expanded metal) offer superior wind shelter compared to a solid surface. ▪ Avoid "breezeways" or notches at the upwind corners of the building.	LTS
L. GLOBAL CLIMATE CHANGE			
GCC-1: Implementation of the project would generate greenhouse gas emissions that could exceed BAAQMD thresholds.	S	GCC-1: To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the project: Construction and Building Materials ▪ Use locally produced and/or manufactured building materials of at least 10 percent for construction of the project; ▪ Recycle or reuse at least 50 percent of construction waste or demolition materials; ▪ Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas; and ▪ Use "Green Building Materials," such as those materials which are resource efficient, and recycled and manufactured in an environmentally friendly way, including low Volatile Organic Compound (VOC) materials.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation

GCC-1 *continued*		Energy Efficiency Measures
		▪ Design all project buildings according to 2010 California Building Code's Title 24 Part 6 standards, including, but not limited to any combination of the following:
		  ▪ Increase insulation such that heat transfer and thermal bridging is minimized;
		  ▪ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and
		  ▪ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances or other applicable electrical equipment.
		▪ Install efficient lighting and lighting control systems;
		▪ Install light colored "cool" roofs and cool pavements;
		▪ Install energy efficient heating and cooling systems, appliances and equipment, and control systems; and
		▪ Install solar powered or light emitting diodes (LED) outdoor lighting systems.
		Water Conservation and Efficiency Measures
		▪ Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include the following, plus other innovative measures that might be appropriate:
		  ▪ Create water-efficient landscapes within the development;
		  ▪ Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls;
		  ▪ Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water;
		  ▪ Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets, dual-flush toilets and waterless urinals; and
		  ▪ Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
		Solid Waste Measures
		▪ Reuse and recycle construction waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard); and
		▪ Provide employee education about reducing waste and available recycling services.	

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
M. CULTURAL AND PALEONTOLOGICAL RESOURCES			
CULT-1: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could adversely impact archaeological cultural resources.	S	CULT-1: If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery shall cease and a qualified archaeologist will be contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any archaeological materials or human remains and associated materials. It is recommended that adverse effects to such deposits be avoided by project activities. If avoidance is not feasible, 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 materials at 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 project construction or actions that could adversely affect the deposit in question. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results 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 NWIC of the Historical Resources Information System. 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, pestles, 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.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
CULT-2: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could adversely impact paleontological resources.	S	CULT-2: If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall cease and a qualified paleontologist will be contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. It is recommended that adverse effects to paleontological resources be avoided by project activities. If avoidance is not feasible, 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 must be avoided, or such effects must 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 in question. 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 should be submitted to the project proponent, the Foster City Community Development Department, and the paleontological curation facility. 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.	LTS

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TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
CULT-3: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could disturb human remains, including those interred outside of formal cemeteries.	S	CULT-3: If human remains are encountered, work within 25 feet of the discovery shall cease and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the find and consult with agencies as appropriate. The project proponent should 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 must 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 report should be submitted to the project proponent, the Foster City Community Development Department, the MLD, and the NWIC.	LTS

LTS = Less Than Significant, S = Significant, SU = Significant and Unavoidable

III. PROJECT DESCRIPTION

This chapter describes the proposed 15 Acres project, which is evaluated in this EIR. The chapter begins with a description of the project site, regional and planning context, objectives and a discussion of relevant project background, followed by a detailed description of the proposed project and a discussion of the intended uses of the EIR and required project approvals and entitlements.

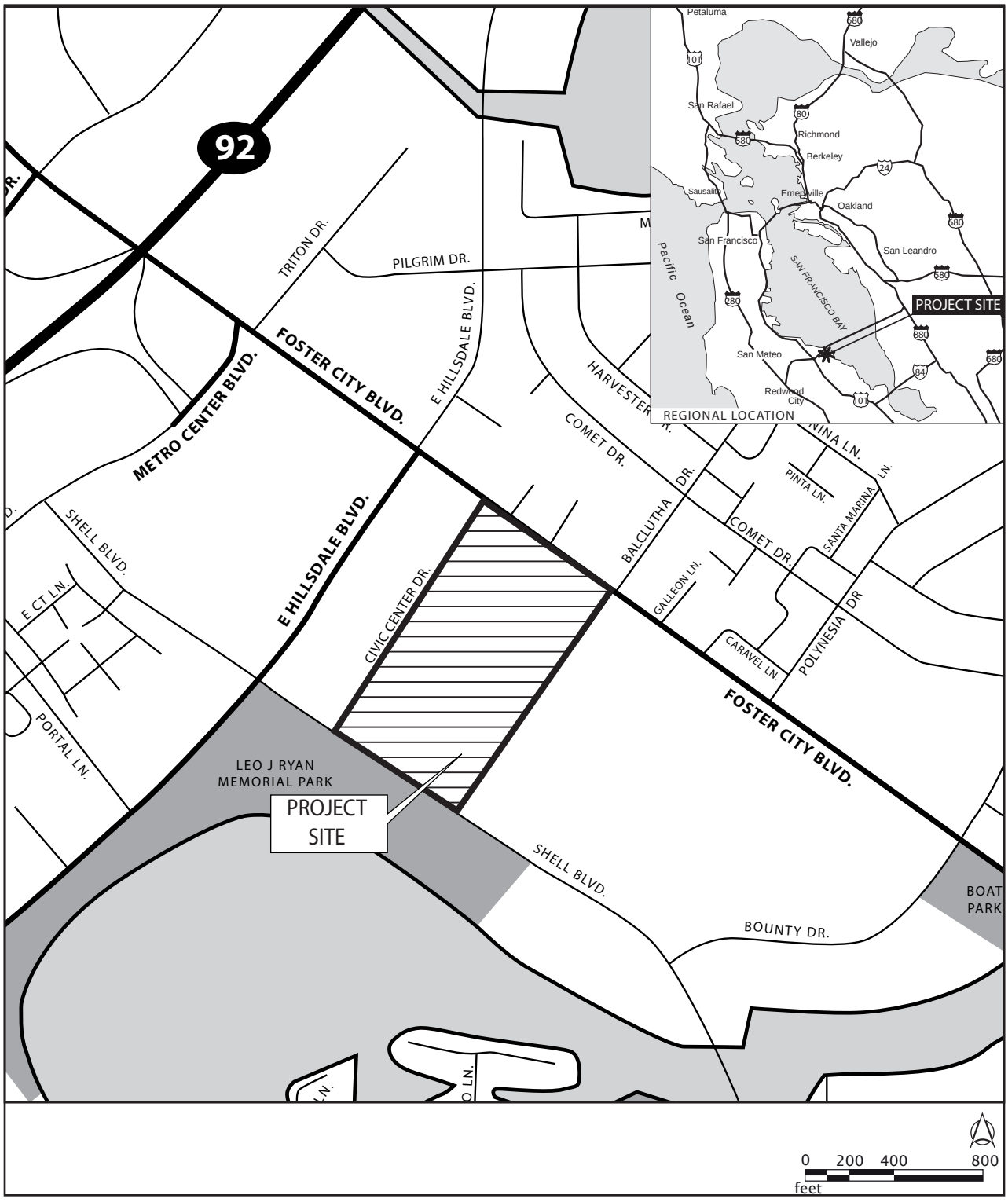
A. PROJECT SITE

1. Location and Site Characteristics

The project site comprises approximately 15 acres in Foster City. Foster City is located in San Mateo County and is bordered by 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. Figure III-1 shows the project site's regional and local context.

The project site includes a vacant 15-acre City-owned property adjacent to the Foster City Government Center. The site is bounded by Civic Center Drive to the north, Foster City Boulevard to the east, Balclutha Drive to the south, and Shell Boulevard to the west, as shown in Figure III-1. This site is the last remaining developable parcel of City-owned land in the City. The site is generally level and includes very little vegetation. The only improvement on the site is a temporary structure that was utilized as temporary fire apparatus storage when the current station was being constructed. The structure is now utilized for miscellaneous storage, and occasionally is used as a location for Community Emergency Response Team training.

Project site



Source: Google Maps, 2013

Figure III-1
The 15 Acres
Project Location and Vicinity Map

2. Surrounding Land Uses

The project site is centrally located within Foster City and is surrounded by a variety of land uses. Residential uses occupy most of the land to the east of the project site across Foster City Boulevard and include a mix of condominiums, apartments, and townhouses, as well as single-family detached units further east. Brewer Island School is also further east. The North Peninsula Jewish Campus (NPJC), which includes a cultural center that offers fitness, recreational and cultural arts programs, and a private school (Kindergarten through 8th grade) and early childhood education programs, is across Balclutha Drive to the south of the project site. Leo J. Ryan Park and the William E. Walker Recreation Center, which houses the City's Senior Center, is just across Shell Boulevard to the west of the project site. The closest freeway to the project site is the J. Arthur Younger Freeway/State Route 92 located about one-half mile to the northwest. Across Civic Center Drive on the north is the Foster City Civic Center complex, which includes the Foster City Library, the Fire and Police Department buildings, the City's Community Center, and City Hall. A more detailed discussion of existing and planned land uses is provided in Section IV.A, Land Use, and Figure V.A-1 illustrates the existing land uses on and surrounding the project site.

3. Existing General Plan and Zoning

The General Plan land use classification for the project site, as established by the Land Use and Circulation Element of the City's General Plan,[1] is Public and Semi-Public. Properties designated as Public and Semi-Public typically are used for public purposes or for specified public utility purposes, for example community buildings, schools, and churches. The land use classifications for the project site and surrounding area are shown in Figure IV-1, in Chapter IV, Public Policy.

The zoning designation for the project site is Public Facilities/Planned Development Combining District (PF/PD). The PF District is reserved for the construction, use and occupancy of governmental, public utility and educational buildings and facilities, and other uses compatible with the semi-public character of the district. The PD District is designed to accommodate various types of development including residential, commercial, and industrial developments, or a combination thereof. The District is established to allow flexibility in design. The zoning designations of the project site and surrounding area are shown in Figure IV-2 of Chapter IV, Public Policy.

[1] City of Foster City, 2004. *General Plan, Land Use and Circulation Element*. November.

B. PROJECT BACKGROUND

1. Civic Center Master Plan and EIR

The Civic Center Master Plan area includes the project site, the NPJC, and the City Government Center (City Hall, Council Chambers, and Police Station), Fire Station, and library/community center. From 1995-1998, the City prepared the Civic Center Master Plan and in June 1999, the City certified the Civic Center Master Plan Program EIR. The Master Plan consists of urban design guidelines and conceptual site planning for development of these properties. As the plan area was developed and the anticipated land uses became more clearly defined, various amendments to the Master Plan were required. As the City considered various amendments and variations to the Master Plan, it prepared and adopted six Addenda (August 2, September 1, and October 15, 1999; November 20, 2000; August 1, 2002; and April 28, 2003) to the Master Plan EIR. The Civic Center Master Plan EIR was a Program EIR that evaluated build out of the anticipated land uses in the Master Plan area. The EIR identified significant unavoidable cumulative air quality impacts as a result of increased traffic. All other anticipated impacts were identified as less than significant after implementation of recommended mitigation measures. The Addenda were prepared because changes or additions to the Program EIR were required, but the City found that none of the necessary changes or additions required preparation of a subsequent or supplemental EIR. Information from the Civic Center Master Plan EIR including the Addenda was used as a reference document in preparing this EIR. However, this EIR (The 15 Acres Project EIR) has been prepared as a stand-alone EIR, and it is not tiered off of the Civic Center Master Plan EIR.

2. Mirabella Project

In 2006, Foster City City Council decided that it would pursue development on 11 acres of the vacant 15-acre City-owned parcel with varying types of senior housing (including some below market rate units), a public gathering area, retail stores, and cultural attractions (i.e., art festivals, open markets in the public plaza).

From 2007 to 2010, the City worked exclusively with a development team led by Sares Regis who was partnered with Pacific Retirement Services (PRS, project sponsor) planning the development of the site. Sares Regis proposed a Continuing Care Retirement Community (CCRC), referred to as Mirabella San Francisco Bay. The proposed CCRC would have included a mix of independent living apartments, assisted living apartments, a memory care unit, a skilled nursing unit, and affordable senior one-bedroom apartments totaling 440 units. The proposed project would have also included approximately 1.3

acres of public open space. The CCRC would have been developed around the 1.3 acres of public open space and would have included some ground-level retail/restaurant space along Shell Boulevard.

The City prepared, but did not certify, an EIR in 2009 for the Mirabella Project. Given the City did not certify the Mirabella EIR, it is not possible to rely on or tier off of that EIR for this project. However, information from that EIR has been utilized to the extent it is relevant and still current.

The Mirabella Project EIR determined that the project had the potential to generate significant environmental impacts in several areas including Land Use; Air Quality; Noise; Geology, Soils, and Seismicity; Hydrology and Water Quality; Biological Resources; Hazards and Hazardous Materials; Public Services and Utilities; Aesthetics and Shade and Shadow; Wind; Global Climate Change; and Cultural and Paleontological Resources. Mitigation measures were recommended to reduce the majority of these impacts to a less-than-significant level; however, two impacts were identified as potentially significant and unavoidable: Noise (construction) and Land Use (related to construction noise exceeding established standards and policies).

However, after the national and regional economic climate created financing challenges, the City of Foster City and PRS, Inc. announced on April l, 2010 that the exclusive agreement for development of the site had been ended.

3. Foster City Community Partners

In 2011, the City issued a new Request for Qualifications (RFQ) to land development firms and non-profit housing organizations interested in pursuing development projects on the project site.

Foster City Community Partners was formed as a sole purpose entity to create a development team specifically to address the needs of this project. Foster City Community Partners includes The New Home Company as the Master Developer. Foster City Community Partners submitted a response to the City's RFQ and submitted a full response to the RFQ on August 1, 2011. This RFP response detailed Foster City Community Partners' proposal to create a mixed-use neighborhood that includes: diverse senior residential housing segmented by age, income, and price; a town square gathering place; a new central street; commercial and retail spaces; and a variety of improvements to the public realm and new public spaces.

In February 2012, the Foster City City Council approved an Exclusive Right to Negotiate Agreement with the New Home Company Northern California, LLC.

The project considered in this EIR is the New Home Company's proposal for the project site.

C. PROJECT OBJECTIVES

The proposed project seeks to create a new mixed-use neighborhood with senior-oriented housing, neighborhood retail and commercial uses, and community amenities that will serve as a gathering place for all Foster City residents. The goal of the project is the creation of a senior living experience that is walkable in scale and designed to encourage social connections between residents and the broader community. Specifically, the project proposes to:

- Develop 15 acres of undeveloped property with senior housing, commercial, neighborhood retail, and community and cultural activities that activate the City Center.
- Build on and enhance the array of community assets and amenities that exist near the project site.
- Create attractive and vibrant public spaces for all ages and residents of Foster City to enjoy.
- Create a new venue for festivals, events and a farmers market in the form of a new town square.
- Allow an opportunity for the City to retain retail tax dollars and create new taxable properties.
- Increase the supply of affordable housing for seniors.
- Provide a variety of senior housing residential living choices for market rate for sale, rental and assisted living.
- Enhance connections for both pedestrians and vehicles from the existing neighborhood and provide clear access points.
- Increase the opportunity for aging Foster City residents to remain in Foster City.
- Provide a mix of neighborhood retail uses in a unique setting around a town square.

D. PROPOSED PROJECT

The proposed project would develop the 15-acre City-owned site adjacent to the Foster City Government Center with the land uses shown in Table III-1. A

conceptual master site plan is shown in Figure III-2. In summary, the proposed project includes the following elements:

- **Market Rate Senior For Sale Housing Units** – Fourteen new buildings (all up to 65 feet tall) totaling 196 units would be developed and designed to provide the setting and conveniences that facilitate aging in place. Units would range in size from two to four bedrooms, and from approximately 1,185 to 2,155 square feet. Each unit would have two covered parking spaces and elevator access. Guest parking would also be provided. All of the market rate for sale housing units would be restricted to 55 years of age and older.
- **Assisted and Independent Living Units** – One new stand-alone building (up to 95 feet tall) totaling 152 units. Units would range in size from studio apartments of approximately 475 square feet to two-bedroom units of about 1,150 square feet. All of the apartments would be licensed for assisted living services and approximately 16 of the units would be designed for memory care services designed for residents with Alzheimer's and other forms of dementia. This building would be programmed as an assisted and independent living apartment community in which residents pay rent on a month-to-month basis. These apartments would be restricted to 62 years of age and older. A garage is anticipated to provide approximately 40 parking spaces for use by the residents of assisted and independent living units, and approximately 43 spaces in the main shared surface parking lot would be dedicated to the assisted living building. The ground floor of the Assisted and Independent Living building would also contain up to 9,800 gross square feet of commercial uses.

Source: The New Home Company, BAR Architects, 2013

Note: Retail, affordable, and assisted buildings are marked. All other buildings would be market-rate housing.
DU = number of dwelling units

Figure III-2
The 15 Acres
Master Site Plan

TABLE III-1 PROPOSED LAND USES

Land Use	Units/Spaces	Sq. Ft.
Residential		
Market Rate For Sale Senior	196	
Assisted & Independent Living	152	
Affordable Senior	66	
Total	414	
Commercial		
Neighborhood Retail		16,400
High-Turnover Restaurant		12,000
Quality Restaurant		11,600
Office		30,000
Total		70,000
Public Green Spaces		
Town Square		22,000
Shell Blvd. Setback		17,500
Central Promenade Linear Park		15,000
Total		54,500

Source: Foster City Community Partners, 2012.

- **Affordable Senior Housing Apartment** – One new stand-alone building (up to 85 feet tall) totaling 66 apartment units with one or two bedrooms. Units would be approximately 575 square feet. This building would be age restricted to 62 years and older. There would be common space and other amenities within the building. The main shared surface parking lot would include approximately 53 parking spaces dedicated for use by the affordable senior housing apartments. The ground floor of the affordable senior housing building would also contain up to 13,000 square feet of neighborhood retail uses.
- **Commercial** – Two new stand-alone buildings with retail uses on the ground floors and office space above, one up to 25 feet tall and the other up to 80 feet tall. These buildings would, together with the retail uses included in the affordable apartment building, provide a total of up to 70,000 square feet commercial space available for retail, restaurant, and office uses. The main shared surface parking lot would provide approximately 202 parking spaces for uses associated with the commercial space.
- **Public Open Space** – A 22,000-square-foot public gathering place or town square, which would be privately owned and maintained. It would be designed to activate the retail center and provide a vibrant venue for

City wide events, festivities and farmers market opportunities. Additional public green spaces, paseos, and access throughout the project site would be provided. Landscaped treatments would create green edges at the perimeters of the project and would include benches and seating areas, especially at the large setback along Shell Boulevard.

- **Circulation and Parking** – Primary vehicle access to and from the project site would be provided from Foster City Boulevard, with secondary access from Shell Boulevard, Civic Center Drive and Balclutha Drive. A central street going east to west would connect Shell Blvd to the town square and the large publicly accessible surface parking lot adjacent to Foster City Boulevard. Bicycle and pedestrian connections from adjacent neighborhoods and streets would be provided. The project would include a variety of parking options including: on street parallel parking on designated streets, a large publicly accessible surface parking lot adjacent to Foster City Blvd and the town square and private garages and/or ground level parking within proposed buildings. The project's shared parking supply would include a total of approximately 298 spaces in the main shared surface parking lot on Foster City Boulevard, as well as approximately 58 on-street parking stalls and 432 garage parking spaces for the assisted living and market rate housing units, resulting in a total of approximately 788 parking spaces. Parking lots would also include landscaped walkways dedicated to pedestrian circulation.

  This EIR also considers a variant that would modify Balclutha Drive to allow two-way vehicle access, as described in Section V.B, Transportation and Circulation.

E. CONSTRUCTION SCHEDULE

Development of the entire 15-acre site as proposed project is anticipated to take approximately 38 months beginning in spring of 2014 with completion around summer of 2017. This period would include approximately 18 months of grading and infrastructure work, 20 months of building construction, and a small period to demolish the existing building on-site.

F. DISCRETIONARY ACTIONS

It is anticipated that this EIR will provide environmental review for all discretionary approvals and actions necessary for the project. A number of permits and approvals would be required before the development of the project could proceed. As Lead Agency for the proposed project, the City of Foster City would be responsible for the majority of approvals required for development. Other agencies also have some authority related to the project and its approvals. A list of required permits and approvals that may be required by the

City and other agencies includes, without limitation, those provided in Table III-2.

TABLE III-2 REQUIRED PERMITS AND APPROVALS

Lead Agency	Permit/Approval
City of Foster City	▪ Environmental Review ▪ General Plan Amendment ▪ Rezoning/General Development Plan ▪ Tentative Map ▪ Specific Development Plan/Use Permit ▪ Development Agreement ▪ Building Permits
Responsible Agencies	
San Francisco Bay Regional Water Quality Control Board (RWQCB)	▪ National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge
State of California Department of Social Services	▪ Any necessary permits related to senior housing/nursing facilities
US Army Corps of Engineers	▪ Wetland Delineation Permit
Other Agencies	
San Mateo County Environmental Health Dept.	▪ Restaurant Licenses
Pacific Gas & Electric	▪ Approval of electrical and natural gas improvements, hook-ups, and service
AT&T	▪ Provision of telephone and internet services

Source: Urban Planning Partners, 2013.

1. City of Foster City

Key discretionary actions required by the City of Foster City are outlined below.

a. General Plan Amendment

The proposed project would change the General Plan Land Use Plan designation for the project site from Public/Semi-Public to Civic Center Mixed Use (a new designation), providing a mix of adult and senior citizen oriented housing, including a continuing care retirement community, affordable rental housing, and various neighborhood retail/restaurant uses.

b. Rezoning/General Development Plan

The site would be rezoned from PF/PD (Public Facilities/Planned Development) to CM/PD/SHO (Commercial Mix/Planned Development/Senior Housing Overlay District) via the approval of a General Development Plan (GDP). The GDP would list the development standards applicable to the project site, including setbacks, lot sizes, building heights, etc.

c. Tentative Map

A Tentative Map approval is required to authorize subdivision of the project site into parcels to accommodate new commercial, residential, and park uses. A Tentative Map is also required for the division of land into additional parcels.

d. Specific Development Plan/Use Permit

Specific Development Plan (SDP)/Use Permit approvals will be necessary to allow the construction of any improvements or buildings. Building design and architecture, as well as the details of any improvements, are considered as part of this approval. An SDP/Use Permit is for the approval of the site development as well as design of buildings, and in a PD District includes architectural review. SDP/Use Permits are reviewed and approved by the Planning Commission.

e. Development Agreement

Project approvals would include a Development Agreement between the project sponsors and the City to vest the entitlements and local land use approvals and to further set forth the improvements and other obligations of the project sponsors.

IV. PUBLIC POLICY

This chapter includes a discussion of the proposed project's relationship with applicable planning-related policies (including land use policies). This discussion is provided in a stand-alone chapter (rather than part of Chapter V, Setting, Impacts and Mitigation Measures) of the EIR, since a policy conflict is not, in and of itself, considered a significant environmental impact under CEQA. A project's inconsistency with a policy is only considered significant if such inconsistency would cause *physical* environmental impacts. Policies are discussed in select topical sections of the EIR where applicable policies relate to physical elements and are intended to avoid or mitigate an environmental effect.

In reviewing this chapter, it is important to understand that the determination of whether a project is consistent with a specific policy can be subjective. As a result, policy consistency determinations are ultimately made by the City's local decision-making body (e.g., Planning Commission or City Council). It is not the purpose of this EIR to interpret policy. Goals and policies are interpreted by the decision-makers. The analysis in this chapter is intended to provide the decision-makers with a list of the goals and policies that are pertinent to the project and site. The analysis represents the findings of policy review by the EIR author and is intended to provide a guide to the decision-makers for policy interpretation.

The main guiding documents regulating land use within and around the project site are the:

- City General Plan (particularly the Land Use and Circulation Element, and the Housing Element.);
- City Zoning Ordinance;
- Civic Center Urban Design Guidelines; and the
- San Mateo County Comprehensive Airport Land Use Plan.

Consistency of the proposed project with other non-land use related policies is addressed in the appropriate topical sections of the EIR (e.g., air quality). Applicable land use policies from each of the documents listed above are described below.

1. Foster City General Plan

This section provides a description of the Foster City General Plan and includes a discussion of the proposed project's relationship with applicable goals, policies, and programs outlined in the General Plan. Applicable planning-related policies in the General Plan and the relationship of the proposed project with these policies is summarized in Table IV-1 located at the end of this chapter.

The Foster City General Plan (General Plan) is a comprehensive plan for the growth and development of the City. The General Plan includes policies related to: land use and circulation; housing; parks and open space; conservation; and noise and safety. These topics are addressed within individual elements of the General Plan. The General Plan Land Use and Circulation Element, Housing Element, and the Parks and Open Space Element and the Conservation Element are applicable to land uses within the project site and are described below.

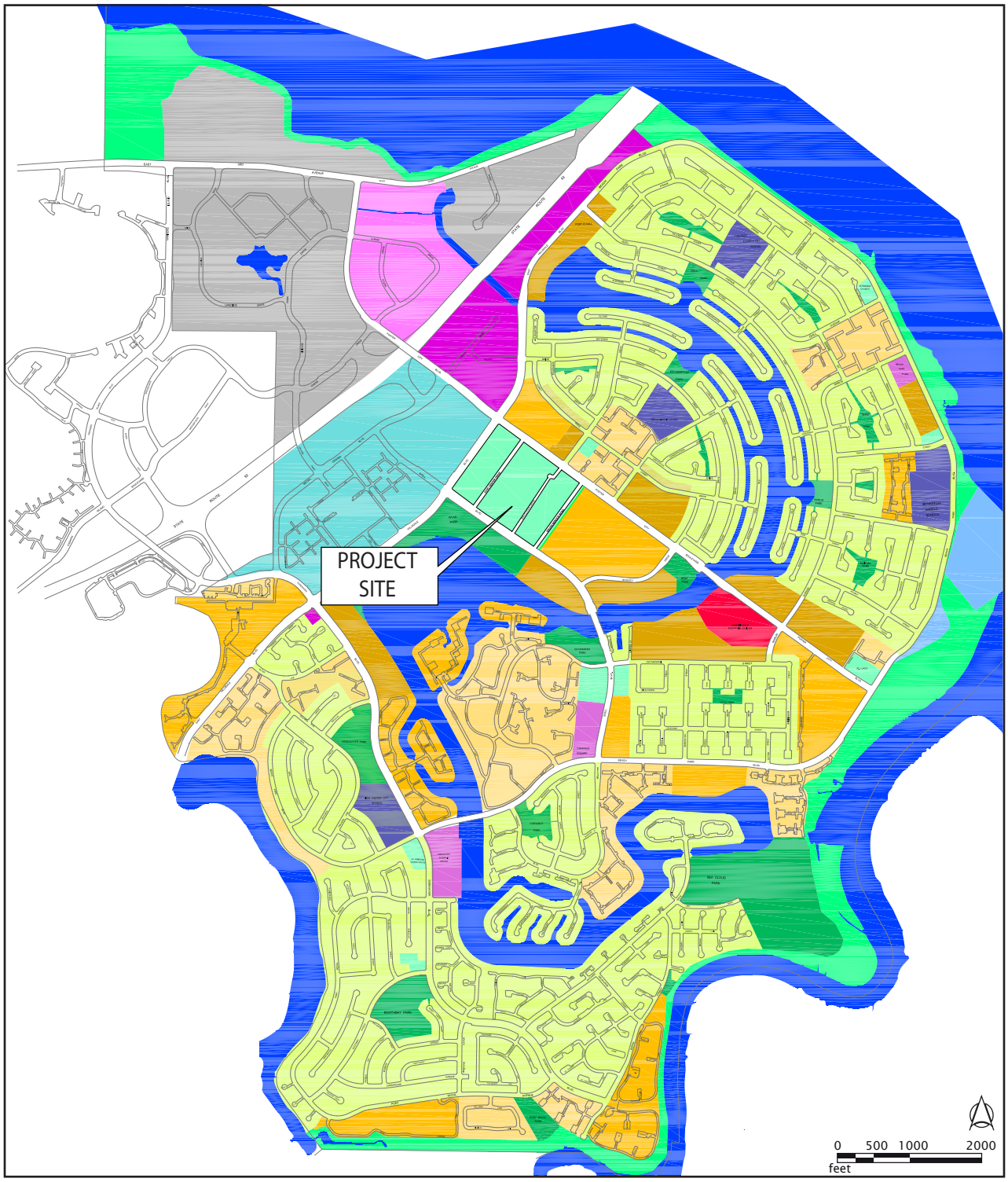
a. Land Use and Circulation Element

(1) Overview

The Land Use and Circulation Element establishes a pattern for land use and sets clear standards for the density of population and the intensity of development for 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 generated by development. The overall vision of the Land Use and Circulation Element is for the City to "maintain the integrity and high quality living environment of the City's residential neighborhoods; achieve a successful buildout that balances jobs and housing, infrastructure capacity with development needs, and reinforces Metro Center and the City Center; and respond to longer-term land use and circulation needs in an appropriate manner."

The General Plan designation of the project site is Public and Semi-Public, as depicted in Figure IV-1. Properties designated as Public and Semi-Public typically are used for public purposes or for specified public utility purposes (e.g., community buildings, schools, and churches).

A General Plan Amendment would re-designate the project site as Civic Center Mixed Use (a new designation), providing a mix of adult and senior citizen-oriented housing, including a continuing care retirement community, affordable rental housing and various neighborhood retail/restaurant uses.



Source: City of Foster City, 2013

- Apartment
- Condo
- Elementary School
- Light Industrial
- Neighborhood Commercial
- Neighborhood Commercial/Apartment Residential
- Open Space
- Parks
- ROP
- Public/Semi Public
- Service Commercial
- Single Family
- Town Center
- Townhouse
- Two Family
- Water
- Water Commercial

Figure IV-1
The 15 Acres
Existing General Plan Designation

The City of Foster City is currently updating its Land Use and Circulation Element to address the changing needs of the City and its residents. One change to be included in this update is the change in the project site land use designation, as a part of the proposed project, from Public/Semi-Public land use to a Civic Center Mixed-Use designation.

(2) Relationship to Proposed Project

The proposed project would include the development of a mixed-use development (senior housing and care facilities, neighborhood retail, and community services) on a vacant site in Foster City. Nearby civic and cultural amenities make it ideally suited for senior-focused housing, a vibrant town square, and other community provisions that would benefit Foster City as a whole. As part of the proposed project, the City would create a new General Plan land use designation, Civic Center Mixed Use, that would provide for and encourage a mix of housing and neighborhood serving retail and restaurant uses. The proposed project is generally consistent with the goals and policies of the General Plan Land Use and Circulation Element, as detailed in Table IV-1at the end of this chapter.

b. Housing Element

(1) Overview

The Foster City General Plan Housing Element was last updated in 2009, and adopted in February, 2010. As required by State law, the Housing Element of the Foster City General Plan discusses the City's "fair share allocation" of regional housing need by income group, as projected by the Association of Bay Area Governments (ABAG). ABAG's determination of the local share of regional housing needs takes into consideration the following factors: market demand for housing; employment opportunities; availability of suitable sites and public facilities; commuting patterns; type and tenure of housing need; loss of units contained in assisted housing that changed to non-low-income use; and special needs housing requirements.

ABAG adopted the Final Regional Housing Needs Allocation (RHNA) for the period of 2007 to 2014 in May 2008.[1] Foster City's allocation is 486 units, with 111 (23 percent) for very low income households, 80 units (16 percent) for low income households, 94 units (19 percent) for moderate income households, and 201 units (41 percent) for above moderate income house-

[1] Association of Bay Area Governments, 2008. Final Regional Housing Needs Allocation. www.abag.ca.gov/planning /housingneeds/pdfs/Final_RHNA.pdf. Accessed November 2008.

holds. The Housing Element identifies several sites, including the project site, with potential to provide additional housing.

(2) Relationship to Proposed Project

The proposed project would further the housing goals of the City's housing element by providing 196 market rate for sale units, 66 affordable apartments, and 152 assisted and independent living apartments on a project site that was identified as a potential housing opportunity site. The proposed project is generally consistent with the goals and policies of the General Plan Housing Element as detailed in Table IV-1.

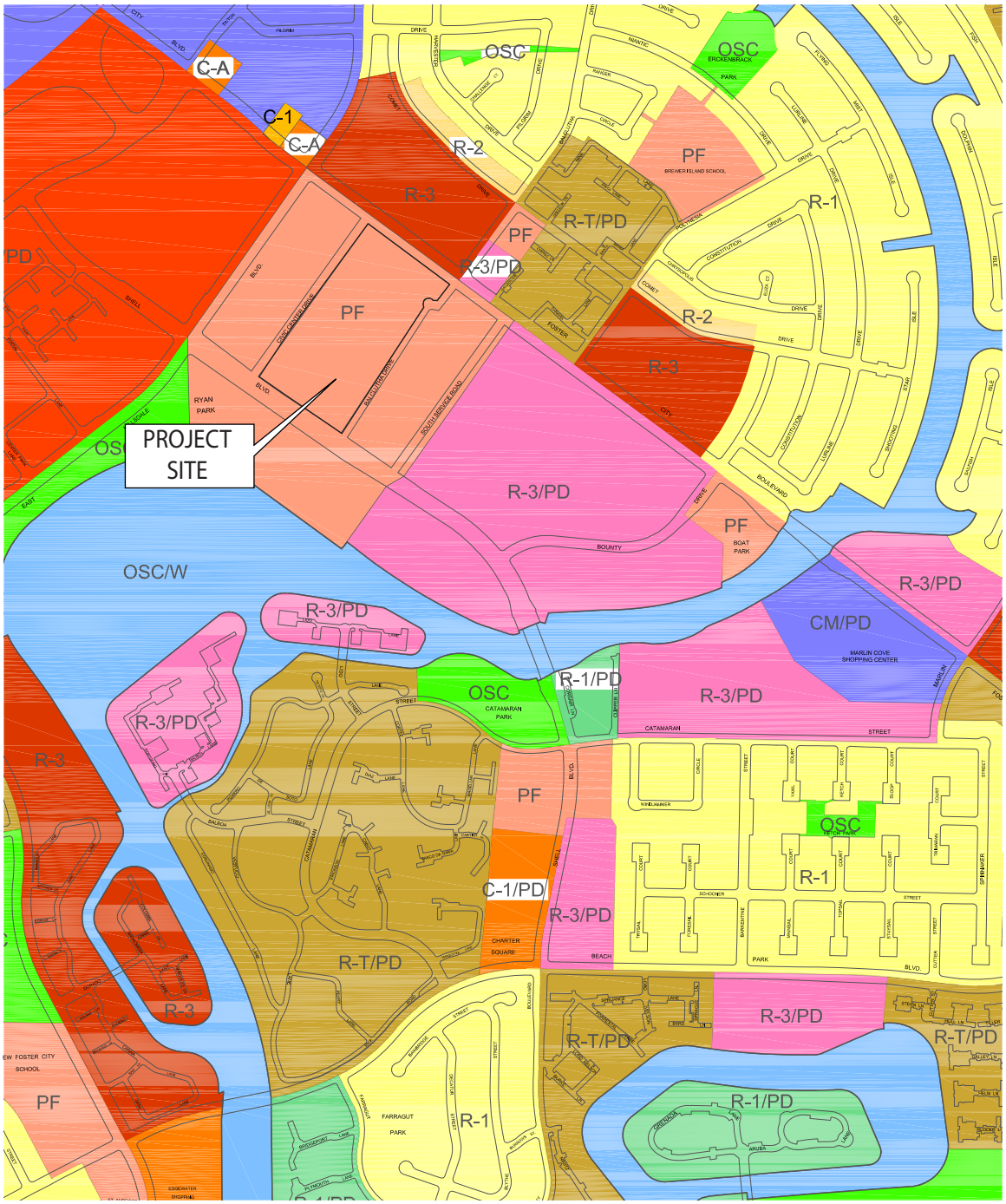
2. Foster City Zoning Ordinance

The following provides a description of the Foster City Zoning Ordinance as well as the proposed project's consistency with applicable provisions of the Zoning Ordinance.

a. Overview

The City of Foster City Zoning Ordinance (Zoning Ordinance) implements the land use policies of the General Plan and other City plans, policies, and ordinances. The Zoning Ordinance divides the City into districts, each of which is assigned different regulations. These regulations direct the construction, nature, and extent of building use. The site would be rezoned from PF/PD (Public Facilities/Planned Development Overlay) to CM/PD/SHO (Commercial Mixed/Planned Development/Senior Housing Overlay District), as depicted in Figure IV-2. The Civic Center Mixed Use District that would be created as part of the proposed project is intended to be combined with the PD Combining District, and only allows those uses specified within the use permit required in connection with the PD Combining zoning district approval. The PD Combining District is designed to accommodate various types of development and is intended to allow flexibility in design. With the exception of the off-street parking requirements, standards usually prescribed by the Zoning Ordinance may be waived in the PD Combining District. The Senior Housing Overlay District is a floating district that is used only in conjunction with the PD Combining District. As a special overlay district, it is intended to provide special opportunities and requirements designed to facilitate the development and construction of affordable senior citizen-oriented rental housing.

An application for a PD District must be accompanied by a General Development Plan (or Master Plan, as it is referred to in this EIR). The project site was previously included in the Civic Center Master Plan, adopted in 1998. The current application would replace prior approvals for the project site. Specific findings must be made by the Planning Commission in order to approve or conditionally approve a General Development Plan, as identified in Section



Source: City of Foster City, 2004

Primary Districts

- R-1 Single Family Residence
- R-2 Two Family Residence
- R-T Townhouse Residence
- R-3 Medium Density Multiple Family Residential
- R-4 High Density Multiple Family
- C-A Commercial Automotive
- CO Commercial Office
- C-1 Neighborhood Business
- C-2 General Business
- CM Commercial Mix
- M-1 Light Industrial
- PF Public Facilities
- OSC Open Space and Conservation

Combining Districts

- PD Planned Development
- X Future Development
- W Aquatic Development

Figure IV-2
The 15 Acres
Existing Zoning Designation

17.36.030 of the City's Zoning Ordinance. All uses in a PD District also require a Specific Development Plan/Use Permit.

Following approval of a General Development Plan, the City requires the submittal of a Specific Development Plan/Use Permit before any development can occur on the project site. If the project is phased, the Specific Development Plan can address the specific phase for which development approval is requested. A Specific Development Plan requires information specified in Section 17.36.050 of the Zoning Ordinance.

Off-street parking requirements in a PD District are the same as those for specific land uses as specified in Section 17.62 of the City's Zoning Ordinance; however, parking standards may be waived or modified upon approval of the City in order to facilitate senior housing. Parking is addressed in Section V.B, Transportation, Circulation and Parking.

General development criteria related to PD Districts are contained in Section 17.36.070 of the Zoning Ordinance and address the following topics:

- Design and location to conserve energy resources;
- Clustering of buildings;
- Compatibility with wildlife habitat areas;
- Minimizing impacts from traffic on residential streets;
- Minimizing grading;
- Protection of visual quality, major watercourses, vegetative communities, and wildlife habitats;
- Planting of appropriate vegetation;
- Undergrounding of utility lines;
- Provision of adequate services and utilities; and
- Approval of phases of development only if each phase is designed to stand as an independent development and each phase meets the requirements for PD zoning.

b. Relationship to Proposed Project

As stated above, the proposed project would rezone the project site from PF/PD to CM/PD/SHO to allow mixed commercial and senior residential uses on the project site. The proposed General Development Plan lists the development standards applicable to the project site, including setbacks, lot sizes, building heights, etc. The rezoning and General Development Plan is consistent with the intent of the PD and SHO Zoning Districts. At the time of Specific Development Plan approval, the proposed project would be required to undergo the City's Design Review process to ensure that the project conforms to the design review criteria for mixed use development. As proposed, the project is generally consistent with the provisions of the City's Zoning Ordinance.

3. San Mateo County Comprehensive Airport Land Use Plan

The project site is located within the vicinity of two airports governed by the San Mateo County Comprehensive Airport Land Use Plan (CLUP). A description of the proposed project's relationship to and consistency with the CLUP is provided below.

a. Overview

State law requires an airport land use commission to prepare and adopt a comprehensive airport/land use compatibility plan (CLUP) for each public-use airport in the county.[2] The CLUP is a tool used by airport land use commissions to fulfill their purpose of promoting airport/land use compatibility. The purpose of the CLUP 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.

The CLUP 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.[3] The project site is located within the airport influence areas of both the San Francisco International and San Carlos Airports. The Airport Land Use Plans for each respective airport and applicable policies are discussed below.

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[2] California Public Utilities Code Section 21675(a).

[3] City/County Association of Governments of San Mateo County (C/CAG), 1996. San Mateo County Comprehensive Airport Land Use Plan, 1996. Adopted November 14, 1996; City/County Association of Governments of San Mateo County (C/CAG), 2012, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, Adopted October 2012.

(1) San Carlos Airport

The project site is located approximately 2.5 miles north of the San Carlos Airport. Although the project site is located outside of the mapped height restriction area for this airport, it is located within Area A of the Airport Influence Area (AIA).[4] This boundary defines an area within which a real estate disclosure notice must be provided to a buyer or lessee of property within the boundary, regarding the proximity of the nearby airport.

The project site is located outside of the 55 dB Community Noise Equivalent Level (CNEL) aircraft noise contour for the San Carlos Airport. This noise contour is used by the Airport Land Use Commission as the threshold for triggering review and evaluation of proposed land use policy actions in proximity to the airport with respect to noise impacts.[5]

Certain types of land uses are recognized by the Airport Land Use Commission as hazards to air navigation in the vicinity of the San Carlos Airport. 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 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 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-climbout areas.
- Any use that would generate electrical interference that may interfere with aircraft communications or aircraft instrumentation.

(2) San Francisco International Airport

The project site is located approximately 8.5 miles south of San Francisco International Airport. The project site is located within Area A of the AIA, which includes all of San Mateo County, all of which is overflown by aircrafts flying to and from San Francisco International Airport at least once per week

[4] City/County Association of Governments of San Mateo County (C/CAG), 2004, CCAG Land Use Committee Recommendation: Revised Airport Influence Area Boundary for San Carlos Airport – Areas A & B. Adopted October 2004.

[5] City/County Association of Governments of San Mateo County (C/CAG), 1996, op. cit., p. IV-25 to IV-27.

at altitudes of 10,000 feet or less above mean sea level.[6] Airport Influence Area A denotes the Real Estate Disclosure Area, within which the real estate disclosure requirements of State law apply. The law requires that the following statement must be included in the notice of intention to offer the property for sale:

> ***Notice of Airport in Vicinity***
> *This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.*

Additionally, although the project site is not located within the Federal Aviation Administration (FAA) Federal Aviation Regulations (FAR) Part 77 airspace protection criteria for the airport, it is located within the far southeast side of the 14 Code of Federal Regulations (CFR) Part 77 Airport Imaginary Surfaces. The highest obstruction permitted within the project site associated with the approach surface is approximately 700 feet.[7]

The project site is outside of the CNEL 65, 70, and 75 dB noise contours for the San Francisco International Airport, as defined by the projected 2020 CNEL noise contour map from the Draft Environmental Assessment for the Proposed Runway Safety Area Program.[8] Therefore, residential uses at the project site are not considered incompatible with the San Francisco International Airport due to impacts related to noise. For further information on noise at the project site, please see Chapter V.D, Noise.

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[6] City/County Association of Governments of San Mateo County (C/CAG), 2012, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, Adopted October 2012.

[7] City/County Association of Governments of San Mateo County (C/CAG), 2012, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, Adopted October 2012. Exhibit IV-16: 14 CFR Part 77 Airport Imaginary Surfaces – Far Southeast Side.

[8] City/County Association of Governments of San Mateo County (C/CAG), 2012, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, Adopted October 2012. Exhibit IV-5: Noise Compatibility Zones.

b. Project Relationship

The project site is located outside of the mapped height restriction areas for the San Carlos Airport and thus building heights are not regulated by the CLUP. Implementation of mitigation measures detailed in Section V.J Aesthetics and Shade and Shadow, would reduce potential impacts associated with increased light and glare. It is anticipated that construction materials would be similar to other buildings in the area and would not create conflicts with design restrictions regarding light or direction of light towards aircraft, nor would any uses generate conflicts with the CLUP. The site is also located outside of the 55 dB CNEL aircraft noise contour which is used as the threshold for triggering review and evaluation of proposed land use policy actions in proximity to the airport with respect to noise impacts. The proposed project is consistent with the CLUP.

As required, the real estate transfer documents distributed to prospective buyers or leasees at the project site would disclose that the property is located within Area A for the AIA for the San Carlos and San Francisco International Airports, and that the site may be subject to aircraft overflight. In addition, the Airport Land Use Commission (ALUC) recommends that the project applicants submit FAA Form 7460-1, "Notice of Proposed Construction or Alteration" to the FAA Western-Pacific Regional Office in Southern California. FAA staff would use this form to determine if the proposed structures (up to about 95 feet in height) would affect the Class B airspace for San Francisco International Airport. However, as the highest obstruction permitted within the project site associated with the approach surface is approximately 700 feet, the height of the proposed structures would not impact the airspace.

4. Civic Center Urban Design Guidelines

The project site was originally part of a larger Civic Center Master Plan approved in 1998 by the City Council that proposed development of a new Government Center, North Peninsula Jewish Campus (NPJC) facilities, and Episcopal School of the Peninsula (ESP) facilities on the City-owned, 36-acre parcel. The City adopted Civic Center Urban Design Guidelines in 1999 for the developments. The following provides a description of the Civic Center Urban Design Guidelines as well as the proposed project's consistency with applicable provisions of the Guidelines.

a. Description

The Civic Center Urban Design Guidelines were created to fulfill the following purposes:

- Establish a comprehensive framework that will guide public and private sector development of the 36 acre Foster City Civic Center parcel.

- Guide the character of development to ensure high-quality improvements reflecting the aspirations of the community and its concerns.
- Determine the appropriate location of certain building functions and entries.
- Determine the size and location of vehicular and pedestrian circulation improvements.
- Determine the appropriate size and character of proposed open spaces.
- Determine the appropriate size, character, and features of proposed buildings.
- Create guidelines that will form the basis of evaluating proposals for actual building and site improvement projects.

b. Consistency

The City of Foster City recognizes that the land uses of the proposed project are not consistent with all uses described in the Civic Center Urban Design Guidelines. Plans for ESP educational facilities and athletic fields at the site have since then been replaced with those of the proposed project, and thus certain parts of the Urban Design Guidelines would not apply to the new project. However, as discussed earlier, a General Plan Amendment would be included as part of the project, making the land use of the proposed project consistent with local policy, and the project will adhere to the relevant portions of the Urban Design Guidelines, discussed below. Design guidelines will be enforced through the design review process.

- **Edges and Linkages:** Streets on or near most edges of the project site would set a beginning framework for the site development. The design would continue the theme of streetscape elements such as trees, lighting, and paving established by the civic buildings to the north and the NPJC to the south. Connection to the west to Leo Ryan Park and the lagoon is a primary consideration with the proposed project, and would be accomplished through the development of a new central street that would be established mid-site, running east-west spanning the entire distance between Foster City Boulevard and Shell Boulevard. This connection would include an opening facing the park and would be situated at the signalized crossing on Shell Boulevard, providing easy and safe access between the plaza and the park. Development of other new streets (Streets A and B) running north-west from Civic Center Drive to the central street would create further linkages within the project site and from the project site to surrounding streets. Pedestrian paseos would be established to improve

connectivity between the central street and Balclutha Drive[9]. An additional paseo connection would be established running east-west from the project parking area to Street A north of the central street. The Foster City Boulevard power line easement creates a "no build" zone. This theme is established by the parcel east of the NPJC, which is used for parking and is continued by the surface parking lot of the proposed project. The buildings north of the site along Civic Center Drive include City Hall, police and fire departments, and the library/community center. To the south, the NPJC along Balclutha Drive forms an established edge of buildings and spaces.

- **Gateways:** Gateways would occur at the various entrances to the site, including at the entrance to the central street, entrances to other internal streets, and pedestrian entrances and connections from all surrounding streets. The primary entry to the project for vehicles would be located at the Shell Boulevard signal and would be prominently designed. Other major entrances for vehicles would be located on Balclutha Drive and Civic Center Drive, allowing access to the project parking lot.
- **Landmark Buildings:** The buildings in the proposed project would be in a variety of scales to fit each guideline category of "major," "secondary," and "minor." The three taller buildings (about 80 to 95 feet in height) would be major landmarks in the City and would identify the project location and Civic Center core.

Therefore, despite the altered land uses, the proposed project is generally consistent with the major elements and themes of the Civic Center Urban Design Guidelines.

[9] A paseo is a small street or lane, often used primarily for pedestrian travel.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Land Use and Circulation Element		
Goal 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 to the extent possible; and (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.	The proposed project would establish residential uses within an undeveloped site. The surrounding area includes a mix of residential, public services, and recreational uses, which the proposed project echoes. Potential conflicts (i.e., noise) between new residential and commercial uses within the mixed use development and external commercial uses and major roadways would be reduced to a less-than-significant level with the implementation of mitigation measures recommended in this EIR. The proposed project would provide 1.3 acres of open space for use by residents and the public. The mix of neighborhood retail and service uses and the open space within the project will serve residents and the public.
Goal 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 and welfare of the community.	The site design and circulation are analyzed in this EIR. The site plan and architectural design have been, and will continue to be, the subject of detailed review by City staff, the Planning Commission and City Council, to ensure a high quality design. The proposed project would be subject to design review at the time of Specific Development Plan approval.
Goal LUC-C	*Provide for Economic Development.* Provide for economic development which: (1) maintains the City's ability to finance City services and construction and maintenance of public improvements; (2) offers local employment opportunities for Foster City residents so that inter-city commuting can be reduced; (3) assures the availability and diversity of resident-serving goods and services; and (4) allows for specialized commercial uses, such as automobile service stations, water-oriented commercial uses and day care facilities.	The project site is currently vacant. Development of the project site is intended to promote and accommodate a more efficient use of land and increase the opportunities for small, resident-serving businesses to remain in or relocate to the City. Development of the proposed project would provide jobs for an estimated 168 employees at the project site. These new jobs would increase the availability of local employment opportunities and could reduce inter-city commuting.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Goal LUC-D	*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 of Foster City's residents.	The proposed mixed use development would provide commercial, residential, and open space uses on the project site. The project would provide senior housing at a variety of care levels and prices. Also, the affordable housing component would offer senior housing at below-market rates. The proposed project would increase the availability of employment and housing opportunities within the City. The project also includes 1.3 acres of open space designed for use by residents and the general public.
Goal LUC-F	*Provide Adequate Services and Facilities.* Ensure that new and existing developments can be adequately served by municipal services and facilities.	Mitigation measures recommended in Section V.I, Public Services, Utilities and Recreation, require necessary repairs and/or upgrades to the existing infrastructure serving the project site. With implementation of these mitigation measures, the proposed project would be adequately served by existing public service providers and infrastructure.
Goal LUC-H	*Encourage Mixed Use Projects.* Encourage mixed use projects, with the residential portion of mixed use projects built at the maximum allowed densities to reduce trips to, from and within the City.	The proposed project is a mixed use development providing both commercial and residential uses. Increased housing and employment opportunities could reduce the number of trips to, from, and within the City.
Goal 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.	The design of on-site circulation, access and parking areas, although still conceptual in nature, appears to disperse traffic throughout the project site and create multiple access routes for motor vehicles, pedestrians, and bicyclists. The proposed roadway widths will be adequate to accommodate internal vehicle circulation, including access by emergency vehicles. Because the proposed project's senior residents will likely frequent the retail and open space areas provided on-site, pedestrian circulation and linkages are a key element in the plan.
Goal 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.	A comprehensive traffic analysis is included in Section V.B, Transportation, Circulation and Parking. Implementation of the proposed project would not result in any significant traffic impacts.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Goal LUC-K	*Provide Adequate Parking.* Ensure that adequate off-street parking is incorporated into new projects and designed for safe and effective circulation.	The proposed project would provide approximately 298 shared surface parking spaces for use by the Assisted and Affordable residential buildings as well as by commercial uses, 58 on-street guest parking spaces, and 432 garage spaces for use by the assisted and market rate units, for a total of 788 parking spaces. The provision of parking would be adequate to serve project demand. The design for on-site circulation, access, and parking areas would disperse traffic throughout the project site and create multiple access routes for motor vehicles, pedestrians and bicyclists.
Policy LUC-6	*Planned Development Zoning.* The Planned Development zoning designation may be applied to any designated multi-family, commercial or industrial site to allow a mixed-use project, subject to the following standards: …(c) advertising or identification signs are limited in size and number, and regulated by a project-specific sign program; (d) any residences located in the development can be protected by landscaping, open spaces, and other design features from the noise and traffic generated by commercial establishments; (e) off-street parking for residents, employees, and customers is provides in accordance with the Municipal Code; and (f) an adequate amount of open space for use by any residents of the project is provided. Such an open space area should be protected to provide a private area for residents.	The project site will be rezoned from Public Facilities/ Planned Development Combining District (PF/PD) to Commercial Mix/Planned Development/Senior Housing Overlay (CM/PD/SHO). Project signage would be subject to design review prior to issuance of a Site Development Permit/Use Permit. Project residences located at the ground level would be buffered from adjacent commercial uses and roadways by open plazas and landscaped areas. The proposed project would provide parkland as described in Section V.I, Public Service and Utilities. However, the project applicants would be required to pay in-lieu fees subject to the provisions of the City's Municipal Code.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy LUC-15	*Density of Residential Projects.* The City will allow for a range of residential densities and housing types. Densities should be calculated based on gross square footage of parcels, unless circumstances require the use of net buildable land instead. The maximum allowed density maybe achieved by use of the "PD" zoning designation or through mixed use residential/commercial development in appropriate locations. The maximum residential density for a particular type of housing may be approved if the following are included: (a) Excellence in architecture and site planning is achieved through creative solutions to building location and/or design, the preservation of views or vistas, the creation of usable open space areas for public and/or private enjoyment, the provision of pedestrian/bicycle pathways for links to existing or proposed routes, the preservation of Bay wildlife resources, and the conservation of energy resources; (b) Clustering to reduce paving, grading runoff, and changes in vegetation cover is used; (c) Additional landscaping area is provided on-site for the enjoyment of project residents; (d) recreational facilities are provided on-site for the enjoyment of project residents; (e) Traffic, noise, or visual effects of the higher density development would not significantly affect adjacent or nearby residences, or the overall streetscape; and (f) Very low, low and moderate income units are included in the project.	Residential uses on the project site would include medium- to high-density uses. The proposed project would be subject to design review at the time of Specific Development Plan approval. The proposed project would include an affordable housing component, as required. The proposed project would provide a variety of landscaped and plaza areas between project buildings and internal and external roadways. Impacts related to traffic and visual quality would be mitigated to a less-than-significant level with implementation of the mitigation measures recommended in this EIR. Impacts related to construction noise would be significant and unavoidable.
Policy LUC-16	*Provision of Affordable Housing.* The City will implement the policies and actions outlined in the Housing Element to increase the economic feasibility of providing housing affordable to low and moderate income residents. The City will allow increased residential densities in exchange for, among other criteria, the inclusion of lower and moderate income dwelling units, if the initial and future affordability is guaranteed through participation in an affordable housing program. Specific types of requirements include: On sites outside the Community Development Project Area, the City will negotiate with developers to include homes affordable to lower and moderate income residents by offering incentives as outlined in the Housing Element and Zoning Ordinance.	The proposed project would include an affordable component. In order to comply with the City's General Plan and, as well as to avoid in-commuting and associated traffic congestion, 66 of the 414 senior housing units would be affordable senior apartments.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy LUC-17	*Density Bonus for Affordable Housing and Senior Housing Projects.* A density bonus above the maximum density otherwise allowed may be granted for affordable housing projects consistent with Policy H-23 in the Housing Element. Density increases may be allowed for projects meeting particular City needs for senior housing and housing in commercial areas.	The proposed project would provide both an affordable component consistent with Policy H-23 of the Housing Element and senior housing that would help meet the City's senior housing needs.
Policy LUC-18	*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 the maximum allowed densities to reduce trips to and from and within the City. In allowing higher residential densities for mixed use projects, the project must comply with the goals and policies of the General Plan, including Policies LUC-15 and LUC-16.	The proposed project would develop up to 414 residential units/beds on the project site. Maximum allowable densities within PD Districts are determined by the City, and are not regulated by the Zoning Ordinance. To further General Plan policies LU-15 and LU-16, the project includes open space, affordable housing units, landscaping and would be subject to design review to ensure excellence in architecture.
Policy LUC-38	*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.	The proposed project would be subject to design review at the time of Use Permit/Specific Development Plan approval. Implementation of the recommended mitigation measures in Section V.J, Aesthetics and Shade and Shadow, would reduce potential impacts associated with light and glare.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy LUC-39	*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.	The proposed project would be subject to design review at the time of Site Development Permit/Use Permit approval.
Policy LUC-40	*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. 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.	The proposed project would be subject to design review at the time of Site Development Permit/Use Permit approval.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy LUC-43	*City-Owned and Controlled Lands.* City-owned and controlled lands will be held or "banked" until such time as a beneficial use can be made. Banked City lands should also be used to meet City service needs (on lands adjacent to City Hall) and recreation and open space needs (on lands with water access). The City will not sell or exchange land at less than fair market value, except in exchange for the provision of low or moderate income housing. Development and design standards shall apply as in any private development, including the allowance of higher densities for residential projects which include low or moderate income housing. The City will consider the following criteria in determining the most beneficial use of City lands and will consider the exchange or sale of land for private development if such development can meet City needs based on these criteria: (a) Revenue generating potential of the land use; (b) Extent for which general public access and use is provided; (c) Preservation of open spaces or important natural habitats as part of the project design; (d) Extent to which the project fulfills important City needs, such as for unmet commercial or public services, low or moderate income housing, recreation, or public facilities; (e) Compatibility of proposed land use(s) with existing/proposed adjacent properties use(s).	The proposed project would utilize City-owned land to help fulfill City needs for senior housing, both at a market-rate and below-market-rate level. The proposed project would also provide public open space and recreational space. The housing and retail components of the proposed project would generate revenue for the City.
Policy LUC-47	*Permitted Land Uses on Vacant Sites.* Permitted land uses on vacant sites should be compatible with the existing uses of land surrounding the vacant parcel, environmental characteristics of the site, the capacity of public facilities, streets and infrastructure serving the site, and the need to maintain a balance between residential, commercial, and public land uses.	The proposed project takes into account the existing land uses, public facilities, and environmental characteristics of the site. More information and necessary mitigation measures are provided in Section V.E, Geology, Soils and Seismicity; Section V.F, Hydrology and Water Quality; and Section V.I, Public Services, Utilities and Recreation. The proposed project would contain residential, commercial, and public land uses.
Policy 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.	Refer to Goal LUC-I.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy 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.	Primary ingress and egress to and from the proposed mixed use development would be provided by Shell Boulevard or Civic Center Drive and Balclutha Drive via Foster City Boulevard. Internal streets and roadways would provide access to project buildings. The proposed project is anticipated to have an efficient and safe circulation system, as discussed in Chapter V.B, Transportation and Circulation, 2c(4), Site Access and Circulation. Additionally, Improvement Measure I-TR-1 would further improve site access and circulation. Project site access would also be evaluated for safety considerations prior to Use Permit approval.
Policy 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 Traffic Engineers, and other reliable sources.	Refer to Goal LUC-K.
Policy 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 by one space for every eight bicycle parking spaces provided, per Chapter 17.62 of the Municipal Code.	The site plan does not currently specify the number of bicycle parking spaces that will be provided as part of the proposed project. However, it is anticipated that details pertaining to bicycle parking will be included in the revised site plans provided by the project applicants during the site development and/or use permit process and will conform with City plans and policies.
Policy 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.	The proposed project would be subject to design review at the time of Specific Development Plan approval and prior to issuance of a Use Permit. Also refer to LUC-I and LUC-K.
Housing Element		
Policy H-D-3	*Encourage Housing as Part of New Development Projects.* As opportunities for the redevelopment of property occur, whether financed with public funds or not, evaluate whether the subject site and project could and/or should include multifamily housing units as part of the overall project, including apartments, condominiums, townhouses, or a mix of housing types.	The proposed project includes a 196 market rate for sale senior units, 66 affordable senior units, and 152 assisted and independent living apartments. In addition to the residential senior housing, the project would include up to 70,000 square feet of neighborhood retail and restaurant uses and a 1.3 acres of green space including a new town square.

TABLE IV-1 APPLICABLE GOALS, POLICIES AND PROGRAMS FROM THE CURRENT GENERAL PLAN

Goal or Policy Number	Goal or Policy Text	Project's Relationship to Goal or Policy
Policy H-D-4	*Mixed Use Development.* Encourage mixed residential/ commercial uses on those parcels where a mix is feasible and appropriate.	The proposed project would develop a mix of residential, commercial, and open space uses on the project site.
Policy H-D-5	*Planned Development Process.* Encourage the use of the planned development process to achieve a diversity of housing types and tenure and to provide greater choice for residents and workers in Foster City.	The project site will be rezoned from Public Facilities/Planned Development Combining District (PF/PD) to Commercial Mix/Planned Development/Senior Housing Overlay (CM/PD/SHO). The proposed project offers a variety of senior housing types.
Policy H-E-2	*Private Development of Affordable Housing.* Encourage the provision of affordable housing by the private sector through requiring that a percentage of the units, excluding bonus units, in specified residential projects be affordable (an inclusionary requirement).	Refer to Policy LUC-16.
Parks and Open Space Element		
Goal PC-A	*Provide Sufficient and Diverse Recreational Opportunities.* Provide sufficient and diverse recreational opportunities for all the City of Foster City residents through the development of new recreation facilities as needed, given available funding and support, and the construction of additional park amenities in existing parks and elsewhere in locations where deficiencies have been identified or opportunities occur.	The proposed project would include 1.3 acres of public open space for use by residents and non-residents. To satisfy its remaining parkland obligation pursuant to City Code Chapter 16.36, the project will pay an in-lieu fee for the purchase of additional parkland.
Policy 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.	Refer to Goal PC-A.
Policy PC-16	*Open Space Access for Special Needs Groups.* Design open space to be accessible to people with special needs such as elderly and handicapped persons.	The proposed project would provide open space that is ADA-accessible and also accessible to the development's elderly residents.

Source: City of Foster City General Plan, June 1999, September 2009, February 2010; Urban Planning Partners, Inc., 2013

V. SETTING, IMPACTS AND MITIGATION MEASURES

This chapter contains an analysis of the environmental topics relevant to The 15 Acres project and, as such, constitutes the major portion of this Draft EIR. Sections A through M of this chapter describe the existing setting for each topic relevant to the proposed project, the potential impacts that could result from implementation and buildout of the project, and mitigation measures designed to reduce significant impacts of the project to a less-than-significant level.

The following provides an overview of the scope of the analysis included in this chapter, organization of the sections, and the methods for determining what impacts are significant.

ENVIRONMENTAL TOPICS

The following environmental topics are analyzed in this chapter:

A. Land Use
B. Traffic and Transportation
C. Air Quality
D. Noise
E. Geology, Soils, and Seismicity
F. Hydrology and Water Quality
G. Biological Resources
H. Hazards and Public Safety
I. Public Services, Utilities, and Recreation
J. Aesthetics and Shade and Shadow
K. Wind
L. Global Climate Change
M. Cultural and Paleontological Resources

Topics determined to not be directly relevant to the proposed project are briefly discussed in Chapter VII, Section D, Effects Found Not to be Significant, and include agricultural and forestry resources, mineral resources, and population and housing.

FORMAT OF TOPIC SECTIONS

Each environmental topic section generally includes two main subsections: (1) Setting and (2) Impacts and Mitigation Measures. Identified significant impacts are numbered and shown in bold type with the following abbreviations, and the corresponding mitigation measures are numbered and indented.

LAND:	Land Use
TRANS:	Transportation and Circulation
AIR:	Air Quality
NOISE:	Noise
GEO:	Geology, Soils, and Seismicity
HYD:	Hydrology and Water Quality
BIO:	Biological Resources
HAZ:	Hazards and Public Safety
UTL:	Public Services, Utilities, and Recreation
AES:	Aesthetics and Shade and Shadow
WIND:	Wind
GHG:	Global Climate Change
CULT:	Cultural and Paleontological Resources

The following notations are provided after each identified significant impact and mitigation measure:

LTS	=	Less than Significant
S	=	Significant
SU	=	Significant and Unavoidable

These notations indicate the significance of the impact with and without mitigation.

DETERMINATION OF SIGNFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria have been developed using the CEQA Guidelines and applicable City policies.

[1] Public Resources Code Section 21068.

A. LAND USE

This section describes existing land uses within and in the vicinity of the project site, and evaluates the proposed project's potential land use impacts. General Plan goals, policies, and programs related to land use are discussed in Chapter IV, Public Policy.

1. Setting

The following section describes existing land uses within the project site and surrounding areas. The section begins by discussing the regional and local setting, and then provides more specific information about the project site and vicinity. Land uses within and adjacent to the project site boundaries are generally identified in the aerial photo provided in Figure V.A-1.

a. Regional Setting

The project site is located on the San Francisco Peninsula within Foster City, as shown in Figure III-1. Foster City is located approximately 15 miles southeast of the City of San Francisco and approximately 30 miles northwest of the City of San Jose. The 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. Major transportation corridors in the area include US 101 and SR 92.

b. Local Setting

Foster City is a "Planned Community" constructed and implemented on the basis of an organized program of development. The City was originally designed in the 1960s as a suburban community with a clear community center and an industrial base to support required services. It was constructed on reclaimed marshlands devoted to dairy farming and evaporation ponds. Development of the City has been dictated by the natural, mainly water-oriented constraints of the filled marshlands. The project site is the vacant 15-acre City-owned property adjacent to the Foster City Government Center. The site is bounded by Civic Center Drive to the north, Foster City Boulevard to the east, Shell Boulevard to the west and Balclutha Drive to the south. This site is the last remaining vacant publicly owned site with development potential in the City.

c. Existing Conditions and Land Uses on the Project Site

Currently, the project site is undeveloped. The only improvement on the site is a temporary structure used for miscellaneous storage and occasionally used as a location for community emergency response team training. As discussed in Chapter IV, Public Policy, the existing General Plan designation for the project site is Public and Semi-Public, a designation that is reserved

Source: Urban Planning Partners, 2013

Figure V.A-1
The 15 Acres
Existing Land Use in Project Vicinity

for uses that are generally public serving in nature. Figure IV-1 shows existing General Plan land use designations for the project site and vicinity. The project site is also zoned Public Facilities/Planned Development Combining District (PF/PD) on the Foster City Zoning Map, as shown in Figure IV-2.

d. Land Uses in the Vicinity of the Project Site

A variety of land uses are found in the vicinity of the project site. Primary land uses in the vicinity of the project site include areas designated by the General Plan for Public and Semi-Public, Condominium Residential, Apartment Residential, Townhouse Residential, Town Center, Service Commercial, and Parks and Recreation uses. Land in the vicinity of the project site is zoned Public Facilities, Medium Density Multiple Family Residence, Townhouse Residence, Neighborhood Business, Commercial Automotive, and Open Space and Conservation according to the City's zoning code.

(1) Land Uses to the North

The project site is bordered on the north by Civic Center Drive. Across Civic Center Drive is the Foster City Civic Center complex which includes the Foster City Library, the Fire and Police Department buildings, the City's Community Center, and City Hall. Further north, across East Hillsdale Boulevard, there is a mix of commercial office and retail uses, including the Pilgrim-Triton area which is currently being redeveloped with a mix of retail, office, and residential uses. Approximately one-half mile north of the project site is J. Arthur Younger Freeway/State Route 92, an east-west freeway that runs through Foster City and provides access to San Mateo County from the East Bay.

Library immediately north of site

City Hall north of project site

(2) Land Uses to the East

The project site is bordered to the east by Foster City Boulevard. Land uses across Foster City Boulevard are largely residential, including a mix of condominiums, apartments, townhouses, and single-family houses. Another notable use farther east of the project site is Brewer Island Elementary School.

Condominiums east of site

Condominiums east of site

(3) Land Uses to the South

The North Peninsula Jewish Campus (NPJC)—a cultural center that offers recreational, cultural, and educational programs—is across Balclutha Drive to the south of the project site. Condominiums and rental apartments occupy the area beyond the NPJC campus to south of the project site.

NPJC south of site

Jewish Day School south of site

(4) Land Uses to the West

The project site is bordered by Shell Boulevard on the west. Leo J. Ryan Park and the William E. Walker Recreation Center, which houses the Senior Center, are just across Shell Boulevard.

Recreation Center west of site

Leo J. Ryan Park west of site

2. Impacts and Mitigation Measures

The following section analyzes environmental impacts related to land use that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the land use impacts associated with the proposed project and any necessary mitigation measures that might result. Impacts are divided into separate categories based on their significance according to the following criteria: less-than-significant impacts, which do not require mitigation, and significant impacts, which do require mitigation.

a. Criteria of Significance

The proposed project would have a significant impact if it were to:

- 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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

b. Less-Than-Significant Land Use Impacts

Less-than-significant land use impacts of the proposed project are discussed below.

(1) Divide an Established Community

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad

tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas.

The proposed project would develop the currently vacant land with 414 senior housing units (including the 196 for-sale units, 152 assisted and independent living units, and 66 affordable units for seniors); up to 70,000 square feet of retail/restaurant and office space, and 54,500 square feet of public open space. No new roadways need to be constructed to accommodate the proposed project. Minor modifications to Foster City Boulevard, Civic Center Drive, Shell Boulevard, Balclutha Drive, and the internal street network would occur in connection with the project. Specifically, new driveways would provide access to the site from all of the above streets. These modifications would improve access to and circulation throughout the site. No physical barriers would be developed on the project site that would impede access to and through the site, and no existing access would be permanently removed.

The introduction of residential, commercial, and open space uses on the site would create a mixed use community. Housing on the site would create a constant presence of people, which is expected to improve safety (i.e., actual and perceived safety). The proposed town square and other open space and plaza areas would provide gathering places for the new residential senior population, business occupants, and visitors.

Existing land uses within and in the vicinity of the project site are shown in Figure V.A-1. As previously described, residential, civic, and public uses make up a large part of the area surrounding the project site. Most of these surrounding uses are separated from the project site by roads. The proposed project would introduce residential, retail/restaurant, and public open space uses to the site. The project proposes 18 new buildings, ranging from 25 to 95 feet in height. The buildings would not conflict with existing residential properties located along Foster City Boulevard, as a surface parking lot within the PG&E easement area along Foster City Boulevard would provide a buffer zone, adding to the existing buffer provided by Foster City Boulevard itself.

Although the proposed project would change and increase the intensity of land use in the area, the developed uses would benefit the surrounding area by increasing its activity, continual human presence, and vibrancy. The addition of retail and public open space to the site would also be a positive change as it would draw more community members to the area and thus increase awareness and usage of the existing public services and facilities nearby. The proposed project would not divide the physical arrangement of an established community, but rather would develop the project site to pro-

mote and accommodate a more efficient use of land within an existing city center.

(2) Habitat Conservation Plans

There are no Habitat Conservation Plans or Natural Area Community Plans encompassing the site or vicinity; therefore, no conflicts with these types of plans are anticipated.

c. Significant Land Use Impacts

Construction of the proposed project may conflict with the City's noise standards, which have been adopted for the purpose of avoiding or mitigating environmental effects, as described below and in more detail in Section V.D, Noise. A full description of other applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect is provided in Section IV, Public Policy.

Impact LAND-1: Implementation of the proposed project would require construction activity that would exceed established noise policies designed to avoid/mitigate an environmental effect. (S)

Noise generated by construction activities on the site would cause a substantial temporary increase in noise levels at the library, police, and fire buildings located to the northwest across Civic Center Drive; at the NPJC located to the east across Balclutha Drive from the project site; multi-family residential buildings across Foster City Boulevard; and at the William E. Walker Recreation Center which houses the Senior Center across Shell Boulevard to the southwest of the project site.

A detailed discussion of construction noise impacts is provided in Section V.D, Noise. Even after implementation of Mitigation Measure NOISE-2, also discussed in that section, noise levels would continue to exceed 60 dBA L_{eq} and the ambient by 5 dBA L_{eq} or more over one construction season. As a result, the impact would remain significant and unavoidable as a result of the extended period of time that adjacent receptors would be exposed to construction noise.

Mitigation Measure LAND-1: Implement Mitigation Measure NOISE-1. (SU)

B. TRANSPORTATION AND CIRCULATION

This section describes the existing transportation and circulation system in the vicinity of The 15 Acres Project site, including roadway, bicycle, pedestrian, and transit facilities, and provides an analysis of the potential impacts of the proposed project on this transportation system. The section also considers a variant that would modify Balclutha Drive to be two-way.

1. Setting

This section describes the methods used to conduct the transportation analysis, the existing transportation system in the vicinity of the project site, and applicable transportation-related policies. Existing roadway operations are also summarized.

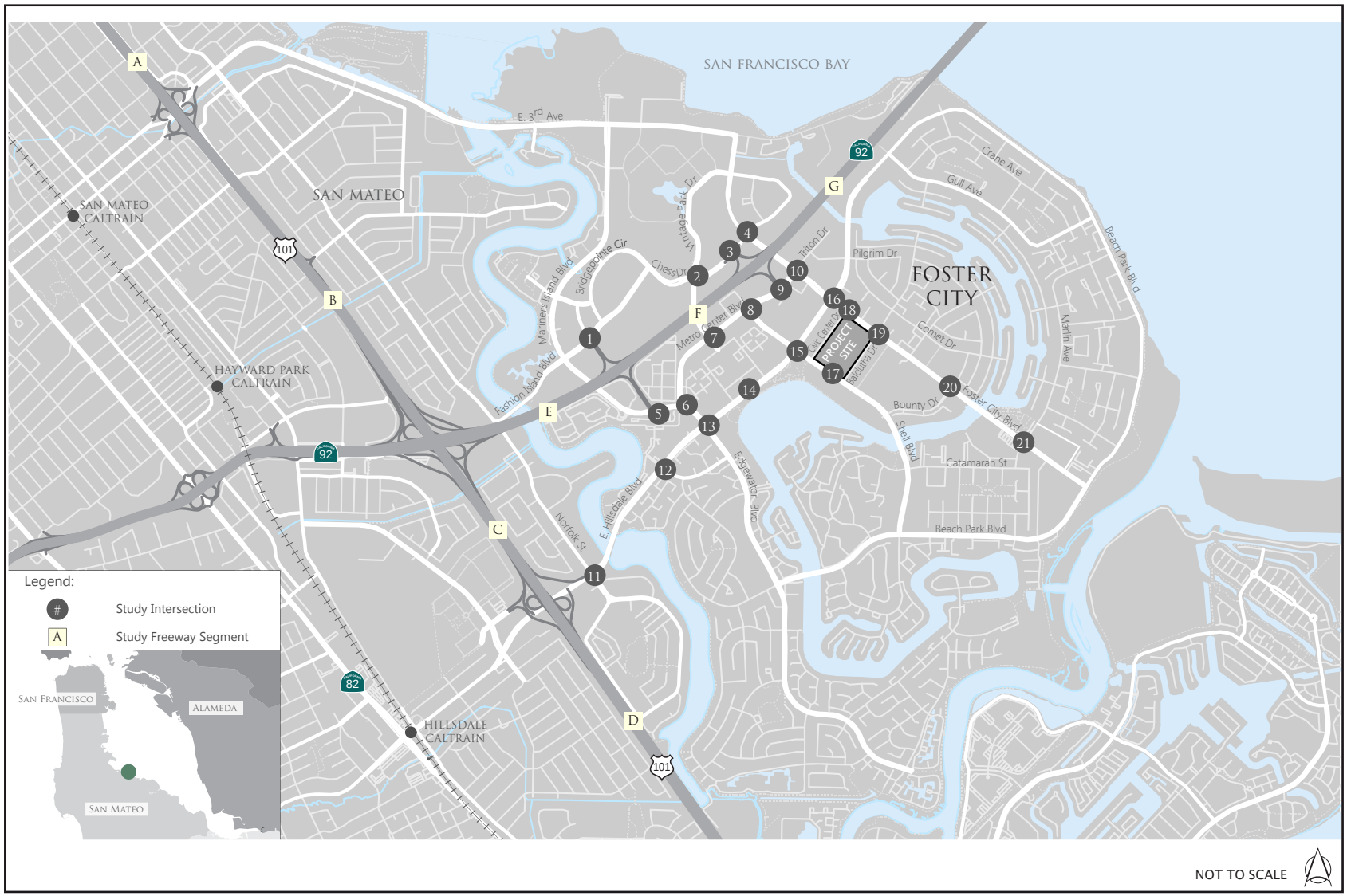
a. Existing Conditions

This section describes the existing transportation system in the study area encompassing the project site. First, the major components of the transportation system are described. Then the existing AM and PM peak-hour traffic volumes and lane configurations for the study intersections are presented, followed by the operational analysis results, including Level of Service (LOS) calculations and VISSIM model results. Existing freeway volumes and operations are also presented.

(1) Roadways and Freeways

Study Locations

This analysis evaluates the impacts of the proposed project on key roadway facilities in the vicinity of the project site, including 21 intersections and 7 freeway segments. Intersections were selected to represent critical local roadway system facilities because of the constrained capacities at these intersections. Freeway segments were selected to represent critical regional roadway system facilities. The study area was selected based on local traffic patterns and engineering judgment and is consistent with previous studies conducted for the project site and Transportation Impact Analyses (TIAs) for other similarly-sized projects in Foster City. The study area is comprehensive; impacts of the proposed project are well-contained within the study area and no measurable impacts are anticipated beyond these borders. The study locations are listed below and shown on Figure V.B-1. All study intersections are controlled by a traffic signal unless noted below. Intersections marked with an asterisk (*) are located in the City of San Mateo.



Source: Fehr & Peers, 2013

Figure V.B-1
The 15 Acres
Study Intersections and Freeway Segments

Study Intersections

1. Baker Way/State Route 92 (SR 92) Westbound Ramps and Fashion Island Boulevard/Bridgepointe Parkway*
2. Vintage Park Drive and Chess Drive
3. SR 92 Westbound Ramps and Chess Drive
4. Foster City Boulevard and Chess Drive
5. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard
6. Edgewater Boulevard and Metro Center Boulevard
7. Vintage Park Drive and Metro Center Boulevard
8. Shell Boulevard and Metro Center Boulevard
9. SR 92 Eastbound Ramps and Metro Center Boulevard
10. Foster City Boulevard and Metro Center Boulevard/Triton Drive
11. Norfolk Street and East Hillsdale Boulevard*
12. Altair Avenue and East Hillsdale Boulevard
13. Edgewater Boulevard and East Hillsdale Boulevard
14. Center Park Lane and East Hillsdale Boulevard
15. Shell Boulevard and East Hillsdale Boulevard
16. Foster City Boulevard and East Hillsdale Boulevard
17. Shell Boulevard and Recreation Center (Future Project Central Street)
18. Foster City Boulevard and Civic Center Drive (Future Project Driveway)
19. Foster City Boulevard and Balclutha Drive (Future Project Driveway)
20. Foster City Boulevard and Bounty Drive
21. Foster City Boulevard and Marlin Avenue (all-way stop controlled)

Freeway Segments

A. US Highway 101 (US 101), north of East Third Avenue
B. US 101, between East Third Avenue and SR 92
C. US 101, between SR 92 and East Hillsdale Boulevard
D. US 101, south of East Hillsdale Boulevard
E. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard
F. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard
G. 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 a.m. (AM peak hour) and 4:00 to 6:00 p.m. (PM peak hour)). The operations of these facilities were evaluated for the following scenarios:

- **Existing:** Existing volumes obtained from counts collected in March, October, and November 2012 and existing roadway/intersection configurations.
- **Existing Plus Project:** Existing traffic volumes plus new traffic from the project.
- **Cumulative:** Projected conditions in 2025, including traffic estimates for approved and probable future development projects. The Cumulative condition includes selected roadway system improvements.
- **Cumulative Plus Project:** Cumulative volumes plus new traffic from the project.

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 to proceed.

All of the study intersections were evaluated using the Traffix software package, which incorporates the methods from Chapters 16 (Signalized Intersections) and 17 (Unsignalized Intersections) of the 2000 Highway Capacity Manual. The Traffix method can evaluate the operations of intersections that function independently. The intersections in the SR 92/Foster City Boulevard interchange complex – namely the intersections at Foster City Boulevard and Chess Drive and at Foster City Boulevard and Metro Center Boulevard, and the SR 92 eastbound and westbound ramps – interact with each other as vehicle queues often extend between 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 (HCM)

The method from Chapter 16 of the Transportation Research Board's 2000 Highway Capacity Manual (HCM) bases signalized intersection operations on the average control delay experienced by motorists traveling through it. 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 V.B-1 summarizes the relationship between average delay per vehicle and LOS for signalized intersections according to the 2000 HCM method.

Signalized Intersections – Simulations

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 V.B-1. A VISSIM simulation model was used for the following four study intersections located within the Foster City Boulevard and SR 92 interchange area:

- INT #3. SR 92 Westbound Ramps and Chess Drive
- INT #4. Foster City Boulevard and Chess Drive
- INT #9. SR 92 Eastbound Ramps and Metro Center Boulevard
- INT #10. Foster City Boulevard and Metro Center Boulevard/Triton Drive

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 this 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 each approach and for the entire intersection (based on the weighted average of the approach delays). The delays and corresponding LOSs for the entire intersection are reported. At two-way stop-controlled intersections the movement with the highest delay and corresponding LOS is reported. Table V.B-2 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 V.B-1 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 and ≤ 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 and ≤ 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 and ≤ 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 and ≤ 80
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80

Source: Transportation Research Board, 2000. Highway Capacity Manual – Special Report 209.

TABLE V.B-2 UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no traffic delays	≤ 10
B	Short traffic delays	> 10 and ≤ 15
C	Average traffic delays	> 15 and ≤ 25
D	Long traffic delays	> 25 and ≤ 35
E	Very long traffic delays	> 35 and ≤ 50
F	Extreme traffic delays with intersection capacity exceeded	> 50

Source: Transportation Research Board, 2000. *Highway Capacity Manual – Special Report 209*.

Freeway Mainline Operations

Freeway mainline operations were evaluated using the 2000 HCM volume-to-capacity ratio method, per C/CAG guidelines. The level of service description and the maximum volume-to-capacity ratio for each LOS designation are presented in Table V.B-3.

TABLE V.B-3 FREEWAY SEGMENT LOS CRITERIA

Level of Service[a]	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.	0.30
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.	0.50
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.	0.71
D	Speeds begin to decline slightly with increasing flows. Freedom to maneuver is more noticeably restricted. Minor incidents create queuing.	0.89
E	Operations at capacity. Vehicle spacing causes little room to maneuver but speeds exceed 50 miles per hour (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

[a] Freeway mainline LOS based on a 65 mph free-flow speed.
Source: Transportation Research Board, 2000. Highway Capacity Manual.

Roadway Network

Regional auto access to the study area is provided by SR 92 and US 101. City streets in the study area are Foster City Boulevard, Shell Boulevard, Balclutha Drive, Civic Center Drive, East Hillsdale Boulevard, Metro Center Boulevard, Chess Drive, and Edgewater Boulevard. Speed limits on study roadways in the study area range from 15 to 25 miles per hour (mph) on local streets (Balclutha Drive and Civic Center Drive) to 35 to 45 mph on all other study roadways. The speed limit is 55 mph on SR 92 and 65 mph on US 101. On-street parking is not allowed within the study area except where noted.

SR 92

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. Average daily volumes on SR 92 through the study

area range from 139,000 vehicles between US 101 and Mariners Island Boulevard to 86,000 vehicles at the San Mateo Bridge.

US 101
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 Third Avenue. Although US 101 does not run directly through Foster City, it provides the primary north-south regional access to the study area via interchanges at SR 92, East Hillsdale Boulevard, and East Third Avenue in the City of San Mateo. Average daily traffic volumes on US 101 through the study area range from 225,000 vehicles at East Hillsdale Avenue to 250,000 vehicles north of SR 92.

Foster City Boulevard
Foster City Boulevard is a four- to six-lane arterial that runs generally in a north-south direction along the eastern edge of the site. It extends from East Third Avenue in the north, across SR 92, to Beach Park Boulevard. On-street parking is allowed in the study area along northbound Foster City Boulevard between Bounty Drive and approximately 450 feet south of East Hillsdale Boulevard. Primary vehicular access to the project site from Foster City Boulevard is provided at the signalized intersection at Balclutha Drive. Right-turn in and out vehicular access is provided at the intersection of Civic Center Drive.

Shell Boulevard
Shell Boulevard is a four-lane arterial that runs generally in a north-south direction along the western edge of the site. It extends southward from Metro Center Boulevard to Beach Park 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. Primary access to the project site from Shell Boulevard is provided at the signalized intersection at Recreation Drive. Right-turn in and out access is provided at the intersection of Civic Center Drive and right-turn out access is provided at Balclutha.

Balclutha Drive
Balclutha Drive is an east-west local street that runs along the southern edge of the site and separates the project site from the NPJC and Wornick Jewish Day School. Balclutha Drive provides two-way access to Foster City Boulevard but becomes one-way in the westbound direction just to the east of the NPJC parking lot and roundabout. The one-way section of Balclutha Drive includes

special paving and a raised pedestrian crossing in between the NPJC and Wornick Jewish Day School. On-street parking is provided along Balclutha Drive between the roundabout and Shell Boulevard. The on-street parking on the south side of the street near Shell Boulevard is currently restricted to 15-minute parking during student drop-off and pick-up times for the Wornick Jewish Day School. While the project as proposed would retain the one-way orientation of Balclutha Drive west of Foster City Boulevard, the potential to convert this segment for two-way traffic is discussed below in Section d, Planning Related Non-CEQA Issues.

Civic Center Drive
Civic Center Drive is an east-west local street that runs along the northern edge of the site and separates the project site from the existing Civic Center. Civic Center Drive provides two-way access between Foster City Boulevard and Shell Boulevard. On-street parking is prohibited along the length of Civic Center Drive.

East Hillsdale Boulevard
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.

Metro Center Boulevard
Metro Center Boulevard is a four-lane, east-west arterial 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, i.e., a ramp that curves to connect to a parallel or diagonal street or frontage road, just west of Foster City Boulevard.

Chess Drive
Chess Drive is an arterial that 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.

Edgewater Boulevard
Edgewater Boulevard is a four-lane divided arterial that extends from Baffin Street in the south to SR 92, where it becomes Mariners Island Boulevard in the City of San Mateo. Access to eastbound SR 92 is provided at the intersection of the Mariners Island Boulevard/Edgewater Boulevard/SR 92

ramps. On-street parking is provided along most of Edgewater Boulevard between East Hillsdale Boulevard and Beach Park Boulevard.

Intersection Traffic Volumes and Lane Configurations

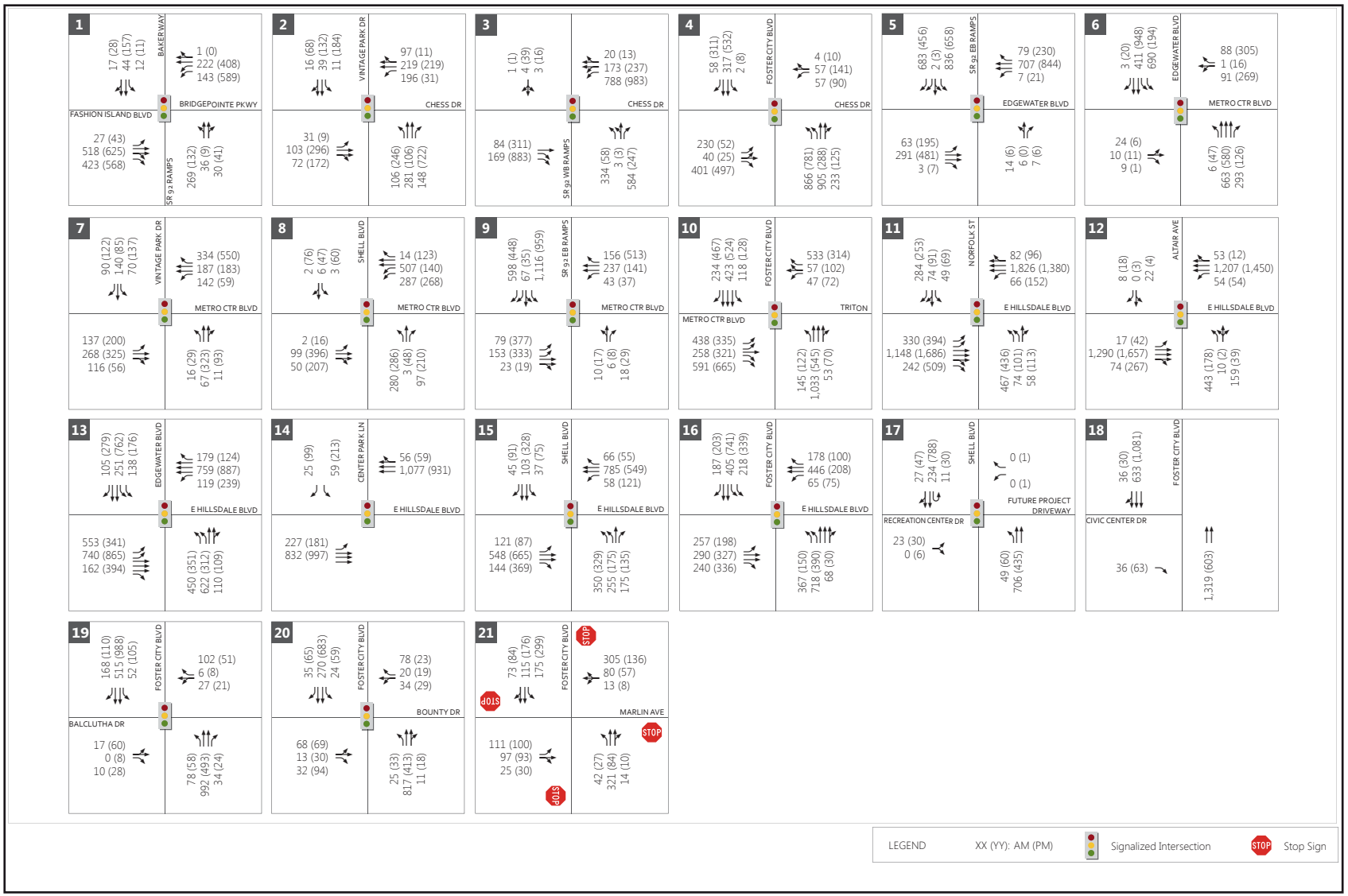
Intersection turning movement counts conducted during the morning and evening peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) in March 2012 for the *Gilead Sciences Integrated Corporate Campus Master Plan Transportation Impact Analysis Report*[1] included 16 of the 21 study intersections, and were used to determine the existing traffic conditions. Additional counts were collected at four of the study intersections in October 2012 by TJKM Transportation Consultants as part of a traffic signal timing study. New intersection turning movement counts were collected at the remaining study intersection during the morning and evening peak periods in November 2012. All counts were conducted on non-holiday weekdays when local area schools were in normal session. The traffic counts are shown in Appendix B.

Some minor adjustments were made to the peak-hour volumes at the Foster City Boulevard/SR 92 interchange intersections so that they balance between intersections for the simulation analysis described below. This resulted in turning movement volumes that were either the same as the counts or slightly higher. For example, 23 vehicles were added to the eastbound through movement at the SR 92 Westbound Ramps and Chess Drive intersection during the PM peak hour. This balanced the eastbound traffic volumes along Chess Drive between the SR 92 Westbound Ramps and Foster City Boulevard. Therefore, the resulting intersection volumes used in the analysis are slightly more conservative than the actual roadway counts. Intersection lane configurations and traffic control devices (traffic signals or stop signs) were observed during field visits. The AM and PM peak-hour intersection turning movement volumes, lane configurations, and traffic control devices are presented on Figure V.B-2.

Intersection Operations

The intersection LOS analysis results are presented in Table V.B-4. The LOS analysis results for the four intersections near the SR 92/Foster City Boulevard interchange are based on simulation results from the VISSIM microsimulation model (Intersections 3, 4, 9, and 10). VISSIM captures the effect of vehicles queuing between intersections and the effect the queue spillback has on upstream intersections. Therefore, the VISSIM results for these four intersections are more accurate than the HCM method for isolated intersections, and also tend to be more cautious (i.e., congestion levels

[1] Fehr & Peers, December 2012.



Source: Fehr & Peers, 2013

Figure V.B-2
The 15 Acres
Existing Intersection Peak-Hour Volumes, Lane Configurations, and Traffic Control Devices

TABLE V.B-4 EXISTING INTERSECTION LOS RESULTS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay[a]	LOS	Delay[a]	LOS
1. Bridgepointe Parkway and SR 92 WB Ramps[b]	Signal	17	B	20	C
2. Vintage Park Drive and Chess Drive	Signal	25	C	35	D
3. SR 92 Westbound Ramps and Chess Drive[c]	Signal	11	B	21	C
4. Foster City Boulevard and Chess Drive[c]	Signal	17	B	18	B
5. SR 92 Eastbound Ramps and Edgewater Boulevard/ Mariners Island Boulevard	Signal	16	B	18	B
6. Edgewater Boulevard and Metro Center Boulevard	Signal	16	B	17	B
7. Vintage Park Drive and Metro Center Boulevard	Signal	20	C	21	C
8. Shell Boulevard and Metro Center Boulevard	Signal	18	B	24	C
9. SR 92 Eastbound Ramps and Metro Center Boulevard[c]	Signal	15	B	19	B
10. Foster City Boulevard and Metro Center Boulevard/ Triton Drive[c]	Signal	22	C	18	B
11. Norfolk Street and East Hillsdale Boulevard[b]	Signal	25	C	30	C
12. Altair Avenue and East Hillsdale Boulevard	Signal	17	B	<10	A
13. Edgewater Boulevard and East Hillsdale Boulevard	Signal	26	C	31	C
14. Center Park Lane and East Hillsdale Boulevard	Signal	<10	A	12	B
15. Shell Boulevard and East Hillsdale Boulevard	Signal	20	C	22	C
16. Foster City Boulevard and East Hillsdale Boulevard	Signal	26	C	22	C
17. Shell Boulevard and Recreation Center	Signal	<10	A	<10	A
18. Foster City Boulevard and Civic Center Drive	SSS	10	B	12	B
19. Foster City Boulevard and Balclutha Drive	Signal	12	B	12	B
20. Foster City Boulevard and Bounty Drive	Signal	12	B	13	B
21. Foster City Boulevard and Marlin Avenue	AWS	23	C	13	B

[a] For signalized and all-way stop (AWS) controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop (SSS) controlled intersection, the delay shown is the worst-operating approach delay.
[b] Intersection in San Mateo.
[c] Intersection analyzed using the VISSIM microsimulation model.
SSS = Side-street stop.
AWS = All-way stop.
Source: Fehr & Peers, February 2013.

would tend to be over-estimated rather than under-estimated). The remaining study intersections were analyzed as isolated intersections based on the HCM method using the Traffix analysis software.

The LOS results presented in Table V.B-4 show that all of the study intersections currently operate at an acceptable LOS D or better (based on the locally accepted significance criteria, as shown in Table V.B-5). The LOS

TABLE V.B-5 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[a]	55 seconds/vehicle[b]
City of Foster City	Unsignalized Intersections	LOS D	35 seconds/vehicle[b]
City of San Mateo	Signalized Intersections	Mid-Range LOS D	45 seconds/vehicle[b]
San Mateo C/CAG	Freeway Segments	LOS E[c]	V/C = 1.00

[a] The Foster City General Plan Land Use and Circulation Policy LUC-50 states that it will be 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.

[b] Based on 2000 Highway Capacity Manual (HCM).

[c] LOS F is considered acceptable on US 101 north of SR 92 to Peninsula Avenue due to existing congestion levels.

Sources: City of Foster City, 1993. General Plan; City of San Mateo, 2010. General Plan.

calculations for the isolated intersection analysis are included in Appendix B. The LOS calculations for the VISSIM simulation model are included in Appendix B.

Freeway Volumes and Operations

Manual freeway counts were conducted at five freeway segments (Segments A, B, C, D, and G as shown in Figure V.B-1) during the morning and evening peak periods in March and May 2012. Volumes on the other segments (Segments E and F) could not be counted and were developed by adding the on-ramp volumes and subtracting the off-ramp volumes. Based on California Department of Transportation (Caltrans) data, 3.5 percent of the traffic on US 101 and 4.5 percent of the traffic on SR 92 consist of trucks and other heavy vehicles. The trucks were converted to Passenger Car Equivalents (PCEs) and the resulting traffic volumes were used in the freeway segment level of service analysis. The analysis results are presented in Table V.B-6. The freeway operations vary depending on the peak hour, direction, and segment, ranging from LOS B to LOS E. No segments on SR 92 or US 101 currently exceed their Congestion Management Program (CMP) LOS threshold. Existing average annual daily traffic (AADT) volumes for the study freeway segments were also collected from the 2010 Traffic Volumes on the California State Highway System and are shown in Table E-1 in Appendix B.

(2) Transit System

Transit service adjacent the project site 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 (Alliance) operates a shuttle route connecting to

TABLE V.B-6 EXISTING FREEWAY SEGMENT LOS RESULTS

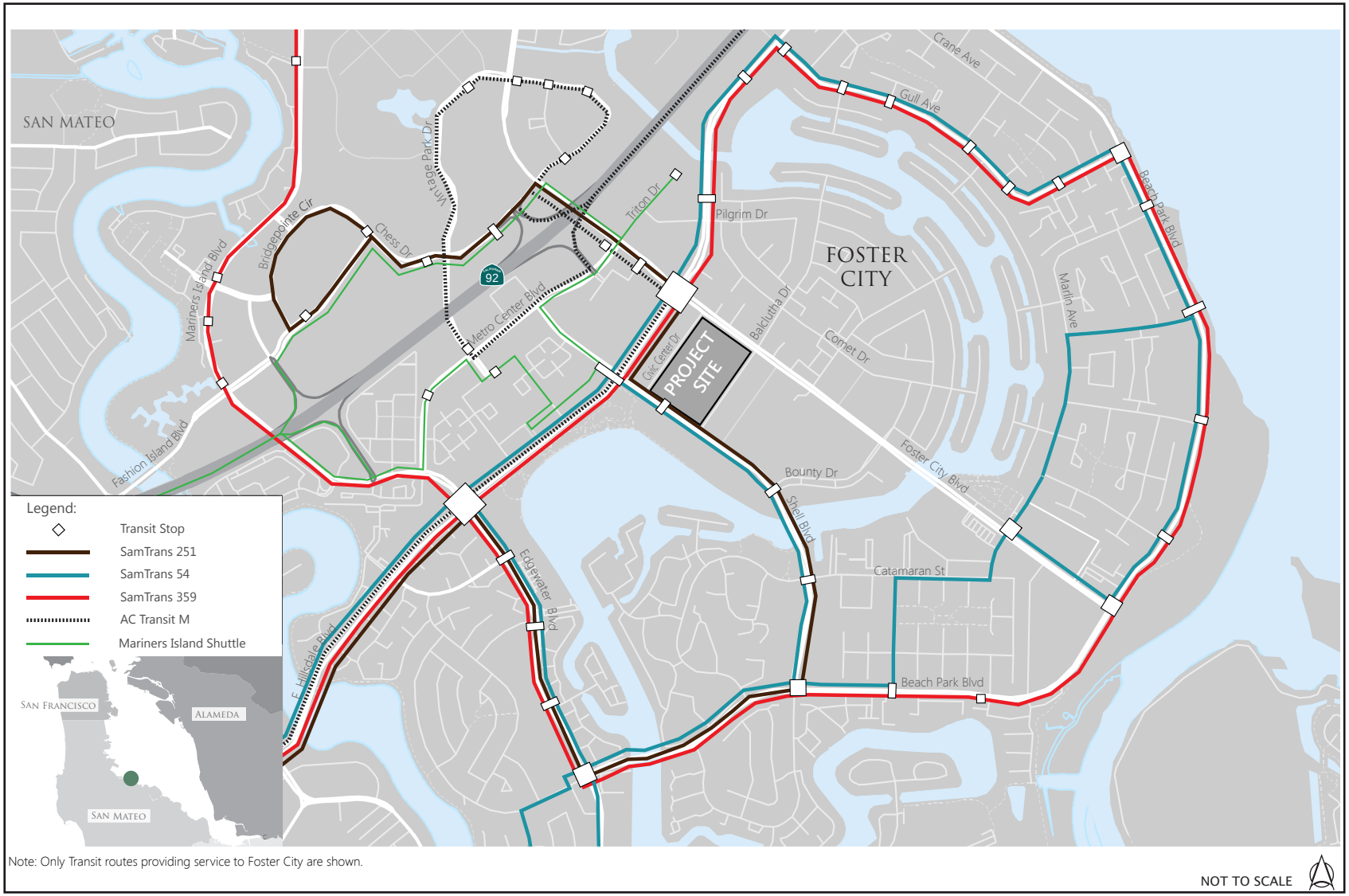
Intersection	CMP LOS Standard	Peak Hour	Direction	Volume[a]	LOS
A. US 101, north of East Third Avenue b	F	AM	Northbound	9,454	E
			Southbound	8,403	D
		PM	Northbound	8,845	D
			Southbound	8,391	D
B. US 101, between East Third Avenue and SR 92	F	AM	Northbound	9,049	D
			Southbound	8,608	D
		PM	Northbound	9,258	E
			Southbound	8,604	D
C. US 101, north of East Hillsdale Boulevard	E	AM	Northbound	8,166	D
			Southbound	7,344	C
		PM	Northbound	8,182	D
			Southbound	7,487	D
D. US 101, south of East Hillsdale Boulevard	E	AM	Northbound	7,592	D
			Southbound	9,013	D
		PM	Northbound	8,951	D
			Southbound	8,759	D
E. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard	E	AM	Eastbound	5,634	D
			Westbound	5,930	D
		PM	Eastbound	6,400	E
			Westbound	5,658	C
F. SR 92, Mariners Island Boulevard/ Edgewater Boulevard and Foster City Boulevard	E	AM	Eastbound	4,199	C
			Westbound	5,643	C
		PM	Eastbound	5,676	C
			Westbound	4,475	C
G. SR 92, east of Foster City Boulevard	E	AM	Eastbound	2,590	B
			Westbound	5,601	D
		PM	Eastbound	5,108	D
			Westbound	2,806	B

[a] Volumes presented are passenger-car equivalents.

[b] An auxiliary lane in both directions has been completed on this freeway segment.

Source: Fehr & Peers, February 2013.

Caltrain. Figure V.B-3 illustrates the transit routes in the vicinity of the project site. Descriptions of these routes, the hours of operation, and their service headways (time between arrivals) are described below and summarized in Table V.B-7.



Source: Fehr & Peers, 2013

Figure V.B-3
The 15 Acres
Existing Transit Routes

TABLE V.B-7 EXISTING TRANSIT SERVICE

Service Provider	Name/Description	Hours of Operation/Headway
SamTrans	251 – Caltrain Connection	5:41 a.m. – 8:19 p.m. Weekdays (60 minutes) 8:10 a.m. – 7:14 p.m. Saturdays (60 minutes)
	359 – BART/Caltrain Connection	5:28 a.m. – 8:36 a.m. Weekdays (30 minutes) 4:57 p.m. – 8:17 p.m. Weekdays (30 minutes)
	54 – School Service	7:41 a.m. – 8:07 a.m. Weekdays (one bus) 1:48 p.m. – 3:39 p.m. Weekdays (80 minutes)
AC Transit	M – Transbay Service	5:30 a.m. – 8:17 p.m. Weekdays (30 minutes)
Caltrain Shuttle	Mariners Island Area (PCA) Shuttle	6:56 a.m. – 10:17 a.m. Weekday (45 minutes) 3:08 p.m. – 6:33 p.m. Weekday (45 minutes)

Source: 511 SF Bay at 511.org, and the Peninsula Traffic Congestion Relief Alliance at www.commute.org.

SamTrans

SamTrans operates Routes 251, 359, and 54 near the project site. Route 251 provides a connection between the Hillsdale Shopping Center and Hillsdale Caltrain station in San Mateo to the Foster City Civic Center and the Bridgepointe Shopping Center. The nearest Route 251 stop to the project site is located on Shell Boulevard at Civic Center Drive. Route 359 provides service from the east Foster City area to BART and Caltrain connections at the Millbrae Intermodal Station (serving BART and Caltrain) during weekday commute hours. The nearest Route 359 stop to the project site is located on East Hillsdale Boulevard between Shell Boulevard and Foster City Boulevard. Route 54 serves the weekday morning and afternoon school commute to/from Hillsdale High School in San Mateo and Bowditch Middle School. The nearest stops on Route 54 to the project site are located on Shell Boulevard at Civic Center Drive.

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 East Hillsdale Boulevard in Foster City. Line M stops near the project site along East Hillsdale Boulevard between Foster City Boulevard and Shell Boulevard.

Caltrain Shuttle

The Alliance operates one shuttle bus in the project vicinity during weekday commute hours: the Mariners Island (PCA) Area Shuttle. The Mariners' Island Area Shuttle provides service between the Hillsdale Caltrain Station and businesses along Chess Drive, Foster City Boulevard, East Hillsdale Boulevard, and Metro Center Boulevard. The Mariners Island Area Shuttle stops at East Hillsdale Boulevard and Shell Boulevard adjacent to the project site.

(3) Bicycle System

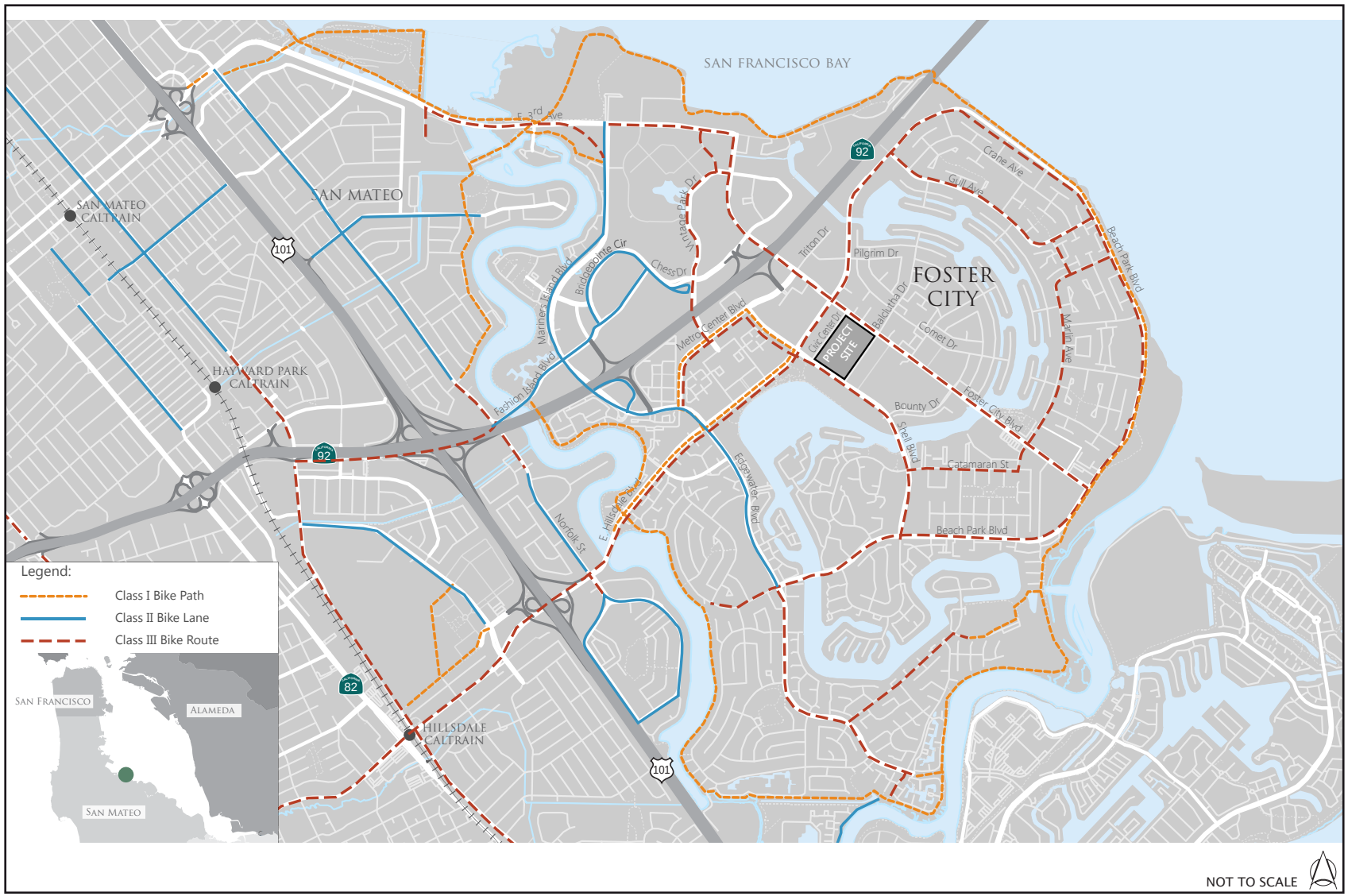
Bicycle facilities include Class I bike paths, Class II bike lanes, and Class III bike routes[2]. Class I bike paths are paved pathways that are separated from roadways by space or a physical barrier. They can be multi-use paths that are also used by pedestrians. Class II bike lanes are lanes on the 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.

The bicycle facilities in Foster City are shown on Figure V.B-4. Class III bike routes are located adjacent to the project site on Foster City Boulevard, Shell Boulevard, and East Hillsdale Boulevard. A Class I bicycle path is provided near the project site along the north side of East Hillsdale Boulevard between Promontory Point Lane (on the eastern edge of Foster City) and Shell Boulevard, on the west side of Shell Boulevard between East Hillsdale Boulevard and Metro Center Boulevard, and on the south side of Metro Center Boulevard between Shell Boulevard and Mariners Island Boulevard. This Class I pathway connects to the Class II on-street striped bike lanes on Edgewater Boulevard and the Class I bicycle path that circles Foster City along the San Francisco Bay shoreline. Bicycle access to the project site from the Hillsdale Caltrain station is provided via the Class III bicycle route along East Hillsdale Boulevard.

(4) Pedestrian Facilities

Pedestrian facilities include sidewalks, marked and enhanced crosswalks, curb ramps, and pedestrian scale lighting. Sidewalks are provided along both sides of all streets within the immediate vicinity of the project site with the exception of Civic Center Drive which does not have a sidewalk on the north side of the street. Marked crosswalks, curb ramps, and pedestrian signals with pedestrian-activated push buttons are provided at all signalized intersections within the immediate vicinity of the project site. Medians are often present on the wide boulevards (i.e. Foster City Boulevard, Shell

[2] California Department of Transportation, *Highway Design Manual*.



Source: Fehr & Peers, 2013

Figure V.B-4
The 15 Acres
Existing Bicycle Facilities

Boulevard, and East Hillsdale Boulevard), but median curb cuts are rarely provided for pedestrian refuge.

Signalized pedestrian crossings are provided at Foster City Boulevard and Balclutha Drive, Foster City Boulevard and East Hillsdale Boulevard, Shell Boulevard and East Hillsdale Boulevard, and at Shell Boulevard and the Recreation Center access road. A raised pedestrian crossing with special paving, flush curbs, and bollards is provided across Balclutha Drive in between the NPJC and Wornick Jewish Day School. No crosswalks are provided along Civic Center Drive directly north of the project site.

b. Regulatory Setting

Applicable State and local laws, regulations, and orders that pertain to project-related transportation issues are presented below.

(1) California Department of Transportation

Caltrans 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 agency planning documents (such as EIRs) 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. In addition, Caltrans states that for existing State highway facilities operating at less than the target LOS, the existing LOS should be maintained.

(2) 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.

(3) 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 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

(4) 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.

(5) City of Foster City General Plan

The Foster City General Plan currently in place was adopted in 1993. The applicable circulation goals, policies, and programs related to transportation impacts are:

Goals

Goal LUC-F Provide Adequate Services and Facilities. Ensure that new and existing developments can be adequately served by municipal services and facilities.

Goal 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.

Goal 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.

Goal LUC-K Provide Adequate Parking. Ensure that adequate off-street parking is incorporated into modified projects and designed for safe and effective circulation.

Policies

Policy 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:

- Traffic Systems Management (TSM).
- Street maintenance.
- Capital Improvement Program and coordination with federal, State, county, and district funding programs for street and other transportation improvements.
- Developer payment of pro rata fair share of traffic improvement costs for new developments.

Policy LUC-51 Improvements to Existing Streets. The City will maintain and improve the existing system of major streets and collector streets, including:

- East Hillsdale Boulevard, Edgewater Boulevard, Foster City Boulevard, Beach Park Boulevard, East Third Avenue (within the City limits), Metro Center Boulevard, Shell Boulevard, Chess Drive, and Vintage Park shall be maintained as arterial (major) streets.
- Collector streets, currently shown on Map GP-5, Street Network Map, shall be maintained as such.

Policy 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.

Policy LUC-54 Coordination with SamTrans. The City shall work with SamTrans in defining new routes and improving the public transit and transportation system.

Policy 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.

Policy 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.

Policy 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.

Policy 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.

Policy 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.

Policy LUC-61 Capital Improvement Program. 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.

Policy 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

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.

(6) City of San Mateo 2030 General Plan

The City of San Mateo completed the 2030 General Plan Update in 2010. The applicable circulation goals and policies 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

Policy 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.

Policy 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:

- 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
- 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
- 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.

2. Impacts and Mitigation Measures

This section evaluates the transportation-related impacts of the proposed project. Traffic impacts are evaluated under existing and cumulative conditions.

a. Criteria of Significance

The criteria for evaluating the significance of a project's environmental impacts are based on the CEQA Guidelines and applicable standards recognized by Foster City, San Mateo, and C/CAG, including the applicable LOS criteria imposed by C/CAG described on page 91. For this analysis, transportation impacts are considered significant if the 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, 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;
- 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; or
- 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 project-level and cumulative impacts at study intersections and freeway segments, the following specific thresholds were used.

The proposed project would create a significant traffic impact if, as a result of the addition of project traffic, the project would:

- Cause an intersection operating acceptably without the project 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 without the project (similar to C/CAG requirements);
- Cause a freeway segment to exceed its CMP LOS standard; or
- Increase the volume of a freeway segment that exceeds the CMP LOS standard without the project by 1 percent or more of the freeway segment's capacity.

Transit impacts would be considered significant if the proposed project would:

- Disrupt existing transit services or facilities. This includes disruptions caused by proposed driveways on streets used by transit, impacts to transit stops/shelters, and impacts to transit operations from traffic improvements proposed or resulting from the project;
- 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 proposed project would:

- Disrupt existing or planned bicycle or pedestrian facilities; or
- Create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, or policy standards.

A site access or internal circulation impact would be considered significant if the proposed project would result in any of the following:

- Designs for on-site circulation, access, and parking areas that fail to meet industry standard design guidelines;
- Hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or
- Inadequate emergency access.

b. Traffic

(1) Project Assumptions

Trip Generation Estimates

Fehr & Peers developed trip generation estimates by applying trip generation rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Handbook (8th Edition) to the proposed project land uses shown in Table V.B-8.

Internalized trip reductions were taken into account for trips between uses within the mixed-use development, 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 considered new trips. (Internalization reductions are applied to both the inbound and outbound ends of the trip and therefore are applied twice.) The reduction amounts were derived from ITE's Trip Generation Handbook, 2nd Edition, 2004.

TABLE V.B-8 PROPOSED PROJECT LAND USES

	Type	ITE Land Use Category	Amount[a]
Residential	Market Rate For Sale Senior	ITE 252: Senior Adult Housing – Attached[b]	196 d.u.
	Affordable Senior (one-bedroom)		66 d.u.
	Assisted & Independent Living Apartments	ITE 253: Congregate Care Facility[b]	152 d.u.[c]
		Residential Subtotal	*414 d.u.*
Office	Office	ITE 710 – General Office	30,000 s.f.
Retail/ Restaurant	Neighborhood Retail	ITE 820 – Shopping Center	16,400 s.f.
	High-Turnover Restaurant	ITE 932 – High-Turnover Restaurant	12,000 s.f.
	Quality Restaurant	ITE 931 – Quality Restaurant	11,600 s.f.
		Retail/Restaurant Subtotal	*40,000 s.f*
Public Green Space[d]	Town Square	N/A	22,000 s.f.
	Shell Blvd. Setback	N/A	17,500 s.f.
	Central Promenade Linear Park	N/A	15,000 s.f.
		Total Green Space	*54,500 s.f.*

[a] Amount of space expressed in dwelling units (d.u.) or square feet (s.f.).
[b] Trip Generation Handbook, Institute of Transportation Engineers (ITE), 8th Edition. *Senior Adult Housing—Attached* includes attached independent and active retirement communities with limited social and recreational services and lack central dining and on-site medical facilities. A *Congregate Care Facility* (CCF) is an independent living development that provides centralized amenities such as dining, housekeeping, transportation, and organized social/recreation activities. Limited medical services may be provided on-site. *Assisted Living* is an alternative to CCF and typically bridges the gap between independent living and nursing home through separate living quarters but extensive on-site services for mentally or physically limited persons. The PM peak hour trip generation rate for CCF facilities is slightly higher than the rate for assisted living units. Therefore CCF rates were selected for this analysis.
[c] Includes 16 memory care beds.
[d] Public green space is assumed to not generate peak hour trips as it will be mostly local serving uses. Occasional community events in this space would not occur on a regular basis during peak hours.
Source: Fehr & Peers, February 2013.

Because the pass-by reduction rates indicated by the Trip Generation Handbook are relatively high for similarly-sized retail establishments (e.g., greater than 40 percent), to be conservative, a maximum PM pass-by percentage of 25 percent was used. Pass-by reduction rates of 20 percent and 10 percent were used for daily and AM peak hour trips, respectively.

Rates used for the trip generation estimates are summarized in Table E-1 in the appendix, along with the corresponding ITE land use category. Trip generation estimates for the proposed project are presented in Table V.B-9. The proposed project is estimated to generate 4,233 daily trips, 238 AM peak hour trips, and 321 PM peak hour vehicle trips.

TABLE V.B-9 TRIP GENERATION SUMMARY – PROPOSED PROJECT

	Land Use		Daily Trips[b]	AM Peak Hour Trips			PM Peak Hour Trips		
	Type	Amount[a]		In	Out	Total	In	Out	Total
Residential	Senior Adult Housing – Attached	262 d.u.	912	12	22	34	25	17	42
	Residential/ Retail Trip Internalization	--	*-149*	*0*	*0*	*0*	*-4*	*-5*	*-9*
	Congregate Care Facility	152 d.u.	307	5	4	9	14	12	26
	Residential Subtotal	414 d.u.	1,070	17	26	43	35	24	59
Office	General Office	30,000 s.f.	330	41	6	47	8	37	45
	Office/Retail Internalization	--	*-98*	*0*	*0*	*0*	*-2*	*-3*	*-5*
	Office Subtotal	30,000 s.f.	232	41	6	47	6	34	40
Retail/ Restaurant	Neighborhood Retail	16,400 s.f.	700	10	6	16	30	31	61
	High-Turnover Restaurant	12,000 s.f.	1,526	72	66	138	79	55	134
	Quality Restaurant	11,600 s.f.	1,043	5	4	9	58	29	87
	Retail/ Residential Trip Internalization Reduction	--	*-149*	*0*	*0*	*0*	*-5*	*-4*	*-9*
	Retail/Office Trip Internalization Reduction	--	*-98*	*0*	*0*	*0*	*-3*	*-2*	*-5*
	Retail Pass-By (Apply to Retail and High-Turnover trips)	--	*-91*	*-8*	*-8*	*-15*	*-23*	*-23*	*-46*
	Retail/Restaurant Subtotal	40,000 s.f.	2,931	79	69	148	136	86	222
		Total	*4,233*	*137*	*101*	*238*	*177*	*144*	*321*

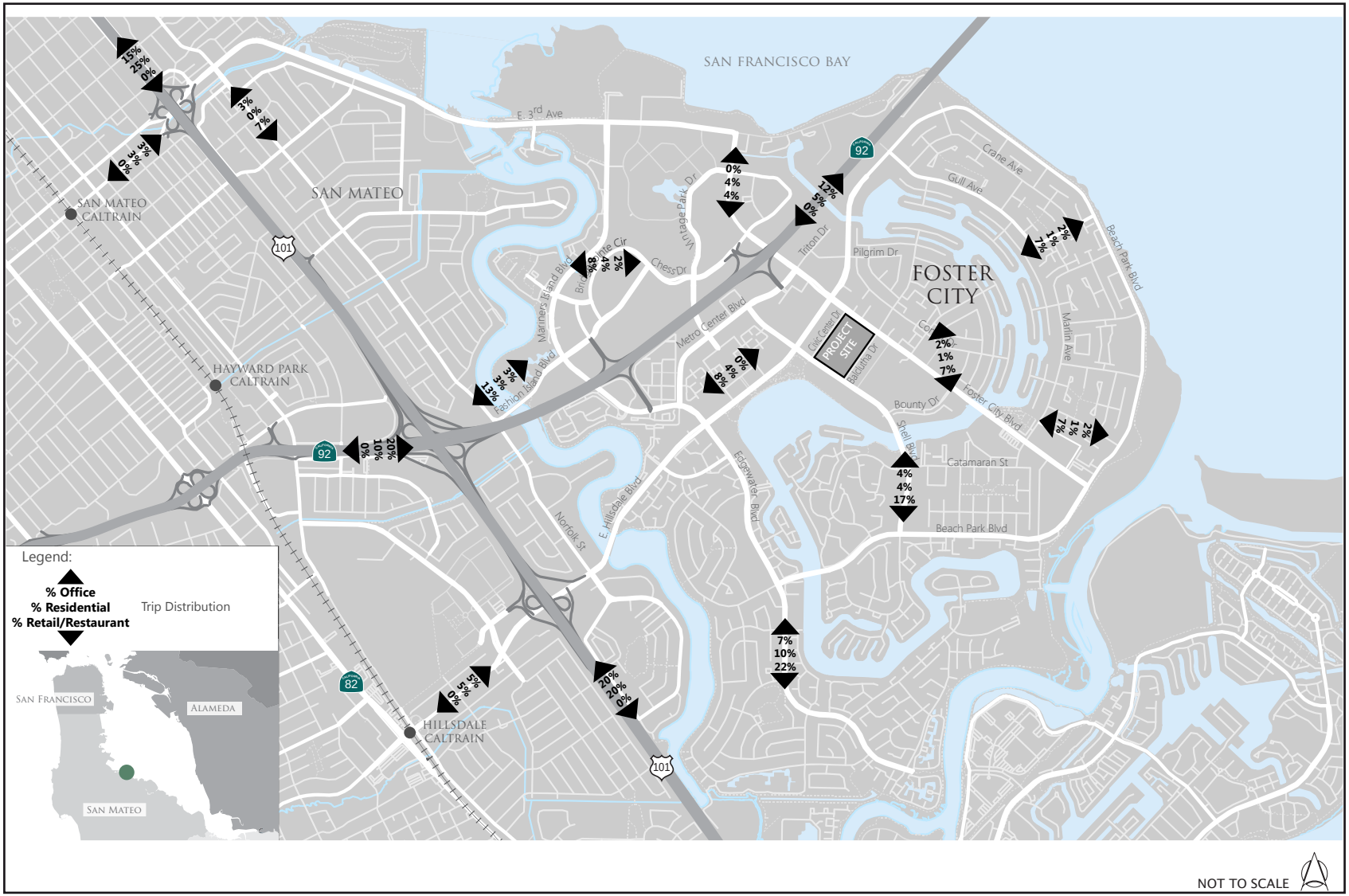
[a] Amount of space expressed in dwelling units (d.u.) or square feet (s.f.).

[b] The trip generation rates used for land uses are shown in Appendix B.

Source: Fehr & Peers, February 2013.

Trip Distribution

Trip distribution refers to the directions the trips generated by the project would use to approach and depart the site and the percentage of traffic using each direction. The geographic distribution and trip percentages are presented on Figure V.B-5.



Source: Fehr & Peers, 2013

Figure V.B-5
The 15 Acres
Trip Distribution

Trip Assignment

Trips generated by the proposed project were assigned to the roadway system based on the trip distribution patterns shown on Figure V.B-5. The trip assignments used in the evaluation of the proposed project are presented on Figure V.B-6.

(1) Existing Plus Project Conditions

This chapter presents the results of the intersection and freeway LOS analysis for Existing Plus Project Conditions. Existing conditions form the baseline against which project-related impacts are evaluated.

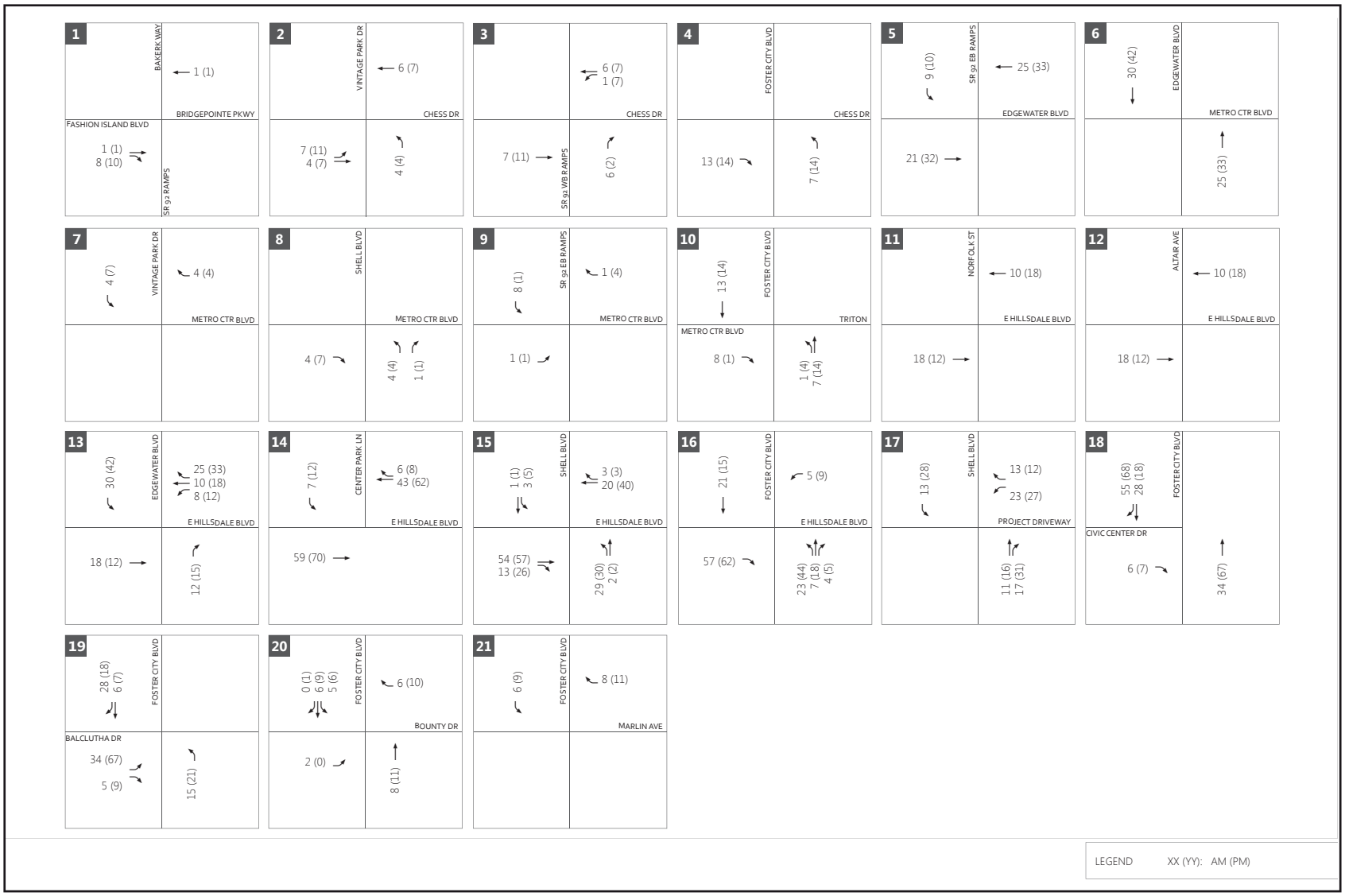
Intersection Operations

Existing intersection volumes plus new vehicle trips due to the proposed project are shown on Figure V.B-7. The LOS results presented in Table V.B-10 show that all of the study intersections would operate at an acceptable LOS D or better with the proposed project. The addition of new vehicle trips due to the project is expected to increase vehicle delay at study intersections directly adjacent to the project site and on roadways such as East Third Avenue and Chess Drive that serve as key connections to US 101 and SR 92. However, these increases in delay would not be considered significant because they would not cause the study intersections to exceed acceptable LOS thresholds. As a result, the project's impact on intersection operations under the existing plus project scenario would be less than significant.

A few of the intersections (such as SR 92 Westbound Ramps and Chess Drive or SR 92 Eastbound Ramps and Metro Center Boulevard) show a reduction in average delay with the addition of project traffic, which seems counter-intuitive. The average delay values in the LOS table are weighted averages. Weighted average delays will be reduced when traffic is added to a movement with a low delay. Conversely, relatively small volume increases to movements with high delays can substantially increase the weighted average delay.

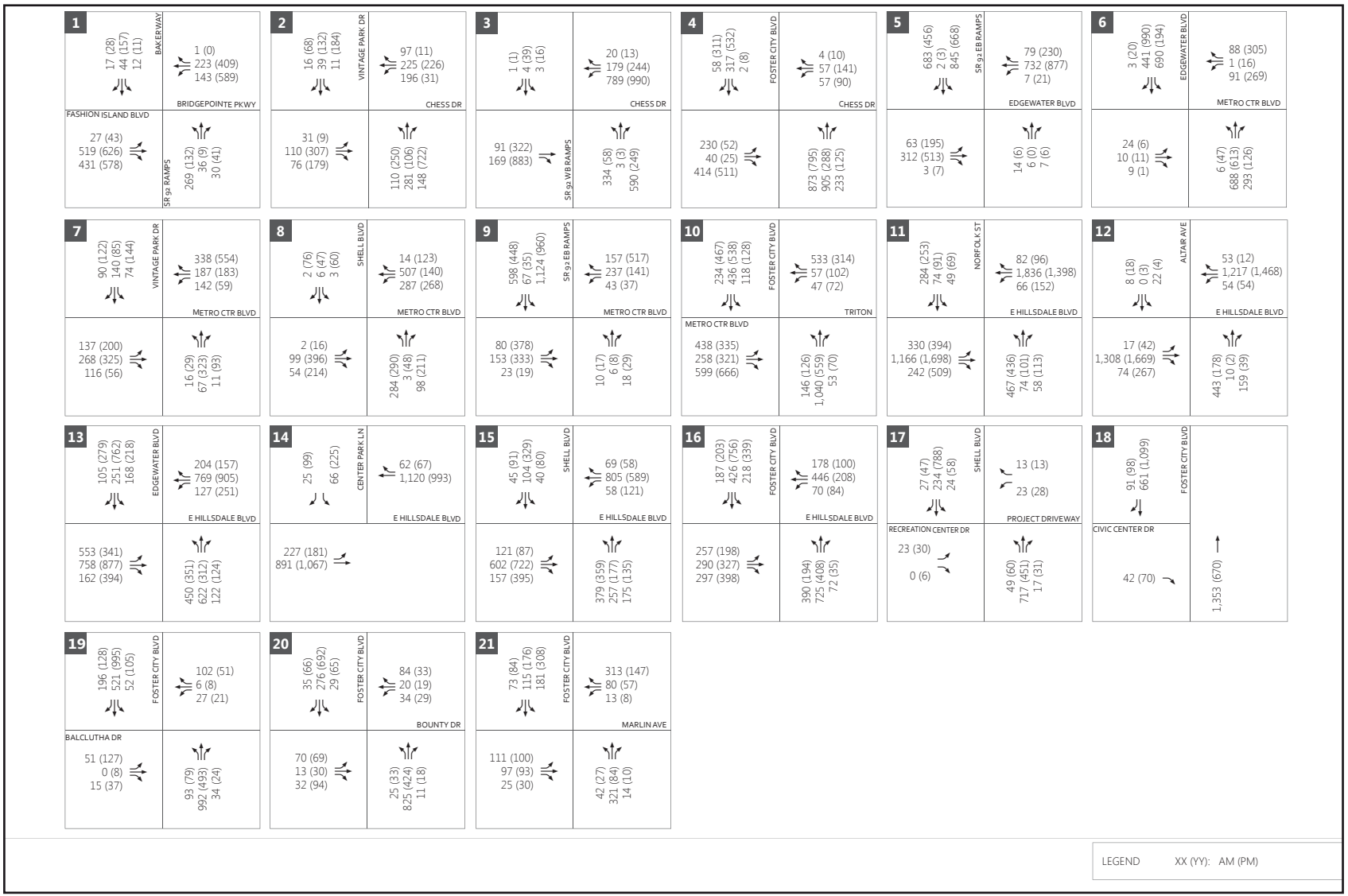
Freeway Operations

Existing freeway volumes plus new vehicle trips due to the proposed project are shown in Table V.B-11. Existing daily traffic volumes plus new vehicle trips due to the project on the study freeway segments are shown in Table E-2 of Appendix B. The freeway traffic volumes and analysis results with the proposed project are presented in Table V.B-11. The freeway LOS would vary depending on the peak hour, direction, and segment, ranging from LOS B to LOS E. No segments on SR 92 or US 101 would exceed their CMP LOS threshold with the proposed project. As a result, the project's impact on freeway operations under the existing plus project scenario would be less than significant.



Source: Fehr & Peers, 2013

Figure V.B-6
The 15 Acres
Trip Assignment—Proposed Project



Source: Fehr & Peers, 2013

Figure V.B-7
The 15 Acres
Existing Plus Project Intersection Peak Hour Volumes—Proposed Project

TABLE V.B-10 EXISTING PLUS PROJECT INTERSECTION LOS RESULTS

Intersection	Control	Existing				Existing Plus Proposed Project			
		AM		PM		AM		PM	
		Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
1. Bridgepointe Parkway and SR 92 WB Ramps[b]	Signal	17	B	20	C	17	B	20	C
2. Vintage Park Drive and Chess Drive	Signal	25	C	35	D	25	C	36	D
3. SR 92 Westbound Ramps and Chess Drive[c]	Signal	11	B	21	C	11	B	20	C
4. Foster City Boulevard and Chess Drive[c]	Signal	17	B	18	B	17	B	18	B
5. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard	Signal	16	B	18	B	17	B	18	B
6. Edgewater Boulevard and Metro Center Boulevard	Signal	16	B	17	B	16	B	17	B
7. Vintage Park Drive and Metro Center Boulevard	Signal	20	C	21	C	20	C	21	C
8. Shell Boulevard and Metro Center Boulevard	Signal	18	B	24	C	18	B	25	C
9. SR 92 Eastbound Ramps and Metro Center Boulevard[c]	Signal	15	B	19	B	14	B	19	B
10. Foster City Boulevard and Metro Center Boulevard/Triton Drive[c]	Signal	22	C	18	B	22	C	19	B
11. Norfolk Street and East Hillsdale Boulevard[b]	Signal	25	C	30	C	25	C	30	C
12. Altair Avenue and East Hillsdale Boulevard	Signal	17	B	<10	A	17	B	<10	A
13. Edgewater Boulevard and East Hillsdale Boulevard	Signal	26	C	31	C	26	C	32	C
14. Center Park Lane and East Hillsdale Boulevard	Signal	<10	A	12	B	<10	A	12	B
15. Shell Boulevard and East Hillsdale Boulevard	Signal	20	C	22	C	20	C	22	C
16. Foster City Boulevard and East Hillsdale Boulevard	Signal	26	C	22	C	26	C	24	C
17. Shell Boulevard and Recreation Center	Signal	<10	A	<10	A	<10	A	<10	A
18. Foster City Boulevard and Civic Center Drive	SSS	10	B	12	B	11	B	12	B
19. Foster City Boulevard and Balclutha Drive	Signal	12	B	12	B	13	B	14	B
20. Foster City Boulevard and Bounty Drive	Signal	12	B	13	B	13	B	13	B
21. Foster City Boulevard and Marlin Avenue	AWS	23	C	13	B	24	C	14	B

[a] For signalized and all-way stop (AWS) controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop (SSS) controlled intersection, the delay shown is the worst-operating approach delay. Changes in delay to intersections operating at LOS A are imperceptible to drivers and therefore are shown to be less than 10 seconds of delay.

[b] Intersection in San Mateo.

[c] Intersection analyzed using the VISSIM microsimulation model.

Source: Fehr & Peers, February 2013.

TABLE V.B-11 EXISTING PLUS PROJECT FREEWAY SEGMENT LOS RESULTS

Segment	CMP LOS Standard	Peak Hour	Direction	Existing		Existing Plus Proposed Project	
				Volume[a]	LOS	Volume[a]	LOS
A. US 101, north of East Third Avenue	F	AM	Northbound	9,454	E	9,462	E
			Southbound	8,403	D	8,414	D
		PM	Northbound	8,845	D	8,856	D
			Southbound	8,391	D	8,401	D
B. US 101, between East Third Avenue and SR 92	F	AM	Northbound	9,049	D	9,056	D
			Southbound	8,608	D	8,618	D
		PM	Northbound	9,258	E	9,269	E
			Southbound	8,604	D	8,613	D
C. US 101, north of East Hillsdale Boulevard	E	AM	Northbound	8,166	D	8,166	D
			Southbound	7,344	C	7,344	C
		PM	Northbound	8,182	D	8,182	D
			Southbound	7,487	D	7,487	D
D. US 101, south of East Hillsdale Boulevard	E	AM	Northbound	7,592	D	7,595	D
			Southbound	9,013	D	9,018	D
		PM	Northbound	8,951	D	8,958	D
			Southbound	8,759	D	8,764	D
E. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard	E	AM	Eastbound	5,634	D	5,651	D
			Westbound	5,930	D	5,940	D
		PM	Eastbound	6,400	E	6,411	E
			Westbound	5,658	C	5,675	C
F. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard	E	AM	Eastbound	4,199	C	4,207	C
			Westbound	5,643	C	5,644	C
		PM	Eastbound	5,676	C	5,677	C
			Westbound	4,475	C	4,482	C
G. SR 92, east of Foster City Boulevard	E	AM	Eastbound	2,590	B	2,592	B
			Westbound	5,601	D	5,607	D
		PM	Eastbound	5,108	D	5,113	D
			Westbound	2,806	B	2,808	B

[a] Volumes presented are passenger-car equivalents.

Source: Fehr & Peers, February 2013.

(1) Cumulative Conditions

Per CEQA, Cumulative Conditions, which include traffic forecasts for probable future developments and planned/funded roadway system improvements, were evaluated. An analysis year of 2025 was selected to coincide with General Plan buildout conditions. The probable future developments included under Cumulative Conditions are shown in Table V.B-12. The locations of these developments are shown on Figure V.B-8. The roadway system improvements are described in Table V.B-14 and their locations are shown on Figure V.B-11.

Assumptions

Cumulative No Project Traffic Volumes

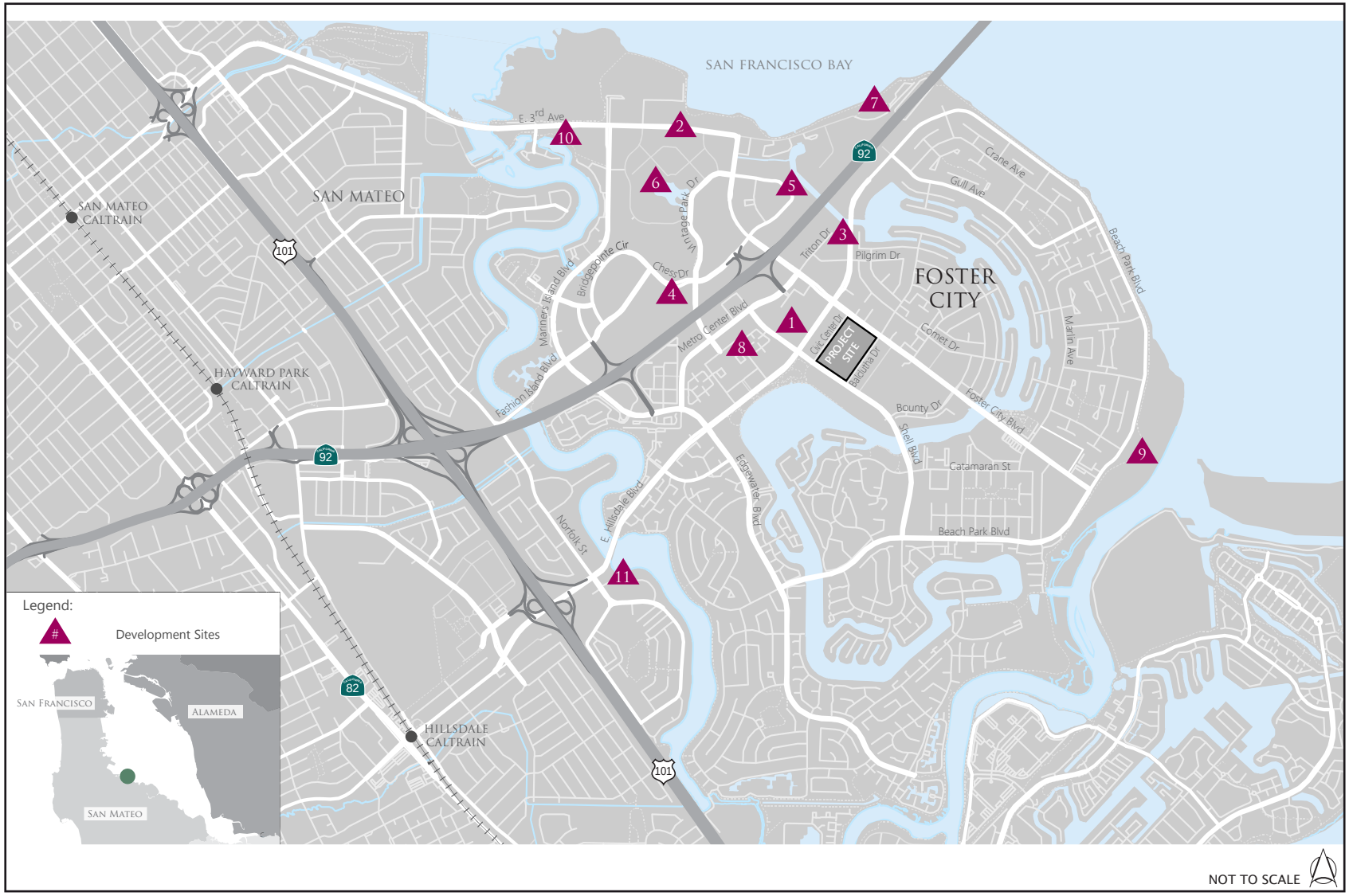
Cumulative No Project Conditions intersection volumes were developed by adding traffic generated by the occupancy of vacant buildings, approved but not yet constructed developments, as well as probable future developments to existing traffic volumes. Traffic volumes for study freeway segments are based on forecasts from the C/CAG travel demand model and include the traffic projections for approved and pending development projects plus regional growth. This approach is described in further depth in the following sections.

Trip Generation

Trip generation estimates were developed by applying trip generation rates and equations presented in the ITE Trip Generation (8th Edition) to the developments shown in Table V.B-12. Site-specific trip generation rates used for the Gilead Sciences 2012 Master Plan are based on information in the Gilead Sciences Integrated Corporate Campus Master Plan Transportation Impact Analysis Report (Fehr & Peers, December 2012). Trips generated by existing uses were subtracted to determine the net new trips added to the surrounding roadway system. Trip generation estimates for these developments are presented in Tables F-2 and F-3 in the appendix.

Table IV.B-13 summarizes the trip generation estimates for the probable future developments included in this study. Overall, the developments associated with Cumulative No Project conditions would add 31,693 daily trips, including 3,174 AM peak-hour trips, and 3,363 PM peak-hour trips to the surrounding roadway system. These trips would be added to existing traffic volumes to create Cumulative No Project Conditions traffic volumes.

The AM and PM peak-hour trips were assigned to the freeway segments, roadway segments, and intersection turning movements based on the directions of approach and departure. The trip distribution pattern is shown on Figure V.B-5.



Source: Fehr & Peers, 2013

Figure V.B-8
The 15 Acres
Probable Future Development Locations

TABLE V.B-12 CUMULATIVE NO PROJECT DEVELOPMENTS AND LAND USES

Development Number	Development Name	Existing Land Uses	Proposed Land Uses
1	303 Velocity Way (EFI)	R&D/Office 595 employees	Office, 850 employees
2	Pilgrim-Triton Master Plan	256,000 s.f. industrial park, 38,300 s.f. office	266,000 s.f. office, 30,000 s.f. retail; 730 residential units (including 64 live-work units)
3	Foster City Hotel	9,385 s.f. unoccupied restaurant	76,980 s.f., 5-story, 135-room hotel
4	Chess-Hatch Master Plan	190,000 s.f. office/warehouse	800,000 s.f. office
5	Gilead Sciences 2012 Master Plan	938,735 s. f. biopharmaceutical campus (office & lab)	2,500,600 s.f. biopharmaceutical campus (office, lab, material storage building, and warehouse)
6	Bayside Towers III	–	92,900 s.f. office
7	Visa V	–	8,000 s.f. office
8	Marina	–	300 berths
9	400 Mariners Island Blvd [a]	–	76 residential units
10	1521 Lago Street [a]	28 apartments	24 condos

[a] These developments are located in the City of San Mateo.
Source: Fehr & Peers, February 2013.

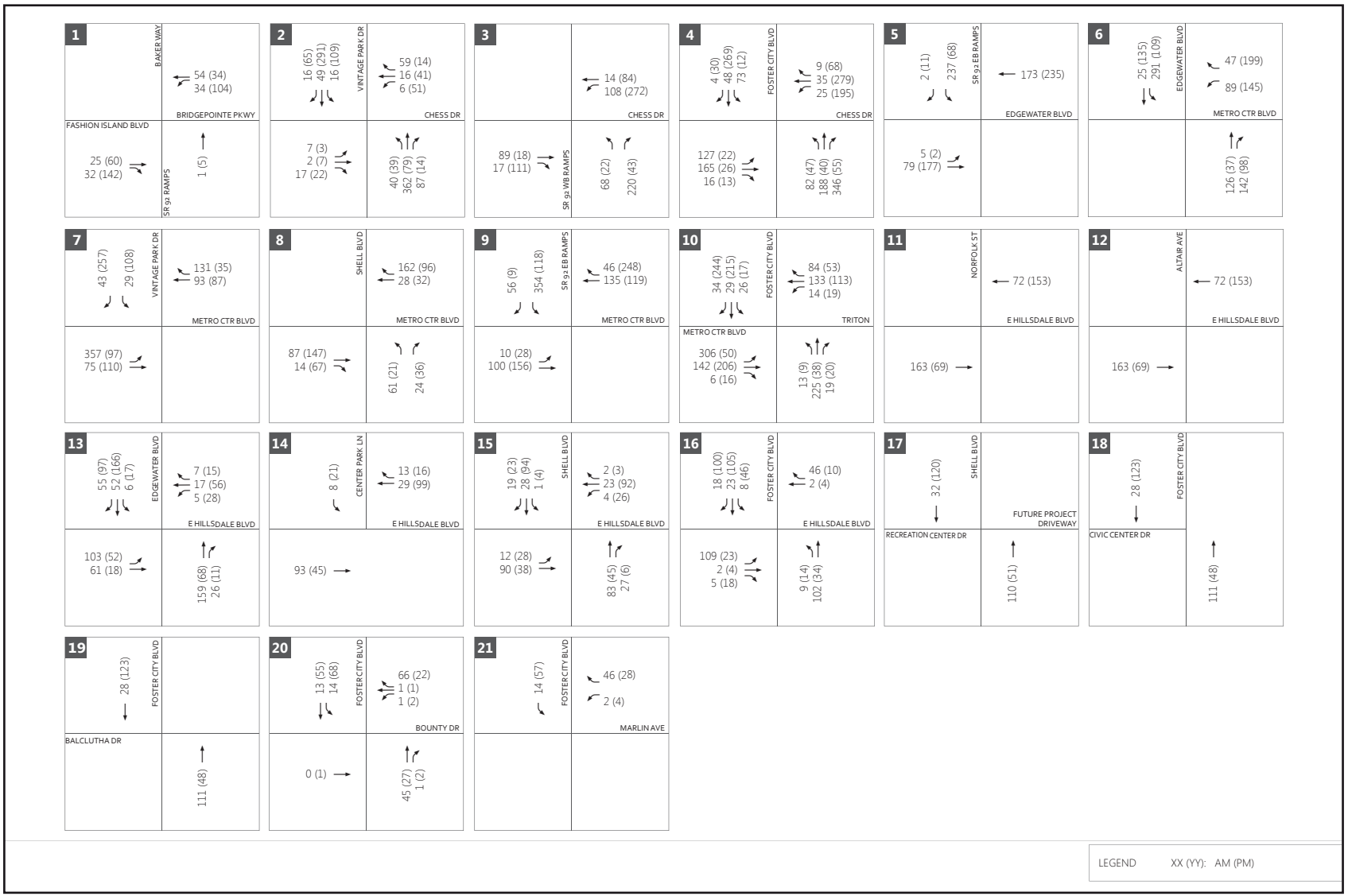
TABLE V.B-13 CUMULATIVE NO PROJECT CONDITIONS TRIP GENERATION ESTIMATE SUMMARY

Scenario	Daily Total	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Total New Trips – Cumulative No Project Conditions	31,693	2,504	670	3,174	838	2,525	3,363

Source: Fehr & Peers, February 2013.

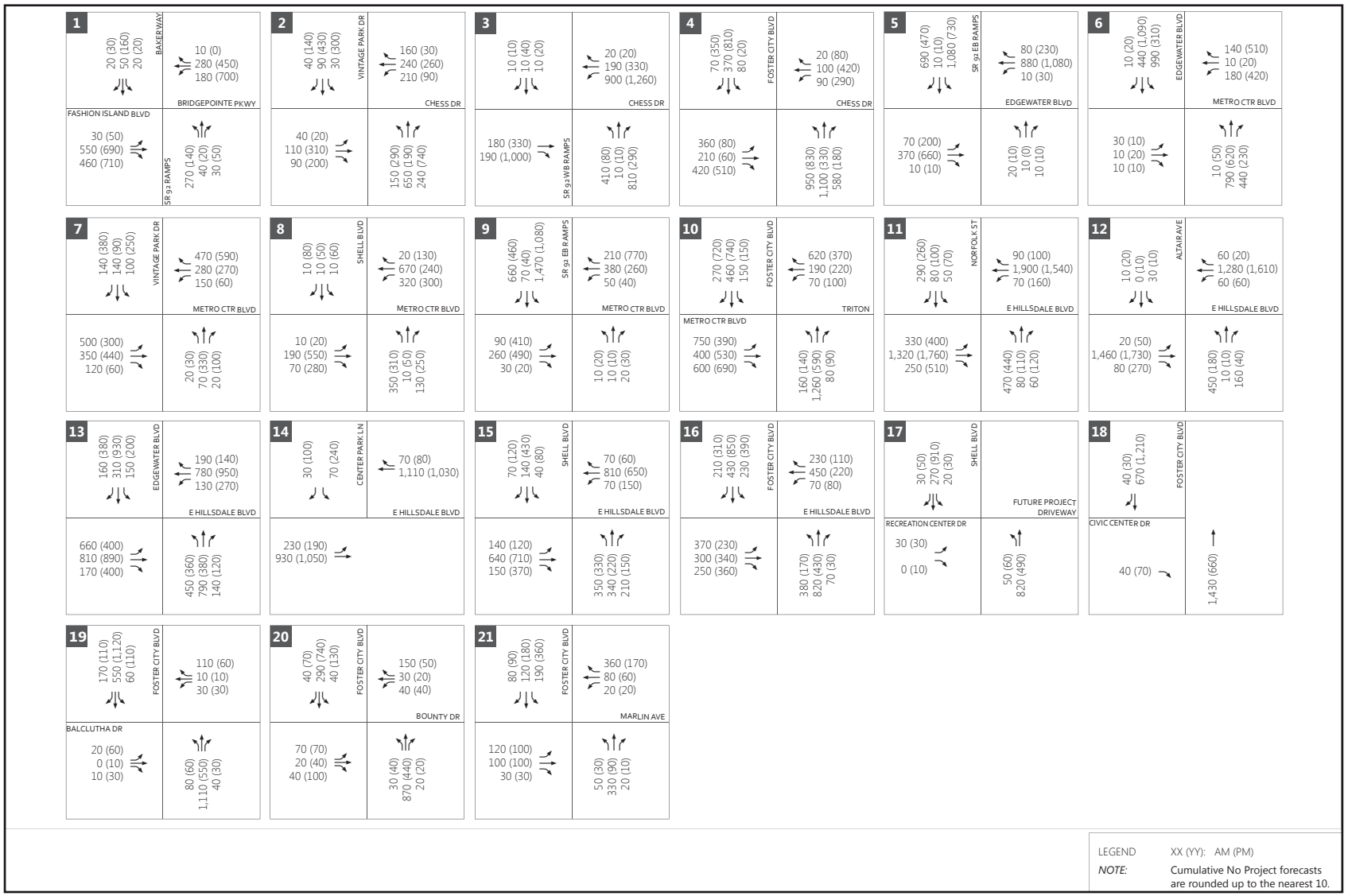
Intersection Volumes

The traffic projections for the probable future developments at the study intersections are presented on Figure V.B-9. Cumulative No Project Conditions intersection turning movement volumes are shown on Figure V.B-10.



Source: Fehr & Peers, 2013

Figure V.B-9
The 15 Acres
Cumulative Conditions Added Traffic



Source: Fehr & Peers, 2013

Figure V.B-10
The 15 Acres
Cumulative No Project Conditions Intersection Peak Hour Volumes

Freeway Volumes
Traffic projections for US 101 and SR 92 through San Mateo and Foster City were developed from 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 appropriate for this study, the base (2010) and future year (2025) model files were reviewed to ensure land uses in Foster City matched the proposed build out of the Foster City General Plan Update. In addition, base model roadway volumes were reviewed to ensure the model 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. Model runs were conducted by VTA staff in August 2012. The differences in traffic volumes between the 2010 and 2025 models were then applied to the existing freeway volumes collected in March 2012 to produce future year forecasts. Existing counts and future year forecasted freeway volumes are shown in Appendix B.

Cumulative Plus Project Conditions
As shown in Table V.B-9, the proposed project would add 4,233 daily trips, 238 AM peak hour trips, and 321 PM peak-hour trips to Cumulative traffic volumes.

The new AM and PM peak-hour trips for the proposed project were assigned to the freeway segments, roadway segments, and intersection turning movements based on the directions of approach and departure shown in Figure V.B-5. The new trips were distributed to the study intersections as shown on Figure V.B-6 and to the freeway mainline segments as shown in Appendix B. Intersection turning movement volumes for Cumulative Plus Project Conditions are shown on Figure V.B-12.

Cumulative Roadway Improvements
A previous analysis, the Foster City Multi-Project Traffic Analysis, was conducted to identify roadway improvements to accommodate future proposed development including Gilead Sciences (South Campus), Chess Drive Offices, Mirabella (precursor to the proposed project evaluated in this EIR), and Pilgrim/Triton. Each development 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 (based on the 2010 Master Plan) projects based on the terms of their Development Agreements. Additional funding will be provided by Gilead Sciences as part of the Integrated Corporate Campus Master Plan and by the developers of the Chess Drive Offices and the 15 Acres project in conjunction

with their approvals, based on the contribution of their projects to traffic impacts. Funding for Improvement #6 - CIP 610 Metro Center Boulevard and Triton Drive Widening Improvement Project ($650,000) was approved at the October 4, 2012 San Mateo County Transportation Authority Meeting as part of Measure A Highway Program Funds for County Supplemental Projects. The schedule for the other roadway improvements is dependent on the progress of the identified, supporting developments. The improvements presented in the Foster City Multi-Project Traffic Analysis are shown in Table V.B-14 and shown on Figure V.B-11. The City has elected to proceed with seven of the eleven improvements. These roadway improvements are included under both Cumulative Conditions analysis scenarios as they are tied to cumulative developments and the funding sources for those improvements have been identified.

Other potential roadway improvements not incorporated in this study include Caltrans's proposal for ramp metering at all freeway on-ramps to US 101 and SR 92 in the study area. The status of these improvements is uncertain and a separate ramp metering study would need to be completed to determine their feasibility.

Cumulative No Project

Intersection Operations

The intersection LOS analysis results for Cumulative No Project Conditions (including the improvements shown on Figure V.B-11) are presented in Table V.B-15. The LOS results show that the study intersections would operate at an acceptable LOS D or better except for the SR 92 Westbound Ramps at Chess Drive. The intersection of the SR 92 Westbound Ramps and Chess Drive would degrade to LOS F during the PM peak hour due to traffic growth on the SR 92 freeway mainline and the westbound on-ramp. These results are similar to those of the Foster City Multi-Project Traffic Analysis, which determined that without additional capacity on the westbound SR 92 on-ramp, the intersection of the SR 92 Westbound Ramps and Chess Drive would degrade to LOS E or F under Cumulative Conditions. The Foster City General Plan Land Use and Circulation Policy LUC-50 states that it will be necessary to accept LOS E or F at this intersection under General Plan buildout.

Freeway Operations

The Cumulative Conditions freeway volumes and analysis results are presented in Table V.B-16. The following two mainline segments on SR 92 or US 101 would exceed their CMP LOS threshold with the addition of traffic due to cumulative development:

- **Segment D.** Southbound US 101, south of East Hillsdale Boulevard – LOS F during the PM peak hour

TABLE V.B-14 CUMULATIVE ROADWAY SYSTEM IMPROVEMENTS

Improvement	Assigned Responsibility	Included in Cumulative Conditions
1. Reconstruct on-ramp to Westbound SR 92 to provide two lanes merging onto SR 92	All[a,b]	No[c]
2. Install signal interlock at Foster City Boulevard/Chess Drive and SR 92 Westbound Ramps/Chess Drive	All	Yes
3. Lengthen northbound left-turn lane on Foster City Boulevard at Chess Drive to 650 feet	All	Yes
4. Lengthen westbound left-turn lane on Chess Drive at Foster City Boulevard to 300 feet	Chess Offices	Yes
5. Widen Triton Drive and modify signal at Foster City Boulevard/Metro Center Boulevard/Triton Drive	Pilgrim/Triton	Yes
6. Add eastbound lane on Metro Center Boulevard between SR 92 and Foster City Boulevard, and install signal interlock (Foster City Boulevard/Metro Center Boulevard and SR 92 Eastbound Ramps/Metro Center Boulevard)	All	Yes
7. Construct northbound right-turn lane from Foster City Boulevard at Chess Drive	Chess Offices	Yes
8. Construct second westbound through lane on Chess Drive at Foster City Boulevard	Chess Offices	Yes
9. Install traffic signal at Foster City Boulevard/Marlin Avenue	None[b]	No
10. Close driveway on north side of Chess Drive/Westbound SR 92 Ramps intersection	None[b]	No
11: Provide 2 right turn lanes from Westbound SR 92 off-ramp onto eastbound Chess Drive	All[b]	No[c]

[a] "All" refers to the following projects included in the Foster City Multi-Project Traffic Analysis: Chess Drive Offices, Gilead Sciences, Pilgrim-Triton, and Mirabella (current 15 Acres Project site).
[b] Foster City elected not to pursue these projects and therefore they are not included under Cumulative Conditions.
[c] Improvement was not approved by Caltrans and thus is not included under Cumulative Conditions.
Source: Fehr & Peers, February 2013.

- **Segment E.** Eastbound SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard – LOS F during the PM peak hour

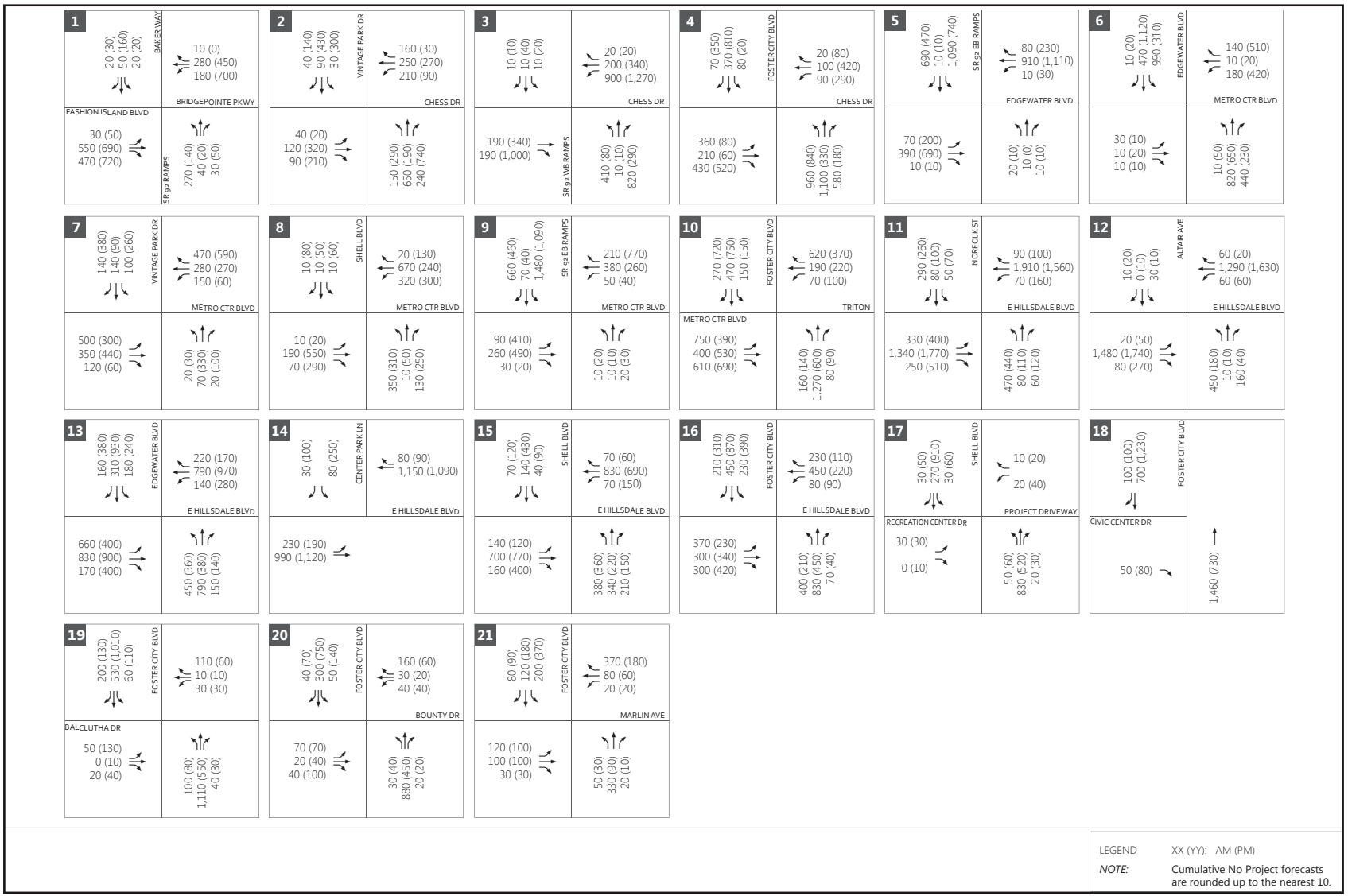
This deterioration in freeway LOS is largely due to regional traffic growth and, to a lesser extent, development in Foster City.

Notes:
1) Project numbers refer to Table IV.G-14.
2) Foster City elected not to pursue improvements to the SR 92-Chess Drive on- and off-ramps (projects #1 and #11 in Table IV.G-14), and therefore they are not included. Both projects are funded but have not been approved by Caltrans.

NOT TO SCALE

Source: Fehr & Peers, 2013

Figure V.B-11
The 15 Acres
Cumulative Roadway Improvements



Source: Fehr & Peers, 2013

Figure V.B-12
The 15 Acres
Cumulative Plus Project Intersection Turning Movement Volumes

TABLE V.B-15 CUMULATIVE PLUS PROJECT INTERSECTION LOS RESULTS

Intersection	Control	Cumulative				Cumulative Plus Proposed Project			
		AM		PM		AM		PM	
		Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
1. Bridgepointe Parkway and SR 92 WB Ramps[b]	Signal	17	B	23	C	17	B	23	C
2. Vintage Park Drive and Chess Drive	Signal	26	C	49	D	26	C	50	D
3. SR 92 Westbound Ramps and Chess Drive[c,d]	Signal	20	B	81	F	26	C	85	F
4. Foster City Boulevard and Chess Drive[c]	Signal	29	C	45	D	30	C	50	D
5. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard	Signal	19	B	20	B [e]	20	B [e]	20	C
6. Edgewater Boulevard and Metro Center Boulevard	Signal	19	B	24	C	20	B [e]	24	C
7. Vintage Park Drive and Metro Center Boulevard	Signal	21	C	24	C	23	C	24	C
8. Shell Boulevard and Metro Center Boulevard	Signal	19	B	30	C	19	B	30	C
9. SR 92 Eastbound Ramps and Metro Center Boulevard[c]	Signal	19	B	22	C	18	B	22	C
10. Foster City Boulevard and Metro Center Boulevard/Triton Drive[c]	Signal	36	D	24	C	39	D	24	C
11. Norfolk Street and East Hillsdale Boulevard[b]	Signal	25	C	30	C	26	C	30	C
12. Altair Avenue and East Hillsdale Boulevard	Signal	17	B	<10	A	17	B	<10	A
13. Edgewater Boulevard and East Hillsdale Boulevard	Signal	32	C	42	D	33	C	43	D
14. Center Park Lane and East Hillsdale Boulevard	Signal	<10	A	12	B	<10	A	12	B
15. Shell Boulevard and East Hillsdale Boulevard	Signal	22	C	24	C	23	C	25	C
16. Foster City Boulevard and East Hillsdale Boulevard	Signal	34	C	23	C	34	C	26	C
17. Shell Boulevard and Recreation Center	Signal	<10	A	12	B	<10	A	12	B
18. Foster City Boulevard and Civic Center Drive	SSS	10 (EB)	B	12 (EB)	B	11 (EB)	B	13 (EB)	B
19. Foster City Boulevard and Balclutha Drive	Signal	11	B	12	B	13	B	14	B
20. Foster City Boulevard and Bounty Drive	Signal	15	B	14	B	15	B	15	B
21. Foster City Boulevard and Marlin Avenue	AWS	31	D	16	C	33	D	17	C

Notes: **Bold** = Unacceptable operations Shaded = Significant Impact

[a] For signalized and (AWS) all-way stop controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop (SSS) controlled intersection, the delay shown is the worst-operating approach delay. Changes in delay to intersections operating at LOS A are imperceptible to drivers and therefore are shown to be less than 10 seconds of delay.

[b] Intersection in San Mateo.

[c] Intersection analyzed using the VISSIM microsimulation model.

[d] Foster City General Plan Land Use and Circulation Policy LUC-50 states that it will be necessary to accept LOS E or F at this intersection.

[e] The threshold for LOS C is 20.1 seconds of delay. As shown in Appendix B, the delay at these intersections is less than 20.1 seconds of delay and thus they are LOS B.

Source: Fehr & Peers, February 2013.

TABLE V.B-16 CUMULATIVE PLUS PROJECT FREEWAY SEGMENT LOS RESULTS

Segment	CMP LOS Standard	Peak Hour	Direction	Cumulative		Cumulative Plus Proposed Project	
				Volume[a]	LOS	Volume[a]	LOS
A. US 101, north of East Third Avenue	F	AM	Northbound	10,653	F	10,662	F
			Southbound	9,172	D	9,183	D
		PM	Northbound	9,796	E	9,808	E
			Southbound	9,449	E	9,459	E
B. US 101, between East Third Avenue and SR 92	F	AM	Northbound	10,337	E	10,344	E
			Southbound	8,883	D	8,894	D
		PM	Northbound	9,615	E	9,627	E
			Southbound	9,865	E	9,874	E
C. US 101, north of East Hillsdale Boulevard	E	AM	Northbound	9,405	E	9,405	E
			Southbound	7,980	D	7,980	D
		PM	Northbound	8,839	D	8,839	D
			Southbound	9,134	D	9,134	D
D. US 101, south of East Hillsdale Boulevard	E	AM	Northbound	9,142	D	9,145	D
			Southbound	9,778	E	9,783	E
		PM	Northbound	9,755	E	9,762	E
			Southbound	10,437	F	10,442	F
E. SR 92, between US 101 and Mariners Island Boulevard/ Edgewater Boulevard	E	AM	Eastbound	6,544	E	6,562	E
			Westbound	6,836	D	6,846	D
		PM	Eastbound	7,030	F	7,041	F
			Westbound	6,827	D	6,845	D
F. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard	E	AM	Eastbound	4,864	C	4,873	C
			Westbound	6,482	D	6,483	D
		PM	Eastbound	6,226	D	6,227	D
			Westbound	5,392	C	5,400	C
G. SR 92, east of Foster City Boulevard	E	AM	Eastbound	2,885	B	2,887	B
			Westbound	6,609	E	6,615	E
		PM	Eastbound	5,813	D	5,819	D
			Westbound	3,391	B	3,393	B

Note: Bold indicates locations where segment operations exceed CMP thresholds

[a] Volumes presented are passenger-car equivalents.

Source: Fehr & Peers, February 2013.

In addition, northbound US 101, north of East Third Avenue would operate at LOS F during the AM peak hour. However, this is consistent with the CMP LOS standard of F for this segment. The remaining freeway segments would operate at LOS E or better under Cumulative Conditions. Cumulative daily traffic volumes on the study freeway segments are shown in Table E-2 of Appendix B.

Cumulative with Project

Intersection Operations

As shown in Table V.B-15, intersection LOS would remain similar to Cumulative No Project Conditions. Intersection 3 (SR 92 Westbound Ramps and Chess Drive) will be operating at LOS F in Cumulative No Project at the PM peak hour. The intersection will continue operating at LOS F with the project during the PM peak hour. The proposed project would not cause an intersection operating acceptably to operate at an unacceptable LOS E or F. Therefore, the project's contribution to the cumulative intersection impacts are less-than-significant.

Freeway Operations

As shown in Table V.B-16, with the addition of project traffic, freeway operations would be similar to Cumulative No Project Conditions, with only small increases in traffic on most freeway segments. 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.

c. Other Topics

This subsection includes a discussion of the potential impacts of the project related to pedestrian, bicycle, and transit facilities; site access and circulation; emergency access; air traffic; construction; transportation demand management; and parking.

(1) Pedestrian Facilities

This section addresses pedestrian connections to off-site destinations. In general, the project will maintain or improve pedestrian conditions around the site. The project proposes pedestrian improvements to Shell Boulevard by widening the sidewalks and providing street trees to serve as buffers to the adjacent vehicle traffic. Pedestrian connections into the site from Foster City Boulevard will be provided through a ten-foot wide sidewalk with a wide landscaped buffer through the surface parking lot.

Residents, employees, and visitors may be expected to travel to and from the project site on foot to reach transit stops and to access local businesses or parks. Pedestrian access points to and from the project site include:

- Foster City Boulevard and Civic Center Drive (to the north along Foster City Boulevard)
- Foster City Boulevard and Balclutha Drive (across Foster City Boulevard and to the south)
- Shell Boulevard and Civic Center Drive (to the north along Shell Boulevard)
- Shell Boulevard and Recreation Center access road (across Shell Boulevard)
- Shell Boulevard and Balclutha Drive (to the south along Shell Boulevard)

Pedestrian access is provided along Shell Boulevard and Foster City Boulevard to the transit stops on East Hillsdale Boulevard. Access to nearby retail establishments would be provided through the intersections of East Hillsdale Boulevard with Shell Boulevard and Foster City Boulevard. Access to the walking trails along the Central Lake and Leo J. Ryan Memorial Park would be provided at Shell Boulevard and the Recreation Center access road. Currently, there are sidewalks along these streets and marked crosswalks at these intersections. Existing facilities provide adequate pedestrian access to off-site connections.

The project does not disrupt existing or planned pedestrian facilities nor does it create inconsistencies with adopted pedestrian system plans, guidelines, or policy standards. Therefore, the proposed project would result in no significant impacts to pedestrian facilities.

(2) Bicycle Facilities

This section addresses bicycle connections to off-site destinations. The project does not propose changes to the bicycle facilities connecting to the site. Bicycle access to the project site is provided through several City of Foster City designated Class III bicycle routes including Foster City Boulevard, Shell Boulevard, and East Hillsdale Boulevard. Civic Center Drive and Balclutha Drive are designed for shared use with bicyclists with narrow roadways and 15 mph signed speed limits. A Class I multi-use pathway is provided along East Hillsdale Boulevard which provides bicycle connections to the retail center at Center Park Lane and the Class I multi-use pathway that circles Foster City Boulevard along the waterfront. The Class III bicycle route provides access to the Hillsdale Caltrain station in the City of San Mateo.

The project does not disrupt existing or planned bicycle facilities nor does it create inconsistencies with adopted bicycle system plans, guidelines, or policy standards. Therefore, the proposed project would result in no significant impacts to bicycle facilities.

(3) Transit Facilities

As discussed previously, transit lines operated by SamTrans, Caltrain, and AC Transit serve the project site. One employer-funded shuttle, the Mariner Island shuttle, operates on East Hillsdale Boulevard near the site. All providers have a transit stop within ¼-mile of the project site. Pedestrian access is provided between the project site and the nearby transit stops.

The project does not disrupt existing transit facilities or services nor does it interfere with planned transit facilities or service. The projected transit ridership is low and can be accommodated with existing transit service to the site. The project does not create inconsistencies with adopted transit system plans, guidelines, or policy standards. Therefore, the proposed project would result in no significant impacts to transit facilities.

(4) Site Access and Circulation

Figure V.B-13 shows the site plan for the proposed project. Primary vehicle ingress and egress to and from the project site would be provided at the intersections of Civic Center Drive and Balclutha Drive at Foster City Boulevard, and Recreation Drive/Central Street at Shell Boulevard. Additional right-turn only access would be provided at Balclutha Drive and Civic Center Drive at Shell Boulevard. Foster City Boulevard would provide the primary access to the shared parking lots for the retail, office, affordable senior housing, and assisted and independent living center. Shell Boulevard would provide the primary access to the market rate senior housing. A Street would provide vehicle access to the market rate units north of Central Street. Parking for the market rate senior housing would be provided in ground level garages, with access provided by courtyards and loading aisles connecting to Central Street, Balclutha Drive, and A Street. East-west access between Foster City Boulevard is provided along Civic Center Drive, Balclutha Drive, and Central Street.

Emergency vehicle access would be provided through the site via Civic Center Drive, Central Street, and Balclutha Drive. Primary truck access would be provided from Foster City Boulevard via Civic Center Drive and Balclutha Drive. However, truck access to these locations would be infrequent and would therefore minimize conflicts with pedestrians, bicycles, and passenger vehicles. These streets are all designed to be at least 20 feet wide. The roundabouts are large enough for truck and emergency access per Federal

Highway Administration roundabout design standards, which includes a 100-foot inscribed circle typical for urban roundabout design, with a 40-foot inner circle and mountable apron. The proposed project would not include design features that would result in roadway or vehicle hazards.

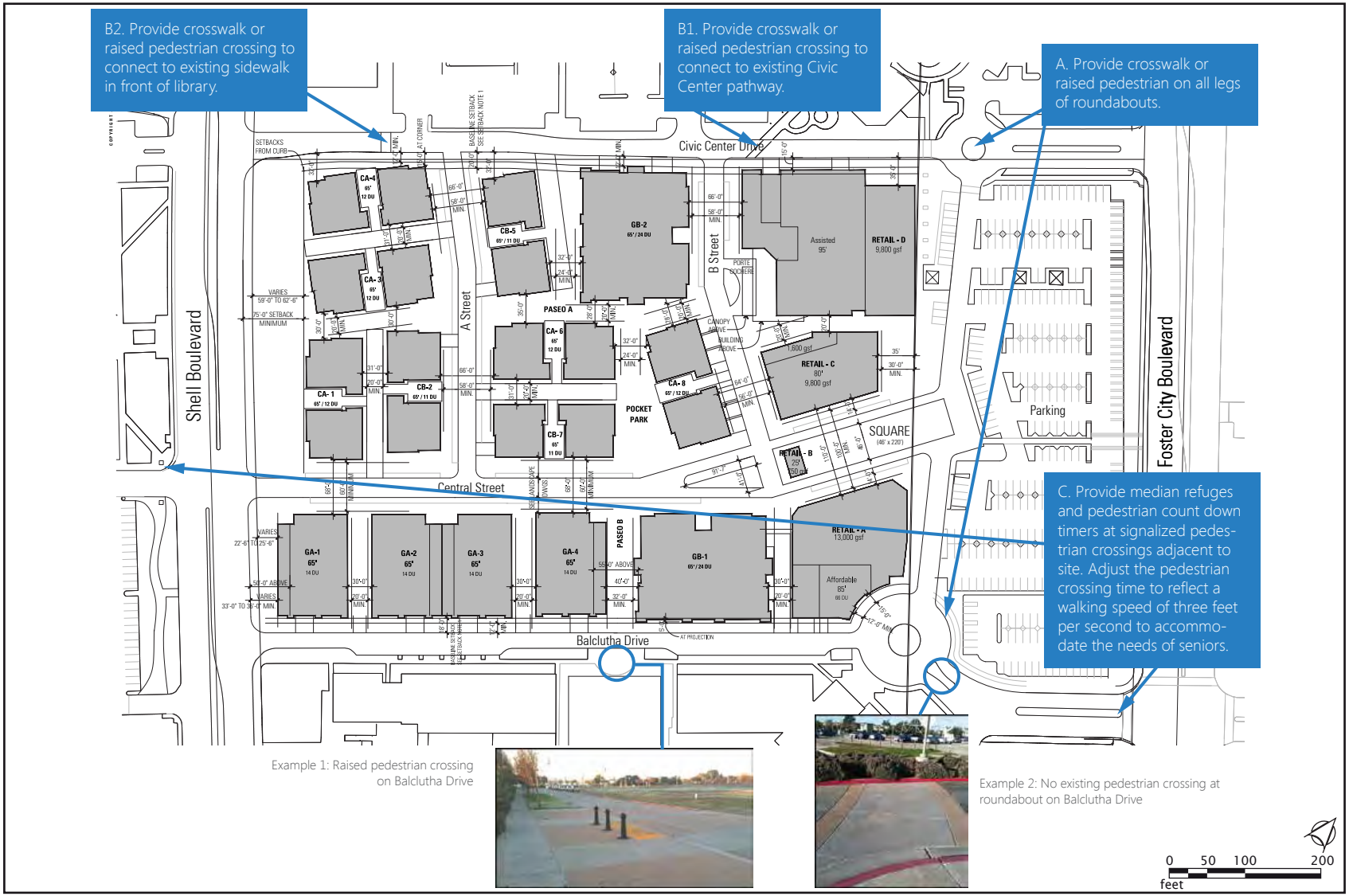
In general, the project site would be designed to be pedestrian and bicycle oriented. Central Street is proposed to be designed as a pedestrian space with special paving, flush curbs, bollards, raised planters, and shade trees. In addition, several non-vehicular landscaped paseos will traverse the neighborhood, providing easy access throughout the site for residents and visitors.

The project has a less-than-significant impact regarding site design, on-site circulation, and site access. However, to further improve safety and mobility for all users, Improvement Measure I-TR-1 is recommended, including additions to enhance the site plan as shown in Figure V.B-13.

Improvement Measure 1-TR-1: Site Plan Design

The project sponsor shall incorporate the following best practices when designing the final site plan to improve safety and mobility for all users.

- Provide pedestrian and bicycle wayfinding to key destinations.
- Provide sidewalks with landscape buffers and/or landscaped medians, where feasible, along all roadways.
- Provide marked crosswalks or raised pedestrian crossings on all legs of controlled intersections.
- Provide crosswalks or raised pedestrian crossings to connect across Balclutha Drive and Civic Center Drive to existing sidewalks and pedestrian pathways.
- Adjust the pedestrian timing at signalized intersections near the site to account for the slower walking speeds of seniors.
- Enhance pedestrian crossings across Foster City Boulevard and Shell Boulevard at signalized intersections to reduce pedestrian exposure time through median refuges, bulb-outs, and pedestrian count down timers.
- Provide pedestrian lighting along all streets within and adjacent to the project site (similar to existing pedestrian-scale lighting provided along Balclutha Drive).



Source: Fehr & Peers, 2013

Figure V.B-13
The 15 Acres
Project Site Plan Recommendations

- Provide directional curb ramps with tactile domes at all crosswalks within and adjacent to the project site.
- Tighten corner radii to reduce vehicle turning speeds.
- Provide high-visibility marked crosswalks at uncontrolled intersections and midblock locations with high pedestrian demand. Enhance crosswalks with beacons or signals where higher speeds and traffic volumes are expected.
- Provide short-term and long-term bicycle parking at all buildings.
- Provide pedestrian paths through parking lots that reduce pedestrian exposure and offer direct links.
- Provide crosswalks or raised pedestrian crossings on all legs of roundabouts on Civic Center Drive and Balclutha Drive.
- Provide crosswalks or raised pedestrian crossings across Civic Center Drive to connect to existing pedestrian pathways at the Foster City Library and Civic Center.
- Provide median refuges, bulb-outs, and pedestrian count down timers at signalized pedestrian crossing at the intersections of Foster City Boulevard and Balclutha Drive and Shell Boulevard and Recreation Center/Central Street. Adjust the pedestrian crossing time to reflect a walking speed of three feet per second to accommodate the needs of seniors living at the proposed project, which exceeds the standard within the current edition of the California Manual on Uniform Traffic Control Devices, (Section 4E.06) currently requiring 3.5 feet per second.

<u>Emergency Access</u>
Emergency vehicles would be able to use the roadways surrounding the project site and would provide adequate access for emergency vehicles. Therefore, the proposed project would not result in emergency vehicle access impacts.

(5) Air Traffic

Additional employment associated with the proposed project would not contribute substantially to demand for commercial flights because most new employees would be expected to work on-site. 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.

(6) Construction

Project construction would affect off-site circulation due to increased truck traffic to and from the site. Construction would also disrupt on-site travel due to the potential closure of sidewalks and blockage of bicycle facilities and transit routes during construction.

Impact TRANS-1: Project construction activities could interfere with circulation patterns. (S)

Implementation of the following mitigation measure would reduce this impact to a less-than-significant level:

Mitigation Measure TRANS-1: Prior to the issuance of a site development permit/use permit, the project sponsor shall develop and submit a construction management plan for City approval that specifies measures that would reduce impacts to motor vehicle, bicycle, pedestrian, and transit circulation associated with project construction activities. The construction management plan shall include the following:

- Location of construction staging areas for materials, equipment, and vehicles.
- Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
- Identification of haul routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation, and safety; and provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project sponsor.
- Provisions for removal of trash generated by project construction activity.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager.
- Provisions for pedestrian and bicycle circulation through the congestion zone.

The project sponsor shall implement the construction management plan during the construction period. (LTS)

d. Planning Related Non-CEQA Issues

(1) Parking

Although parking is not typically considered a physical impact for CEQA purposes, a description of parking that would be included in the proposed project is included for informational purposes. The proposed project would provide a total of 788 parking spaces in a combination of ground floor parking underneath residential units, parking garages, on-site on-street spaces, and a surface lot. Two covered parking spaces per unit would be provided for each of the Market Rate For Sale Senior housing units for a total of 392 spaces. Guest parking would be provided in 50 on-street parking spaces. Parking for the Affordable Senior housing units would be provided through 53 spaces in the parking lot. Parking for the Assisted and Independent Living Apartments would be provided in a separate garage with 40 parking spaces and via 43 spaces in the parking lot. Parking for the office, retail, and restaurant uses would be provided through 202 parking spaces in the parking lot and 8 on-street parking spaces in the central square. This information is summarized in Table V.B-17. All parking spaces would be universal stalls (8.5 feet wide by 18 feet long), per Foster City Municipal Code requirements.

TABLE V.B-17: PROPOSED PROJECT PARKING SUPPLY

Land Use Component	Parking Supply Description	No. of Spaces
Market Rate For Sale Senior Units - Resident Spaces	Two-car private garages below each unit	392
Market Rate For Sale Senior Units - Guest Spaces	On-street parking	50
Affordable Senior Housing Units	Parking lot	53
Assisted & Independent Living Apartments	40 garage stalls and 43 spaces in parking lot	83
Commercial Uses (Retail, Office, and Restaurant)	Parking lot	202
On-Street Square Parking	On-street parking	8
	Total Spaces	*788*

Notes:
k.s.f. = 1,000 square feet
Source: Fehr & Peers, March 2013.

Parking Supply Requirements

The Foster City Municipal Parking Code includes the following requirements for the uses in the proposed project (Municipal Code 17.62.060):

- Residential Multi-Family Uses:

  - Studio - 1 space per unit.
  - One-bedroom – 1.5 spaces per unit.
  - Two-bedroom – Two spaces per unit.
  - Three or more bedrooms – Two spaces per unit.
  - Senior Citizens Rental Housing – 0.5 spaces per bedroom.
  - Guest/visitor Parking (projects with 25 or more Dwelling Units). In addition to the required number of covered off-street parking stalls for each unit, 0.5 off-street uncovered parking stalls shall be provided for each unit for visitor parking.
- Office and Retail Uses: 1 space per 250 gross square feet.
- Sit-Down Restaurant:
  - 1 space per 40 gross square feet of public accommodation area, plus 1 space per 250 square feet of remaining area, or 1 space per employee, whichever is greater.
- Fast-food Restaurants:
  - 1 space per 75 gross square feet, with a minimum requirement of ten parking stalls, plus a minimum requirement of ten locking bicycle facilities.
  - All bicycle facilities shall be located clear of public walkways and convenient to the main entrance of the use.

Per Municipal Code 17.62.060(D)(1), shared parking facilities may be provided at the option of the developer when applicable to commercial, residential or office off-street parking uses, subject to City approval. A shared parking analysis for the project is discussed below in the parking demand section.

Further reductions from these ratios can be applied to account for motorcycle and bicycle parking. These credits include:

- Motorcycle spaces in 1 percent of parking stalls (one parking space credited for every two motorcycle spaces)
- Bicycle spaces in 5 percent of parking stalls (one parking space credited for every eight bicycle spaces)

Table V.B-18 compares the Foster City parking code requirements and the proposed supply. As shown, the project would provide 45 fewer spaces than required for the residential uses and 242 fewer spaces than required for commercial uses.

TABLE V.B-18: COMPARISON OF REQUIRED AND PROVIDED PARKING SPACES

Land Use	Size	City Requirements		Proposed Parking Supply (Spaces)	Surplus / Deficit
		Rate	No. of Spaces		
Residential					
Market Rate For Sale Senior	196 units	2.0	392	392	0
Market Rate Guest Spaces	196 units	0.5	98	50	-48
Affordable Senior	66 units	0.5 [a]	33	53	-13
Affordable Senior Guest Spaces	66 units	0.5	33		
Assisted & Independent Living Apartments [b]	152 units	--	67	83	+16
Residential Total	*414 units*			*578*	*-45*
Commercial					
Office	30 k.s.f.	4.0	120		
Neighborhood Retail	16.4 k.s.f.	4.0	66		
High-Turnover Restaurant	12 k.s.f.	13.33	160		
Quality Restaurant	11.6 k.s.f.	10	116		
Commercial Total	*70 k.s.f.*	--	*462*	*210*	*-242*

Notes:
[a] Includes 0.5 spaces per unit and 0.5 spaces per guest.
[b] Foster City does not have required parking rates for Assisted & Independent Living Apartments. The number of recommended parking spaces is based on surveys of similar facilities as shown Table V.B-19.
k.s.f. = 1,000 square feet
Source: Fehr & Peers, March 2013.

Parking Demand

This section discusses the parking demand anticipated for the proposed project for residents, residential visitors, commercial employees, and customers. To forecast the parking demand generated by the proposed project, Fehr & Peers reviewed parking demand survey results from the following sources:

- Institute of Transportation Engineers (ITE) *Parking Generation*
- Urban Land Institute (ULI) *Shared Parking*
- Parking studies for multi-family and senior housing complexes in the Bay Area

The ITE and ULI parking demand rates are based on multiple surveys conducted at numerous locations across the United States that include resident, visitor, employee, and customer parking demand.

The following sections discuss the parking supply and demand for the assisted living units and visitor parking for the residential units. A shared parking demand analysis was conducted to compare the combined peak parking demand of the uses that would use the surface lot and other shared spaces to the number of spaces provided. These uses include all but the residents of the market rate for sale senior units, which have reserved parking that is more than sufficient to accommodate their peak demand[3].

Assisted Living Parking Supply and Demand

Foster City parking regulations do not include requirements for assisted living or congregate care facilities. Vehicle ownership of residents in assisted living facilities is generally low or in some cases not allowed; therefore, the parking demand is primarily driven by employee and visitor parking.

Parking data from several sources are compared in Table V.B-19. Parking demand rates from the ITE *Parking Generation* (4th Edition, 2010) and parking demand studies for the Palo Alto Commons[4] and for Sunrise Assisted Living Facilities[5] in the Bay Area were used to determine the typical parking demand for assisted living facilities.

[3] This assumes that the parking spaces are made available for vehicle parking and are not used for storage.

[4] Palo Alto Commons is a senior assisted living center with 117 rooms (room for 140 residents/beds) in Palo Alto, CA. This center includes a mix of independent and assisted living and includes a memory care facility similar to the proposed project. These parking rates are based on the resident/staff surveys and parking counts conducted in 2010. *Palo Alto Commons Parking Analysis*, Fehr & Peers, October 2010.

[5] In April 2003 Fehr & Peers conducted parking demand surveys at three Sunrise Assisted Living Facilities in the Bay Area (Petaluma, San Mateo, and Sunnyvale). All three facilities offer 24-hour a day assisted living services in a group setting with regularly scheduled activities, meals, and medical service. The actual parking demand for each site, collected during the weekday and weekend site visits, was compared to the activity of each site reflected in the sign-in logs, if available from the traffic data collection period, and to the automatic driveway count data collected on the same day as the parking survey. Based

The proposed parking supply rate (0.55 spaces per unit) would be higher than the average peak observed demand of 0.41 per unit from the four sources. As shown in the table, the project would provide, on average, 16 more spaces than the recommended supply based on the observed demand rates for the assisted living units.

Residential Visitor Parking Demand

Foster City has a separate parking code requirement for visitor spaces for residential units. Visitor parking demand rates from ULI and from surveys of two residential sites (located in Foster City and San Mateo) were reviewed for the recent *Triton Pointe Parking Study* (Fehr & Peers, June 5, 2012). (The ITE report does not have separate peak parking demand rates for visitor parking.) Table V.B-20 compares the peak demand rates from these sources. The City's required visitor parking supply rate (0.5 per unit) is higher than the peak observed visitor demand of 0.25 per unit from the three sources. As shown in the table, the visitor spaces provided at the proposed project would be considered sufficient based on the projected demand. The project would provide, on average, 34 more spaces than the recommended supply based on the observed demand rates.

Shared Parking Demand

The commercial uses, affordable senior apartments, assisted living center, and residential visitors would share the 58 on-street and 298 surface parking spaces, or a total of 356 spaces. In addition, there are 40 parking spaces proposed to be reserved for residents, employees, and visitors at the assisted living center that could also be shared with other uses.

on the survey results weekday peak average parking demand for the Sunrise facilities is 0.43 parking spaces per occupied bed, with a range between 0.50 and 0.34 parking spaces per room.

TABLE V.B-19: PEAK PARKING DEMAND RATES AND RECOMMENDED PARKING SUPPLY FOR ASSISTED LIVING FACILITIES

Source	Location	Size	Peak Parking Demand Rate [a]	Peak Project Demand (152 units)	Recommended Project Supply [b]	Surplus/Deficit (based on 83 space supply)
ITE – Congregate Care	National	Varies	0.40	61	64	+19
ITE – Assisted Living	National	Varies	0.30	46	48	+35
Palo Alto Commons	Palo Alto	117 units	0.54	82	86	-3
Sunrise Assisted Living Facilities	3 Bay Area Sites	Varies	0.43	65	68	15
Average	--		*0.42*	*64*	*67*	*+16*

Notes:
[a] Spaces per dwelling unit. This includes parking due to employees, residents, and visitors during the peak time of the day, which typically occurs during the mid-day shift change.
[b] Includes a five percent factor to account for some inefficiency in finding available parking and turnover of vehicles.
Source: Fehr & Peers, 2013

TABLE V.B-20: PEAK PARKING DEMAND AND SUPPLY COMPARISON FOR RESIDENTIAL VISITORS/GUESTS

Source	Location	Peak Visitor Parking Demand Rate [a]	Peak Project Demand (262 units)	Recommended Project Supply [b]	Surplus/Deficit (based on 83 space supply)
ULI	National	0.15	39	41	+43
Miramar [c]	Foster City	0.25	66	69	+14
Metropolitan [c]	San Mateo	0.14	37	39	+44
Average	--	*0.18*	*47*	*49*	*+34*

Notes:
[a] Spaces per dwelling unit.
[b] Accounts for a five percent efficiency factor for some inefficiency in finding available parking and turnover of vehicles.
[c] Based on available guest spaces.
Source: Fehr & Peers, 2012; Respective property managers at Miramar and Metropolitan, 2012

Different land uses generate parking at different rates and have peak parking demands that occur at different times of the day, days of the week, and months of the year. ULI *Shared Parking* (3rd Edition) provides parking information for an assortment of land uses to help determine the appropriate parking supply to adequately serve mixed-use projects. The parking demand for commercial and residential land uses have different peak times; therefore, combinations of these land uses need a smaller total parking supply than the supply for each individual land use added together.

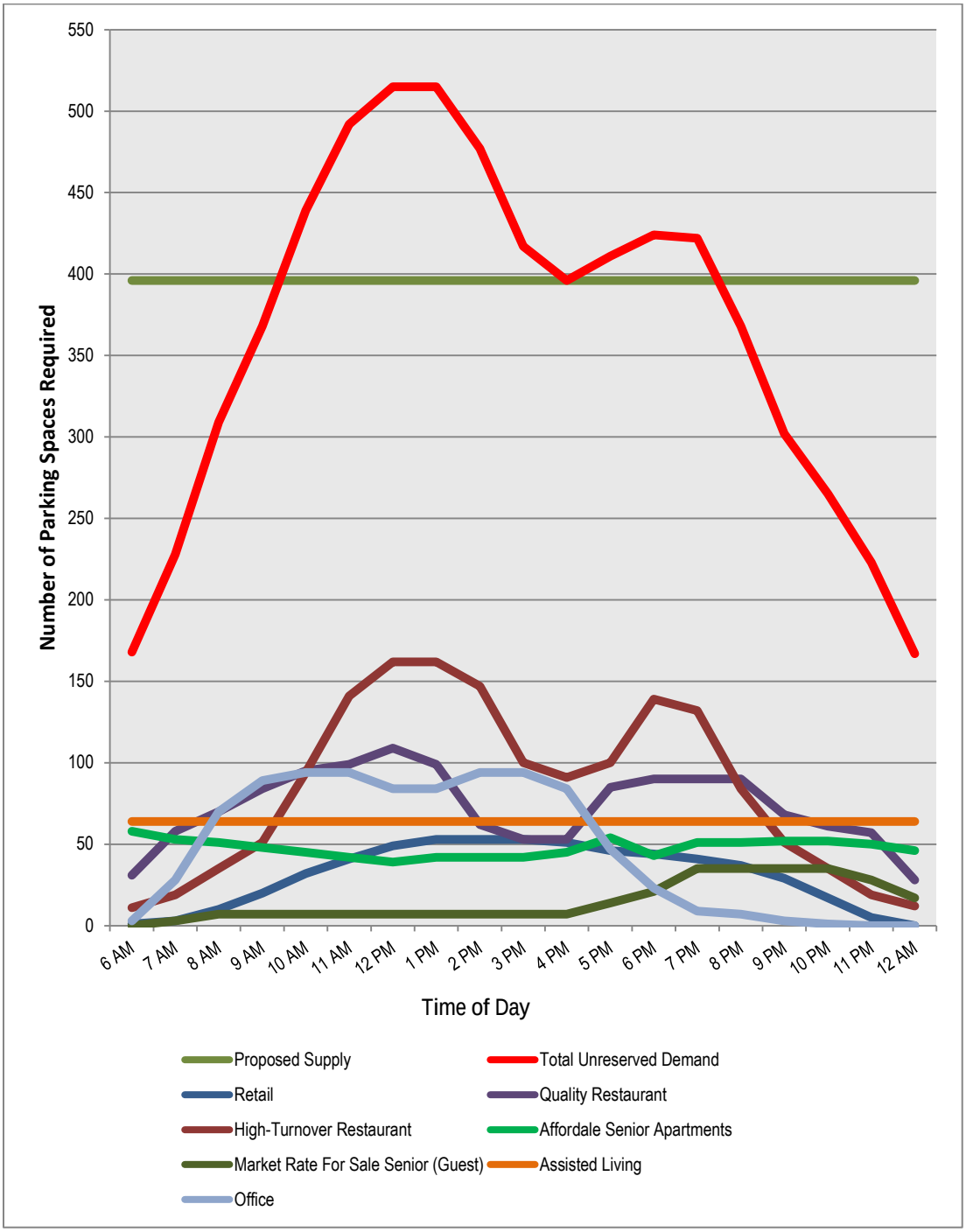
Peak parking demand rates and ULI time of day factors were used to estimate the hourly demands for each use and the overall peak demand for all the uses combined. Time of day factors are not available for the assisted living units so a constant demand was assumed as a conservative measure (the peak demand for these uses typically occurs during the middle of the day). The hourly commercial parking demands were reduced by 10 percent to account for internalization of trips, trip chaining between land uses (or combining multiple stops into one trip, such as retail stores and restaurants), and the use of non-auto modes to access the site.

Table V.B-21 presents the temporal distribution of the shared/unreserved parking demand for a typical weekday and Table V.B-22 summarizes the shared parking demand at peak times. On a typical weekday, the projected demand would exceed the proposed parking supply for the unreserved or sharable spaces during the mid-day and evening peaks by 118 and 28 parked vehicles, respectively. During the weekend mid-day, the peak parking demand of 439 at 12 PM would exceed the proposed supply by 83 spaces. Although projected demand would exceed proposed supply for the unreserved or shareable spaces at certain peak times, due to the unique nature of this project (as a senior housing/mixed-use development with on-site amenities), and the anticipated reduction in automobile transportation that would result, as well as the findings in this EIR of less-than-significant impacts to traffic and air quality during the project's operation, the proposed project's impacts to parking would not be considered significant.

Reduced Commercial Alternative

The shared parking demand for a reduced commercial alternative, with a total of 30,000 square feet of commercial space, was evaluated. With this alternative, the peak parking demand would be more in line with the proposed parking supply. Table V.B-23 presents the temporal distribution of the shared parking demand for a typical weekday, and Table V.B-24 summarizes the land uses and shared parking demand at peak times. On a typical weekday, the supply would exceed the projected demand during the mid-day and evening peaks by 46 and 64 parked vehicles, respectively. During the weekday mid-day, the peak parking demand of 338 at 12 PM would be 18 spaces lower than the supply. Although the proposed parking supply would accommodate the demand, this alternative would require a parking variance as it would not meet the City of Foster City's municipal parking code.

TABLE V.B-21: PROPOSED PROJECT WEEKDAY SHARED PARKING PROJECTIONS



Source: Fehr & Peers, 2013

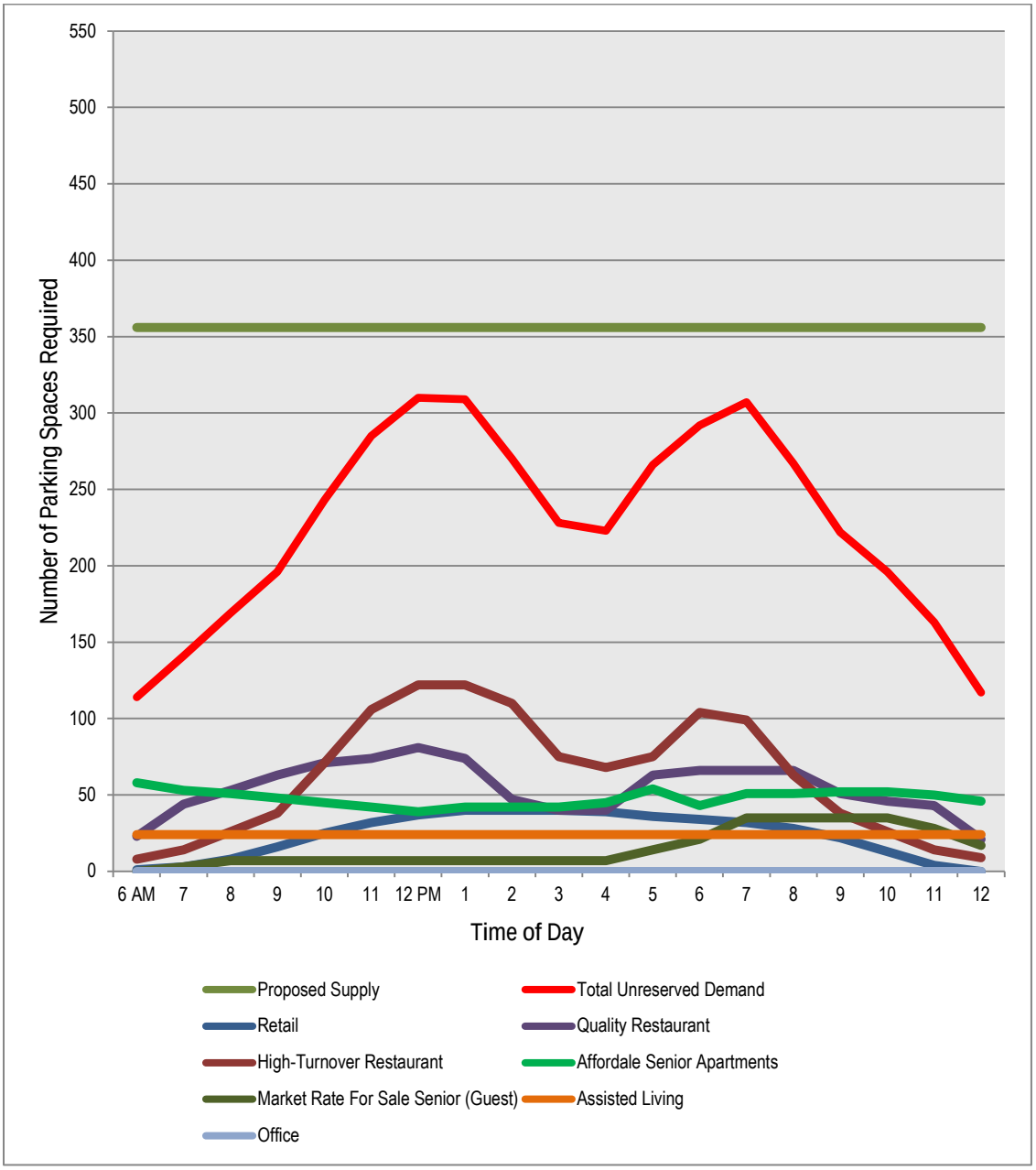
TABLE V.B-22: SHARED PARKING DEMAND ESTIMATE AND SUPPLY COMPARISON

Land Use	Size	Shared Parking Demand Estimate		
		Weekday at 12:00 PM	Weekday at 6:00 PM	Weekend at 12:00 PM
Market Rate Senior Guests	196 units	7	21	7
Affordable Senior Apartments (Residents and Guests)	66 units	39	43	39
Assisted & Independent Living Apartments (Employees, Residents, and Guests)	152 units	24	24	24
Office (Employees and Visitors)	30 k.s.f.	84	23	9
Neighborhood Retail (Employees and Customers)	16.4 k.s.f.	49	44	52
High-Turnover Restaurant (Employees and Customers)	12 k.s.f.	162	139	152
Quality Restaurant (Employees and Customers)	11.6 k.s.f.	109	90	156
Total Shared Parking Demand	--	*474*	*384*	439
Parking Supply	--	356	356	356
Parking Surplus/Deficit for Shared Spaces	--	*-118*	*-28*	*-83*

Notes: k.s.f = 1,000 square feet

Source: *Urban Land Institute Shared Parking, 3rd Edition*, Fehr & Peers, February 2013.

TABLE V.B-23: REDUCED COMMERCIAL ALTERNATIVE SHARED PARKING PROJECTIONS (WEEKDAY)



Source: Fehr & Peers, 2013

TABLE V.B-24: SHARED PARKING DEMAND ESTIMATE AND SUPPLY COMPARISON – REDUCED COMMERCIAL ALTERNATIVE

Building Type	Amount	Shared Parking Demand Estimate		
		Weekday at 12:00 PM	Weekday at 6:00 PM	Weekend at 12:00 PM
Market Rate Senior Guest Spaces [b]	196 units	7	21	7
Affordable Senior Apartments (Resident and Guest) [c]	66 units	39	43	39
Assisted & Independent Living Apartments [d]	152 units	24	24	24
Office	0 k.s.f.	-	-	-
Neighborhood Retail	12.3 k.s.f.	37	34	39
High-Turnover Restaurant	8.6 k.s.f.	122	104	113
Quality Restaurant	9.0 k.s.f.	81	66	116
Total Shared Parking Demand	--	310	292	338
Parking Supply [e]	--	356	356	356
Parking Surplus/Deficit for Shared Spaces	--	+46	+64	+18

Notes: k.s.f = 1,000 square feet

Source: *Urban Land Institute Shared Parking, 3rd Edition*, Fehr & Peers, March 2013.

(2) Balclutha Drive and Wornick Jewish Day School Circulation

Balclutha Drive runs along the southern edge of the project site. It is currently one-way (westbound) between the roundabout in front of the NPJC and Shell Boulevard. The City of Foster City is considering converting the one-way portion to two-way traffic as a potential variant to the project.

Balclutha Drive is currently used by visitors and members of the NPJC and for pick-up/drop-off activities at the Wornick Jewish Day School. A one-way eastbound south service road provides parallel access ("south service road"). To determine the effects of converting the one-way portion to two-way operations, daily and hourly vehicle counts were collected on Balclutha Drive and the south service road and drop-off and pick-up activities at Day School were observed. Balclutha Drive, the south service road, and the surrounding land uses are shown in Figure V.B-14.

Data Collection

The vehicle counts and observations are discussed below.

Twenty-four hour counts were collected on Tuesday, January 29 and Wednesday, January 30, 2013, when the school was in session on a regular schedule. The averaged results of the counts in 15-minute increments are shown in Table V.B-25. Peak times for traffic occur during the morning (8:15-

9:15 a.m.), mid-day (12:45-1:45 p.m.), afternoon (3:15-4:00 p.m.), evening (4:45-5:45 p.m.), and late evening (6:45-7:45 p.m.) periods. Generally, the evening peak-hour traffic is generated by the NPJC while the morning, mid-day, and afternoon peak-hour traffic volumes are associated with pick-up and drop-off activity at the school. Pick-up activity at the school continues into the evening on a smaller scale for after-school programs. Table V.B-26 presents the daily and peak hour volumes of traffic on both of the streets.

Student pick-up and drop-off for the Wornick Jewish Day School occurs along the south service road, in the parking lot near Shell Boulevard, and on Balclutha Drive. Most vehicles enter the south service road from Foster City Boulevard, drop-off/pick-up students along the drive aisle or in the parking lot, and then exit to Shell Boulevard via a right-turn only driveway. In addition, some drop-off and pick-up activities occur on Balclutha Drive. Per conversations with school staff, preschool students are typically dropped-off along the south service road, elementary school students are dropped-off in the parking lot, and middle school students are dropped-off along Balclutha Drive. Pick-up occurs at the same locations.

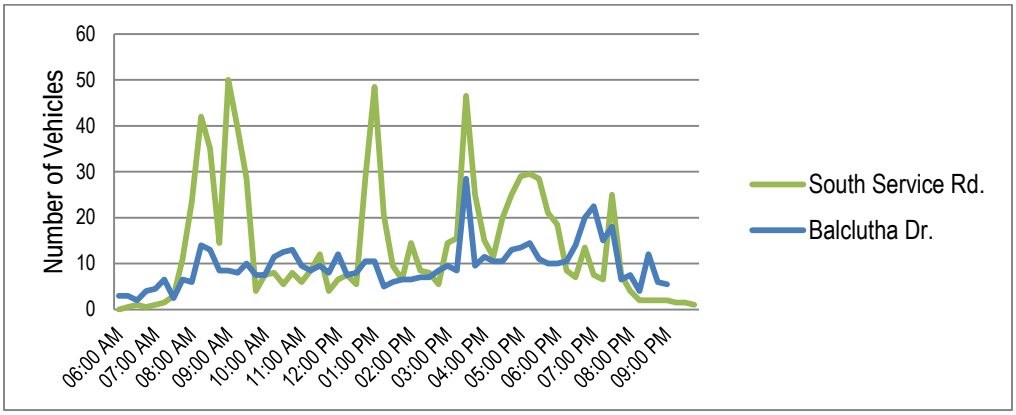
There is a combination of short- (15-minute) and long-term (unrestricted) parking spaces at the pick-up and drop-off locations as shown on Figure V.B-14. The school's main parking lot near Shell Boulevard has 62 parking spaces. This parking is used by a combination of school staff and parents. The south service road has 78 parking spaces, including eight 15-minute parking spaces west of the preschool entrance. The parking spaces along the drive aisle to the west of the preschool entrance are used primarily for student drop-off. The parking spaces to the east of the preschool entrance are used by school staff, parents, and visitors to the NPJC. Balclutha Drive has 14 parking spaces adjacent to the middle school entrance, including 15-minute parking spaces on the south side of the street.

School start times in the morning are staggered with the elementary and middle schools starting at 8:30 a.m. and the preschool starting at 9:00 and 9:15 a.m. The staggered start times lead to several waves of arriving vehicles. As shown in Table V.B-27, the numbers of vehicles exiting the south service road during the first and second waves are similar. During the first wave from 8:10 to 8:35 a.m., parents either pull into a parking space in the main parking lot or wait in line and drop-off their student near the main entrance. When parking spaces are not easily available, queues develop as parents then line up to drop-off their students. During the first wave, a maximum queue of five vehicles was observed in the main parking lot. On Balclutha Drive, a few parents park in the 15-minute spaces to drop-off their

Source: Fehr & Peers, 2013

Figure V.B-14
The 15 Acres
Balclutha Drive and Wornick Jewish Day School Circulation

TABLE V.B-25: AVERAGE 15-MINUTE TRAFFIC VOLUMES



Source: Fehr & Peers, 2013

TABLE V.B-26 PEAK-HOUR TRAFFIC VOLUMES

Peak Period	Time	Balclutha Drive [a]	South Service Road [a]
AM	8:15-9:15 a.m.	44	142
Midday	12:45-1:45 p.m.	32	107
Afternoon	3:15-4:15 p.m.	58	102
PM	4:45-5:45 p.m.	52	112
Late PM	6:45-7:45 p.m.	76	53

[a] The average of traffic counts collected on two consecutive mid-week days in January 2013.

Source: Fehr & Peers, February 2013.

students. However, most parents just drop-off their students without parking. Queues in the main lot and on Balclutha Drive were contained within the designated drop-off areas. During the second wave from 8:50 to 9:15 a.m., most of the parking spaces are full along the south service road aisle so queues form as parents stop in the middle of the drive aisle to drop-off students. Queues during the second wave were observed to extend from the preschool entrance to the NPJC parking lot. No queues occurred in the main parking lot or on Balclutha Drive during the second wave. A parking lot attendant assists parents with the student drop-off and helps direct traffic in the main parking lot during the first wave and on the south service road in front of the preschool entrance during the second wave.

School dismisses around 3:30 p.m., with a majority of student pick-up activity occurring at this time. Parents start arriving to pick-up students around 3:15 p.m. The maximum vehicle queue of 15 vehicles was observed at both the main parking lot and on Balclutha Drive at 3:25 p.m. The vehicle queue extends out of the parking lot and into the private aisle. On Balclutha

TABLE V.B-27 MORNING 15-MINUTE COUNTS

Time	Balclutha Drive [a]	South Service Road [a]
8:00 a.m.	6	24
8:15 a.m.	14	42
8:30 a.m.	13	35
8:45 a.m.	9	15
9:00 a.m.	9	50
9:15 a.m.	8	40
9:30 a.m.	10	29
9:45 a.m.	8	4

[a] The average of traffic counts collected on two consecutive mid-week days in January 2013.
Source: Fehr & Peers, February 2013.

Drive, the vehicle queue extends to the raised pedestrian crossing between the Day School and the NPJC. At 3:30 p.m., students are escorted to their parents' cars by school staff. At 3:35 p.m., queues were less than five vehicles at all locations and were contained within the designated pick-up areas.

Two-Way Balclutha Drive Assessment

Balclutha Drive currently ranges from 20 feet wide at the mid-block raised pedestrian crosswalk to 36 feet wide where parking is provided on both sides. The street is wide enough to accommodate two-way traffic operations with the provision of two 10-foot travel lanes. On-street parking would not be affected by the conversion to two-way traffic. The intersection of Shell Boulevard/Balclutha Drive is currently wide enough to accommodate right-turn traffic from Shell Boulevard. Vehicles currently travel down the middle of the road at speeds exceeding the posted speed limit of 15 mph, most likely due to the single wide travel lane. Two-way operations would slow travel speeds by narrowing the travel lanes.

A sensitivity test was conducted to determine the effects to traffic operations with the conversion of one-way to two-way traffic. The intersection of Balclutha Drive and Shell Boulevard is limited to right-turns only because of the raised median on Shell Boulevard. Right-turn only intersections have few conflicting movements so the two-way operation will likely have no negative effect on its operations. The two-way operation could add traffic to the signalized intersection of Balclutha Drive and Foster City Boulevard.

To estimate traffic at this intersection with a two-way Balclutha Drive, three types of trips were considered: trips generated by the proposed project using Balclutha Drive, new traffic using Balclutha Drive to travel between Shell Boulevard and Foster City Boulevard, and existing traffic to the Wornick Jewish Day School and NPJC traveling on eastbound Balclutha Drive. Vehicle trips generated by the proposed project may shift to Balclutha Drive from Central Street; however, the number of vehicles using eastbound Balclutha Drive would be low and the number of trips at the signalized intersection of Foster City Boulevard / Balclutha Drive would remain the same. New traffic using Balclutha Drive is likely to be negligible due to the slow design speed of the street and existing parallel routes (East Hillsdale Boulevard and Bounty Drive). Existing traffic to the Wornick Jewish Day School and NPJC could potentially enter from Shell Boulevard (rather than Foster City Boulevard) or use Balclutha Drive to circle back to Foster City Boulevard after dropping off students at the Wornick Day School.

For the purpose of the sensitivity test, all vehicles that currently exit the south service road during the AM and PM peak hours were assumed to circle back on Balclutha Drive to Foster City Boulevard. Although it is unlikely that all vehicles would follow this traffic pattern, this assumption provides a conservative traffic estimate for this sensitivity test. Per the traffic counts shown in Table V.B-26, this would result in 142 new vehicles during the AM peak hour and 112 new vehicles during the PM peak hour on the eastbound approach of Balclutha Drive at Foster City Boulevard. As shown in Table V.B-28, Foster City Boulevard and Balclutha Drive would continue to operate at LOS B under Cumulative Plus Project conditions with the two-way Balclutha Drive in place.

Balclutha Two-Way Conclusion

The existing geometry on Balclutha Drive would support two-way traffic operations. Currently, fewer than 100 vehicles use Balclutha Drive during the roadway peak hours. Peak times for traffic are associated with drop-off/pick-up activities at the Wornick Jewish Day School. The conversion of Balclutha Drive to two-way operations would increase traffic at the intersection of Foster City Boulevard/Balclutha Drive, however this increase is not expected to increase delay substantially or worsen operations beyond LOS B.

Vehicle queues currently extend approximately 350 feet from the beginning of the designated15-minute parking area to the raised pedestrian crosswalk on Balclutha Drive during the afternoon student pick-up time. With two-way operation, a 350-foot queue would extend from the school entrance onto

TABLE V.B-28 BALCLUTHA DRIVE INTERSECTION LOS RESULTS (CUMULATIVE PLUS PROJECT CONDITIONS)

Intersection	Control	Peak Hour	One-Way Balclutha Drive		Two-Way Balclutha Drive	
			Delay[a]	LOS	Delay[a]	LOS
22. Foster City Boulevard and Balclutha Drive	Signal	AM	13	B	16	B
		PM	14	B	16	B

[a] For signalized and (AWS) all-way stop controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop (SSS) controlled intersection, the delay shown is the worst-operating approach delay.
Source: Fehr & Peers, February 2013.

Shell Boulevard. While this is a traffic operational consideration, it does not rise to the level of a CEQA impact.

There are several operational measures that could be implemented to reduce the queue including: (1) providing additional parking attendants to facilitate student pick-up maneuvers, (2) reassigning student pick-up to the main parking lot, or (3) increasing the staggering of the school schedule. If the pick-up activities are reassigned to the main parking lot, the vehicle congestion in the lot would likely worsen during the first morning drop-off wave (when the most activity occurs on Balclutha Drive) and during the afternoon student pick-up period. However, the resulting queues would not extend beyond the main parking lot in the morning or the south service road in the afternoon. Therefore, shifting the student drop-off and pick-up activities from Balclutha Drive would not affect traffic operations on adjacent streets.

C. AIR QUALITY

This section evaluates the potential air quality impacts of the proposed project. The analysis considers both operational and construction effects. The primary focus of the air quality analysis is to evaluate future project-related emissions on regional air quality as well as existing sources of air pollution near the project that could affect the new sensitive receptors. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

1. Setting

The following discussion provides an overview of existing air quality conditions in the Foster City area. Ambient standards and the regulation framework relating to air quality are described.

a. Local Climate

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population.

Foster City is located in the San Francisco Bay Area Air Basin, which includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County. The local air quality regulatory agency responsible for this basin is the BAAQMD.

The climate of Foster City is characterized by warm dry summers and cool moist winters. The proximity of the San Francisco Bay and Pacific Ocean has a moderating influence on the climate. Foster City lies in the peninsula climatological subregion of the Bay Area Air Basin. The peninsula region extends from northwest of San Jose to the Golden Gate. Cities in the southeastern peninsula experience warmer temperatures and fewer foggy days than

[1] Bay Area Air Quality Management District, 2011. *BAAQMD CEQA Air Quality Guidelines*. May.

coastal towns to the north and west because the marine layer is blocked by the Santa Cruz Mountains running up the center of the peninsula. However, the Crystal Springs Gap, between Half Moon Bay and San Carlos, permits maritime air to pass across the mountains and provide a cooling effect from San Mateo to Foster City.

The major large-scale weather feature controlling the area's climate is a large high pressure system located in the eastern Pacific Ocean, known as the Pacific High. The strength and position of the Pacific High varies seasonally. It is strongest during summer and located off the west coast of the United States. Large-scale atmospheric subsidence associated with the Pacific High produces an elevated temperature inversion along the West Coast. The base of this inversion is usually located from 1,000 to 3,000 feet above mean sea level, depending on the intensity of subsidence and the prevailing weather condition. Vertical mixing is often limited to the base of the inversion, trapping air pollutants in the lower atmosphere. Marine air trapped below the base of the inversion is often condensed into fog or stratus clouds by the cool Pacific Ocean. This condition is typical of the warmer months of the year from roughly May through October. Stratus clouds usually form offshore and move into the Bay Area during the evening hours. As the land warms the following morning, the clouds often dissipate, except along the immediate coast. The stratus then redevelops and moves inland late in the day along with an increase in winds. Otherwise, clear skies and dry conditions prevail during summer.

As winter approaches, the Pacific High becomes weaker and shifts south, allowing weather systems associated with the polar jet stream to affect the region. Low-pressure systems produce periods of cloudiness, strong shifting winds, and precipitation. The number of days with precipitation can vary greatly from year-to-year, resulting in a wide range of annual precipitation totals. Precipitation is generally lowest along the Bay with much higher amounts occurring along south- and west-facing slopes. About 90 percent of rainfall occurs from November through April. High-pressure systems are also common in winter and can produce cool stagnant conditions. Radiation fog and haze are common during extended winter periods where high-pressure systems influence the weather.

The proximity of the eastern Pacific High and relatively lower pressure inland produces a prevailing westerly sea breeze along the central and northern California coast for most of the year. As this wind is channeled through the Golden Gate and other topographical gaps such as the Crystal Springs Gap, it branches off to the northeast and southeast, following the general orientation of the San Francisco Bay system. The prevailing wind is primarily from

the northwest, especially during spring and summer. In winter, winds become variable with more of a southeasterly orientation. Nocturnal winds and land breezes during the colder months of the year prevail with variable drainage out of the mountainous areas. Wind speeds are highest during the spring and early summer and lightest in fall. Winter storms bring relatively short episodes of strong southerly winds.

Temperatures in Foster City tend to be less extreme compared to inland locations due to the moderating effect of the Pacific Ocean and the Bay. In summer, high temperatures are generally in the high 70s and low temperatures during the winter months are in the low 40s.

b. Existing Air Quality Conditions

(1) Criteria Air Pollutants and Effect

Air quality studies generally focus on five pollutants that are most commonly measured and regulated: carbon monoxide (CO), ground level ozone (0_3) formed through reactions of nitrogen oxides and reactive organic gases, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter, i.e., PM_{10} and $PM_{2.5}$. In the Bay Area, ozone and particulate matter are the pollutants of greatest concern since measured air pollutant levels exceed these concentrations at times.

Ozone

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Short-term ozone exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. Sensitivity to ozone varies among individuals, but about 20 percent of the population is sensitive to ozone, with exercising children being particularly vulnerable. Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NOx) and reactive organic gases (ROG). NOx and ROG are emitted from a variety of stationary and mobile sources. U.S. Environmental Protection Agency (U.S. EPA) recently established a new more stringent standard of 0.75 ppm for 8-hour exposures, based on a review of the latest new scientific evidence.

PM10 and PM2.5

Particulate matter pollution consists of very small particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gaseous pollutant undergo chemical reactions in the atmosphere. Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) represent fractions of particulate matter. PM_{10} refers to particulate matter less than 10 microns in diameter and $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter. Major sources of $PM_{2.5}$ results primarily from diesel fuel combustion (from motor vehicles, power generation, industrial facilities), residential fireplaces, and wood stoves. PM_{10} include all $PM_{2.5}$ sources as well as emissions from dust generated by construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions. PM_{10} and $PM_{2.5}$ pose a greater health risk than larger-size particles because these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract, increasing the number and severity of asthma attacks, causing or aggravating bronchitis and other lung diseases, and reducing the body's ability to fight infections. Whereas larger particles tend to collect in the upper portion of the respiratory system, $PM_{2.5}$ are miniscule and can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. The U.S. EPA recently adopted a new more stringent standard of 35 $\mu g/m^3$ for 24-hour exposures based on a review of the latest new scientific evidence. At the same time, U.S. EPA revoked the annual PM_{10} standard due to a lack of scientific evidence correlating long-term exposures of ambient PM_{10} with adverse health effects.

Carbon Monoxide

The highest carbon monoxide concentrations measured in Redwood City and the rest of the Bay Area have been well below the national and State ambient standards. Since the primary source of carbon monoxide in is automobiles, highest concentrations would be found near congested roadways that carry large volumes of traffic. Carbon monoxide emitted from a vehicle is highest near the origin of a trip and considerably lower when vehicles are operating in a hot-stabilized mode (usually 5 to 10 minutes into a trip). However, this is different for vehicles of different ages, where older cars require a longer time to reach a hot-stabilized running mode. A vehicle sitting idle for over an hour is normally considered to return to a cold start mode. Vehicles near the origin of a trip are considered to be in Cold-Start mode. Vehicle operation on freeways is usually in a hot-stabilized mode so the individual emission rates are much lower than those encountered on arterial roadways leading to the freeway.

Nitrogen Dioxide

NO_2, a reddish-brown gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like ozone, NO_2 is not directly emitted, but is formed through a reaction between nitrogen oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NO_x) and are major contributors to ozone formation. NO_2 also contributes to the formation of PM_{10} (see discussion of PM_{10} below). Monitored levels in the Bay Area are well below ambient air quality standards.

Sulfur Oxides

Sulfur oxides, primarily SO_2, are a product of high-sulfur fuel combustion. The main sources of SO_2 are coal and oil used in power stations, in industries, and for domestic heating. SO_2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 concentrations have been reduced to levels well below the State and national standards, but further reductions in emissions are needed to attain compliance with standards for PM_{10}, of which SO_2 is a contributor.

(2) Toxic Air Contaminants (TAC)

Toxic air contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality, usually because they cause cancer. They include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and can be caused by industry, agriculture, fuel combustion, and commercial operations. TACs are typically found in low concentrations, even near their source; for example, while diesel particulate matter and benzene may be present near a freeway, the concentration of these materials in the air is typically low. However, chronic exposure to these low levels can result in adverse health effects. As a result, TACs are regulated at the regional, State, and federal level.

BAAQMD initiated its Community Air Risk Evaluation (CARE) program in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from: point sources; area sources; on-road mobile sources, such as cars and trucks; and off-road mobile sources, such as construction equipment, trains, and aircraft. The CARE program focuses on Diesel Particulate Matter (DPM) emissions, which is the major contributor to airborne health risk in California. Its goal is to identify areas with high emissions of TACs that have sensitive populations nearby, then reduce exposure to TACs through new regulations, incentive funding, and other programs.

In Phase I of the program, a 2-kilometer by 2-kilometer gridded inventory of TAC emissions was developed for the year 2000. The data were then updated to include 2005 emission data. This emissions inventory was risk-weighted to reflect the differences in potency of the various TACs. For example, benzene has far higher cancer potency than many other compounds, such as methyl tertiary buytl ether (MTBE). In contrast, while DPM is not as potent as benzene, DPM emissions are much more prevalent. The Phase I study identifies diesel emissions from heavy-duty trucks as a major source of TAC emissions and identifies programs available to reduce these emissions.

In Phase II of the CARE program, BAAQMD is performing regional and local-scale modeling to determine the significant sources of DPM and other TAC emissions locally in priority communities, as well as for the entire Bay Area. The BAAQMD has partnered with California Air Resources Board (CARB), the Port of Oakland, the Pacific Institute, the West Oakland Environmental Indicators Project, and major railroads to prepare specific health risk assessments.

One highlight of the CARE program is the development of a Mitigation Action Plan, in which risk reduction activities are focused on the most at-risk communities. This plan identified six different at-risk communities that would benefit from targeted mitigation, based on TAC emissions and presence of sensitive land uses. Foster City is not located in any of these at-risk communities.

In Phase III, BAAQMD plans to conduct an extensive exposure assessment to identify and rank the communities as to their potential TAC exposures and determine the types of activities that place the communities at highest risk. BAAQMD will also pursue additional mitigations and attempt to develop a metric to measure the effectiveness of these efforts. The new BAAQMD CEQA Guidelines included new significance thresholds for community risk and hazards that originated from this process. These new thresholds address both project (i.e., single-source) and cumulative exposures.

Smoke from residential wood combustion can also be a source of TACs. Wood smoke is typically emitted during wintertime when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind, the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

(3) Air Monitoring Data

Air quality in the region is controlled by the rate of pollutant emissions and meteorological conditions. Meteorological conditions such as wind speed, atmospheric stability, and mixing height may all affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while frequent, short-term variations result from changes in atmospheric conditions. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at more than 30 locations throughout the Bay Area. The closest monitoring station to the project is in Redwood City. Summarized air pollutant data for this station is shown in Table V.C-1. This table shows the highest air pollutant concentrations measured at the stations.

(4) Attainment Status

As indicated in Table V.C-1 below, the U.S. EPA's National Ambient Air Quality Standards (NAAQS) and the California Environmental Protection Agency's California Ambient Air Quality Standards (CAAQS) for 1- and 8-hour ozone for the area were exceeded on two days over the last three years, based on readings taken at the Redwood City monitoring station. The NAAQS for $PM_{2.5}$ was exceeded once in 2010, and once in 2011. Continuous monitoring for PM_{10} in Redwood City was discontinued in 2008. The highest carbon monoxide concentrations measured in Redwood City have been well below the national and State ambient standards. However, since automobile emissions are the primary source of carbon monoxide, the highest concentrations would typically be found away from monitoring stations, near congested roadways that carry large volumes of traffic. These are referred to as "hot spots." Other criteria pollutants, such as nitrogen dioxide, sulfur dioxide, and lead, are typically found at low levels. These pollutants should not pose a major air pollution concern in Foster City. As shown in Table V.C-2, the Bay Area as a whole exceeded the NAAQS for ozone on 4 to 9 days per year over the last three years. The CAAQS for ozone was exceeded on 10 to 13 days per year. The NAAQS for $PM_{2.5}$ is exceeded about 42 to 66 days per year (based on measurements made every 6^{th} day). The NAAQS for PM_{10} or other pollutants are not exceeded. However, the CAAQS for PM_{10} is exceeded several times per year. PM_{10} monitoring throughout the Bay Area is limited to about 7 to 8 stations.

TABLE V.C-1 HIGHEST MEASURED AIR POLLUTANT CONCENTRATIONS

Pollutant	Average Time	Measured Air Pollutant Levels				
		2007	2008	2009	2010	2011
Redwood City						
Ozone (O_3)	1-Hour	0.08 ppm	0.08 ppm	0.09 ppm	0.11 ppm	0.08 ppm
	8-Hour	0.07 ppm	0.069 ppm	0.063 ppm	0.077 ppm	0.061 ppm
Carbon Monoxide (CO)	8-Hour	2.3 ppm	1.9 ppm	1.8 ppm	1.7 ppm	1.7 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.06 ppm	0.07 ppm	0.06 ppm	0.05 ppm	0.06 ppm
	Annual	0.013 ppm	0.014 ppm	0.012 ppm	0.012 pm	0.012 ppm
Respirable Particulate Matter (PM_{10})	24-Hour	56 ug/m^3	--	--	--	44 ug/m^3
	Annual	20 ug/m^3	--	--	--	19 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	45 ug/m^3	28 ug/m^3	32 ug/m^3	37 ug/m^3	51 ug/m^3
	Annual	8 ug/m^3	9 ug/m^3	9 ug/m^3	8 ug/m^3	10 ug/m^3
Bay Area (Basin Summary)						
Ozone (O_3)	1-Hour	0.12 ppm	0.12 ppm	0.11 ppm	0.13 ppm	0.12 ppm
	8-Hour	0.09 ppm	0.11 ppm	0.094 ppm	0.09 ppm	0.084 ppm
Carbon Monoxide (CO)	8-Hour	2.7 ppm	2.5 ppm	2.9 ppm	2.2 ppm	2.7 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.07 ppm	0.08 ppm	0.06 ppm	0.09 ppm	0.09 ppm
	Annual	0.017 ppm	0.017 ppm	0.016 ppm	0.016 ppm	0.016 ppm
Respirable Particulate Matter (PM_{10})	1-Hour	78 ug/m^3	77 ug/m^3	55 ug/m^3	70 ug/m^3	73 ug/m^3
	Annual	26 ug/m^3	24 ug/m^3	20 ug/m^3	21 ug/m^3	20 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	58 ug/m^3	60 ug/m^3	46 ug/m^3	47 ug/m^3	54 ug/m^3
	Annual	11 ug/m^3	12 ug/m^3	10 ug/m^3	11 ug/m^3	10 ug/m^3

Notes: ppm = parts per million and ug/m^3 = micrograms per cubic meter
Values reported in bold exceed ambient air quality standard
NA = data not available.

Source: BAAQMD Air Quality Summaries for 2007, 2007, 2009, 2010, and 2011.

Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard. The Bay Area as a whole does not meet State or federal ambient air quality standards for ground level ozone and $PM_{2.5}$, nor does the Bay Area meet State standards for PM_{10}. These nonattainment issues are discussed further below.

The EPA administers the NAAQS under the Federal Clean Air Act. EPA sets the NAAQS and determines if areas meet those standards. EPA has classified the region as a nonattainment area for the 8-hour O_3 standard and the 24-hour $PM_{2.5}$ standard. The Bay Area has met the CO standards for over a decade

TABLE V.C-2 ANNUAL NUMBER OF DAYS EXCEEDING AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard	Monitoring Station	Days Exceeding Standard				
			2007	2008	2009	2010	2011
Ozone (O_3)	NAAQS 8-hr	Redwood City	0	0	0	1	0
		Bay Area	1	12	8	9	4
	CAAQS 1-hr	Redwood City	0	0	0	2	0
		Bay Area	4	9	11	8	5
	CAAQS 8-hr	Redwood City	0	0	0	1	0
		Bay Area	9	20	13	11	10
Respirable Particulate Matter (PM_{10})	CAAQS 24-hr	Redwood City	1	1	0	--	0
		Bay Area	4	5	1	2	3
	NAAQS 24-hr	Redwood City	0	0	0	0	0
		Bay Area	0	0	0	0	0
Fine Particulate Matter ($PM_{2.5}$)	NAAQS 24-hr	Redwood City	1	0	0	1	1
		Bay Area	14	12	11	6	8
All Other (CO, NO_2, Lead, SO_2)	NAAQS or CAAQS	Redwood City	0	0	0	0	0
		Bay Area	0	0	0	0	0

Notes: X = Standard revoked in 2004.
NA = data not available.
Source: Illingworth & Rodkin, Inc., 2013.

and is classified as an attainment maintenance area by the U.S. EPA. The U.S. EPA grades the region as unclassified for all other air pollutants, which include PM_{10}. At the State level, the Bay Area is considered nonattainment for ozone, PM_{10} and $PM_{2.5}$.

(1) Sensitive Receptors

Certain groups of people more affected by air pollution than others. CARB has identified the following who are most likely to be affected by poor air quality: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The project site is adjacent to two schools and a community center. Residential areas are located nearby to the northeast, east and west. The proposed project would include senior housing, including housing for the elderly over 65 years of age.

c. Regulatory Setting

The Federal Clean Air Act (CAA) is the primary federal law regulating air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the U.S. EPA administers the CAA. The California Clean Air Act is administered by the CARB at the State level and by the appropriate air quality management district at the regional and local levels. The BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area. Following is a discussion of regulation programs and policies.

(1) United States Environmental Protection Agency

The U.S. EPA is responsible for enforcing the CAA. The U.S. EPA is also responsible for establishing the NAAQS, which are required under the CAA. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB.

(2) California Air Resources Board

In California, CARB, which is part of the California Environmental Protection Agency, is responsible for meeting the State requirements of the CAA, administering the California Clean Air Act (CCAA), and establishing the CAAQS. The CCAA requires all air districts in the State to endeavor to achieve and maintain CAAQS. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. CARB also conducts or supports research into the effects of air pollution on the public and develops innovative approaches to reducing air pollutant emissions.

(3) Bay Area Air Quality Management District

BAAQMD is primarily responsible for assuring that the national and State ambient air quality standards are attained and maintained in the Bay Area. BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citi-

zen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. BAAQMD has jurisdiction over much of the nine-county Bay Area.

(4) National and State Ambient Air Quality Standards

As required by the Federal Clean Air Act, NAAQS have been established for seven major air pollutants: CO, NO_x, O_3, PM_{10}, $PM_{2.5}$, sulfur oxides (SO_x), and lead. Pursuant to the CCAA, the State of California has also established ambient air quality standards. These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Both State and federal standards are summarized in Table V.C-3. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare. CAAQS are more stringent than NAAQS. Thus, CAAQS are used as the equal to or standard in this analysis.

(5) Bay Area Clean Air Plan

To protect public health, BAAQMD has adopted plans to achieve ambient air quality standards. BAAQMD must continuously monitor its progress in implementing attainment plans and must periodically report to CARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements.

In 1991, the BAAQMD, Metropolitan Transportation Commission (MTC), and Association of Bay Area Governments (ABAG) prepared the Bay Area 1991 Clean Air Plan. This air quality plan addresses the California Clean Air Act. Updates are developed approximately every three years. The plans are meant to demonstrate progress toward meeting the more stringent 1-hour ozone CAAQS. In 2010, BAAQMD adopted the Bay Area 2010 Clean Air Plan. This Clean Air Plan updates the most recent ozone plan, the 2005 Ozone Strategy. Unlike previous Bay Area Clean Air Plans, the 2010 Clean Air Plan is a multi-pollutant air quality plan addressing four categories of air pollutants:

- Ground-level ozone and the key ozone precursor pollutants (reactive organic gases and NO_x), as required by State law;
- Particulate matter, primarily $PM_{2.5}$, as well as precursors to secondary $PM_{2.5}$;
- Toxic air contaminants; and
- Greenhouse gases (GHGs).

TABLE V.C-3 AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[a]	National Standards[b]
Ozone	8-hour	0.07 ppm	0.075 ppm
	1-hour	0.09 ppm	—[c]
Carbon monoxide	8-hour	9 ppm	9 ppm
	1-hour	20 ppm	35 ppm
Nitrogen dioxide	Annual	0.03 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm [d]
Sulfur dioxide [e]	Annual	—	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	1-hour	0.25 ppm	0.075 ppm
PM_{10}	Annual	20 µg/m^3	--
	24-hour	50 µg/m^3	150 µg/m^3
$PM_{2.5}$	Annual	12 µg/m^3	15 µg/m^3
	24-hour	—	35 µg/m^3 [f]

Notes: Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.
ppm = parts per million
µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3.
Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[c] The national 1-hour ozone standard was revoked by EPA on June 15, 2005.

[d] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010).

[e] On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO_2 NAAQS.

[f] EPA lowered the 24-hour $PM_{2.5}$ standard from 65 µg/m^3 to 35 µg/m^3 in 2006. EPA designated the Bay Area as nonattainment of the $PM_{2.5}$ standard on October 8, 2009. The effective date of the designation is December 14, 2009, and the Air District has three years to develop a SIP that demonstrates the Bay Area will achieve the revised standard by December 14, 2014.

Source: CARB, 2012.

While the Clean Air Plan addresses State requirements, it also provides the basis for developing future control plans to meet federal requirements (NAAQS) for ozone and $PM_{2.5}$. The region is required to prepare (by December 2012) a federally enforceable plan to meet the NAAQS for $PM_{2.5}$. In addition, U.S. EPA will provide formal designations for O_3 under the NAAQS. These new standards will trigger new planning requirements for the Bay Area and more stringent federally enforceable control measures.

While previous Clean Air Plans have relied upon a combination of stationary and transportation control measures, the 2010 Clean Air Plan adds two new types of control measures: (1) Land Use and Local Impact Measures, and (2) Energy and Climate Measures. These types of measures would indirectly reduce air pollutant and GHG emissions through reductions in vehicle use and energy usage. In addition, the plan includes Further Study Measures, which will be evaluated as potential control measures.

The Bay Area 2010 Clean Air Plan proposes expanded implementation of transportation control measures (TCMs) and includes public outreach programs designed to educate the public about air pollution in the Bay Area and promote individual behavior changes that improve air quality. New measures in the Clean Air Plan are aimed at helping guide land use policies that would indirectly reduce air pollutant emissions. Some of these measures or programs rely on local governments for implementation. The clean air planning efforts for O_3 also will reduce PM_{10} and $PM_{2.5}$, as a substantial amount of particulate matter comes from combustion emissions such as vehicle exhaust. Conversely, strategies to reduce O_3 precursor emissions will reduce secondary formation of $PM_{2.5}$ and PM_{10}.

The Bay Area 2001 Ozone Attainment Plan was prepared to achieve the 1-hour NAAQS for ozone. Since that plan was submitted, the region was designated as a marginal nonattainment area for the 8-hour ozone NAAQS, and the 1-hour ozone NAAQS was revoked. This plan was a proposed revision to the Bay Area part of California's plan (State Implementation Plan, or SIP) to achieve the 1-hour ozone NAAQS. The plan was prepared in response to EPA's partial approval and partial disapproval of the Bay Area's 1999 Ozone Attainment Plan. This plan contains the most recent federally required control measures to reduce ozone concentrations. EPA plans to designate the Bay Area as nonattainment with respect to the new 2008 8-hour ozone NAAQS. This would require the region to develop a new Ozone Attainment Plan to meet this standard. A new plan would likely contain many of the components listed in the 2010 Clean Air Plan described above, since that plan addresses the more stringent State ozone standards.

There is no clean air plan addressing PM_{10} or $PM_{2.5}$ that is required to meet regulatory requirements. Currently, BAAQMD is developing a federally required plan to address the $PM_{2.5}$ NAAQS. In addition, the BAAQMD's 2010 Clean Air Plan addresses control of PM_{10} and $PM_{2.5}$. The clean air planning efforts for ozone will also reduce PM_{10} and $PM_{2.5}$, since a substantial amount of this air pollutant comes from combustion emissions such as vehicle exhaust. In addition, BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM_{10} and $PM_{2.5}$ emissions. One such program is the Winter Spare the Air Program, which is similar to the standard Spare the Air program but focuses on $PM_{2.5}$ emissions that result from the use of fireplaces and wood stoves.

In addition, California's Senate Bill 656 (SB 656, Sher, 2003) that amended Section 39614 of the Health and Safety Code, required further action by CARB and air districts to reduce public exposure to PM_{10} and $PM_{2.5}$. Efforts identified by BAAQMD in response to SB 656 are primarily targeting reductions in wood smoke emissions; adoption of new rules to further reduce NO_X and particulate matter from internal combustion engines; and reductions in particulate matter from commercial charbroiling activities.

(6) City of Foster City

Foster City adopted an ordinance in February of 2001 to ban installation of wood-burning fireplaces in new residential construction. The ordinance requires installation of either a wood heater or fireplace insert certified by the U.S. EPA, or a gas- or wood pellet-fueled heater in new housing construction.

2. Impacts and Mitigations

This section discusses potential impacts to air quality that could result from implementation of the project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies mitigation measures, as appropriate.

a. Criteria of Significance

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These Thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table V.C-4.

TABLE V.C-4 AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 µg/m^3		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, and $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.
Source: Illingworth & Rodkin, Inc., 2013.

BAAQMD's adoption of the thresholds was called into question by an order issued March 5, 2012, in *California Building Industry Association v. BAAQMD* (Alameda Superior Court Case No. RGI0548693). The order required BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The claims made in the case concerned the environmental impacts of adopting the thresholds, that is, how the thresholds would indirectly affect land use development patterns. Those issues are not relevant to the scientific basis of BAAQMD's analysis of what levels of pollutants should be deemed significant. This analysis considers the science informing

the thresholds as being supported by substantial evidence. Scientific information supporting the thresholds was documented in BAAQMD's proposed thresholds of significance analysis.[2] This analysis herein uses the thresholds and methodologies from BAAQMD's May 2011 CEQA Air Quality Guidelines to determine the potential impacts of the project on the existing environment.

b. Less-Than-Significant Air Quality Impacts

A discussion of less-than-significant impacts of the proposed project is provided below.

(1) CO Concentrations

Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. There is an ambient air quality monitoring station in San Jose that measures carbon monoxide concentrations. The highest measured level over any 8-hour average period during the last three years is less than 2 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[3]

(2) Criteria Air Pollutant Emissions

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM_{10}) under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide.

The California Emissions Estimator Model (CalEEMod) Version 2011.1.1 was used to predict construction and operational emissions resulting from im-

[2] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update Proposed Thresholds of Significance*. December.

[3] For a land-use project type, the BAAQMD *CEQA Air Quality Guidelines* state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

plementation of the proposed project. CalEEMod is a statewide land use emissions model developed by the South Coast Air Quality Management District (SCAQMD) with input from other California air districts. The use of this model for evaluating emissions from land use projects is recommended by the BAAQMD. The project land use types and size, and trip generation rates were input to the CalEEMod model.

Construction Period Emissions

Construction of the entire project was assumed to occur over an approximate 38-month period beginning in Spring of 2014 with completion around Summer of 2017. This period would include approximately 18 months of grading and infrastructure work, 20 months of building construction, and a small period to demolish the existing building on-site. Approximately 55,000 cubic yards of import fill would be required during grading of the project site. The model also accounted for the demolition of the approximately 5,625 square-foot building on the site. About 850 parking lot spaces are planned for construction.

The model default values were used for computing construction equipment exhaust emissions rates with the exception that load factors for equipment usage were reduced by 33 percent to be consistent with CARB's OFFROAD2010 modeling methodologies. In addition, ROG emissions from architectural coatings were adjusted from 250 grams per liter of VOC[4] to 150 grams per liter to account for BAAQMD's Regulation 8, Rule 3 that applies to the volatile organic compound content of paints and solvents sold and used in the region.

CalEEMod provided annual construction period emissions for each year. Table V.C-5 reports the average daily emissions that were computed by dividing the total construction period emissions by the number of anticipated construction days. Much of the emissions were anticipated to occur over about 855 workdays during the approximately 38-month construction period. As shown in Table V.C-5, average daily emissions of ROG, NO_X, PM_{10} exhaust, or $PM_{2.5}$ exhaust during construction would not exceed the BAAQMD significance thresholds. Details of the emission calculations are provided in Appendix C.

[4] VOC = volatile organic compounds

TABLE V.C-5 CONSTRUCTION PERIOD EMISSIONS, AVERAGE DAILY EMISSIONS (POUNDS PER DAY)

Description	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Year 1 (2014) Annual Emissions in tons	0.82	6.48	0.30	0.30
Year 2 (2015) Annual Emissions in tons	1.05	7.56	0.34	0.34
Year 3 (2016) Annual Emissions in tons	0.86	4.22	0.21	0.21
Year 4 (2017) Annual Emissions in tons	6.97	1.19	0.07	0.07
Average Daily Emissions in pounds per day*	22.7	45.5	2.2	2.2
BAAQMD Thresholds	54	54	82	54
Exceed Threshold?	*No*	*No*	*No*	*No*

*Assuming approximately 855 construction workdays.
Source: Illingworth & Rodkin, Inc., 2013.

Operational Period Emissions

The CalEEMod model along with the project vehicle trip generation rates and estimates were used to predict operational period air pollutant emissions associated with operation of a fully developed site under the proposed project. The model uses mobile emission factors from the California Air Resources Board's EMFAC2007 model and adjusts these based on the effect of new regulations to reduce air pollutant and GHG emissions. Adjustments to the modeling are described below. CalEEMod input and output worksheets are provided in Appendix C.

Year of Analysis

Emissions associated with vehicle travel depend on the year of analysis. The earlier the year, the higher the emission rates as CalEEMod uses the California Air Resources Board's EMFAC2007 motor vehicle emissions model. This model assumes reduced emission rates as newer vehicles with lower emission rates replace older, more polluting vehicles through attrition of the overall vehicle fleet. The earliest year the project could be possibly constructed and operated would be 2018. Full buildout occurring later than 2018 would result in lower emissions. Thus, the year 2018 was conservatively used for project operational emissions. This method is typical in air quality analyses under CEQA and is recommended by BAAQMD.

Land Use Descriptions

Based on CalEEMod's general land use categories, the project was categorized into six categories. The "Retirement Community" (262 dwelling units), the "Congregate Care (assisted living)" (152 dwelling units), "General Office Building" (30,000 square feet), "Strip Mall" – neighborhood retail (16,400

square feet), "High Turnover" (12,000 square feet), and "Quality Restaurant" (11,600 square feet) were input to CalEEMod.

Trip Generation Rates
CalEEMod allows the user to enter specific trip generation rates. Fehr & Peers provided the trip generation rate for the project by land use type, which was entered into the model. Pass-by and internalization trips for retail were accounted for by Fehr & Peers. These reductions were accounted for in CalEEMod.

Area Sources
One adjustment was made to the area source inputs of CalEEMod. The model assumes that portions of buildings (about 10 percent) are constantly being painted and the paints have a relatively high level of volatile organic compound content that leads to higher estimates of ROG emissions. BAAQMD regulations (Reg. 8, Rule 3) limit the VOC content to lower levels. Therefore, the model was adjusted to 150 grams per liter of VOC. The model was adjusted to assume no wood-burning stoves or fireplaces.

Other CalEEMod Inputs
Default model assumptions for energy consumption, solid waste generation and water/wastewater use were applied to the project. According to CalEEMod, the emissions from energy use (electricity, natural gas) from the Retirement Community land use is off by three decimal places, so users are recommended to make the proper adjustment (i.e., divide by 1,000) from the emissions output to obtain the proper result.[5]

Table V.C-6 reports the predicted average daily operational emissions and Table V.C-7 reports annual emissions. As shown in Tables V.C-6 and V.C-7, average daily and annual emissions of ROG, NO_X, PM_{10} exhaust, or $PM_{2.5}$ exhaust associated with operation would not exceed the BAAQMD significance thresholds. Therefore, this impact is considered less than significant.

TABLE V.C-6 DAILY AIR POLLUTANT EMISSIONS FROM OPERATION OF THE PROJECT (POUNDS/DAY)

Scenario	ROG	NO_X	PM_{10}	$PM_{2.5}$
Proposed Project	32.1	16.3	17.4	1.4
Daily Emission Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	*No*	*No*	*No*	*No*

Source: Illingworth & Rodkin, Inc., 2013.

[5] *CalEEMod User's Tips*. Tip # 24. Available online: http://www.caleemod.com. Accessed: April 4, 2013.

TABLE V.C-7 ANNUAL AIR POLLUTANT EMISSIONS FROM OPERATION OF THE PROJECT (TONS/YEAR)

Scenario	ROG	NO_X	PM_{10}	$PM_{2.5}$
Proposed Project	5.85	2.98	3.17	0.25
Annual Emission Thresholds	*10*	*10*	*15*	*10*
Exceed Threshold?	*No*	*No*	*No*	*No*

Source: Illingworth & Rodkin, Inc., 2013.

(3) Objectionable Odors

During construction, the various diesel powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and not likely to be noticeable for extended periods of time much beyond the project's site boundaries. Health risks associated with diesel emission are considered under Impact AIR-1, below. The potential for diesel odor impacts is therefore less than significant. The proposed uses that would be constructed are not expected to produce any offensive odors that would result in frequent odor complaints; therefore this would be a less-than-significant impact.

(4) Substantial Pollutant Concentrations

Operational TACs are discussed below and TACs from construction are discussed further in this section.

Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. However, the proposed project would locate new residences near local roadways with average annual daily traffic (AADT) above 10,000 vehicles per day. Proximity to major roadways with a traffic volume of at least 10,000 AADT is associated with exposure to TACs or $PM_{2.5}$. In addition, stationary sources, such as gasoline stations and dry cleaners, are a source of TACs. The BAAQMD recommends using a 1,000-foot radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs.

A review of the area indicates that the proposed project would place new senior residences near two roadways and three stationary sources that are located within 1,000 feet of the project site. The analysis of these sources used screening data provided by BAAQMD to identify the potential cancer risk and $PM_{2.5}$ exposure posed by stationary sources located within 1,000 feet of the project site.

It should be noted that health risk impacts to future residents would be considered effects of the environment on the project. These impacts need not necessarily be considered in and EIR, since the function of an EIR is to focus on project impacts to the environment. This EIR, nonetheless, conservatively provides such analysis to present a full and complete discussion of pertinent environmental concerns.

Impacts from Local Roadways

The two local roadways with the highest traffic volumes in the project vicinity and that are adjacent to the proposed project site are Foster City Boulevard and Shell Boulevard. Both roadways are projected to have cumulative plus project traffic volumes under 30,000 AADT. Using the BAAQMD screening table for local roadways,[6] the exposure from each roadway at a distance of 10 feet is below a cancer risk of 6.0 in one million, $PM_{2.5}$ concentration levels of 0.22 µg/m3 and acute or chronic Hazard Index of 0.02. Therefore, the impact would be less than significant.

Impacts from Stationary Sources

The BAAQMD's Google Earth Screening Tool also provides locations of stationary sources of TACs and screening level exposures that do not account for the distance between the project site and the source. This tool was used to identify sources within 1,000 feet of the site. This tool identified the following sources:

- Plant G2881 is a Chevron gas station located at 1101 East Hillsdale Boulevard, about 700 feet west of the project. Based on BAAQMD and adjusting the distance using BAAQMD's *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities (GDF)*, the gas station is predicted to have a cancer risk of 1.5 in one million, a hazard index of less than 0.1, and a $PM_{2.5}$ concentration of less than 0.1 $\mu g/m^3$ at the proposed project. The health risk of this facility on the project would therefore be less than significant.
- Plant 19568 is a diesel generator operated by the County of San Mateo located at the Civic Center in the Foster City Hall complex along E. Hillsdale Blvd near the project site. The exact location is not known, but it appears to be over 150 feet from the closest sensitive receptors that would be placed at the project site. Based on the BAAQMD Google Earth Screening Tool, this source would pose minimal impacts. Cancer risk would be less than 0.1 per million and $PM_{2.5}$ exposure would be less than 0.09 $\mu g/m^3$ at the proposed project site. The health risk of this facility on the project would therefore be less than significant.

[6] Bay Area Air Quality Management District (BAAQMD), *Roadway Screening Analysis Tables*, updated May, 2011.

- Plant 14273 is a diesel generator operated by the City of Foster City. The BAAQMD Google Earth Screening Tool indicates this source is located about 600 feet southwest of the project site. However, closer review indicates this source may be located within the City Hall complex, as close as 150 feet from the location where the nearest senior residences may be located. Based on the BAAQMD Google Earth Screening Tool and adjustments using the BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines*, this source would pose cancer risk impacts of 34.6 per million, which is above the BAAQMD significance level of 10.0 per million. However, the cancer risk would be less, because seniors that would reside at the site are less susceptible to cancer causing TACs and would reside for less than 70 years. The BAAQMD screening data is based on 70 year exposures that include time spent as an infant and child. The age sensitivity factor, of 1.7, is included in the BAAQMD's screening data. When removing the adjustment for age sensitivity, because infants and children would not reside at the site, and adjusting for a shorter time exposure of 30 years, the excess cancer risk would be 8.7 per million. $PM_{2.5}$ exposure would be less than 0.01 $\mu g/m^3$ at the proposed project. The health risk of this facility on the project would therefore be less than significant.

As discussed above, all impacts from stationary sources would be less than significant.

Cumulative Community Health Risk Impacts

Based on screening data described above, the combination of exposures from local roadways and the nearby stationary source would result in excess cancer risks of less than 16 per million, $PM_{2.5}$ exposures of less than 0.32 $\mu g/m^3$ and a Hazard Index well below 1.0. These exposures are well below the cumulative source thresholds that were identified by BAAQMD (100 in one million cancer risk, 0.8 $\mu g/m^3$ $PM_{2.5}$ concentration and a Hazard Index of 10.0). Thus, there would be no significant cumulative community health risk impact.

(5) Cumulative Air Quality Impacts

The significance thresholds applicable to operational aspects of the project represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the region's air quality conditions as determined by BAAQMD. That is, in developing thresholds of significance for air pollutants, BAAQMD considered the emissions levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable. As discussed in parts b.(1) CO Concentrations, b.(2) Criteria Air Pollutant Emissions, and

b.(4) Substantial Pollutant Concentrations of this section, the proposed project's operational emissions would not exceed the significance thresholds, and, therefore, cumulative impacts relative to operational emissions would be less than significant.

Impacts associated with community risk incorporate future projections of traffic conditions and existing stationary sources. As discussed above, under *Cumulative Community Risk Impacts*, the project would not result in a significant cumulative community risk because projected cancer risks, $PM_{2.5}$ exposures and the Hazard Index would all be well below the cumulative thresholds recommended by BAAQMD (100 in one millions cancer risk, 0.8 µg/m3 $PM_{2.5}$ concentration and a Hazard Index of 10.0).

c. Significant Air Quality Impacts

A discussion of significant impacts of the proposed project is provided below.

Impact AIR-1: Expose existing sensitive receptors to substantial pollutant concentrations caused by the construction of the project. (S)

Construction activity is anticipated to include demolition of the existing temporary structure, excavation, grading, building construction, paving and application of architectural coatings. During demolition, excavation, grading and some building construction activities, substantial amounts of dust could be generated. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and would be dependent on the size of the area disturbed at any given time, amount of activity, soil conditions and meteorological conditions. To address fugitive dust emissions that lead to elevated PM_{10} and $PM_{2.5}$ levels near construction sites the BAAQMD CEQA Air Quality Guidelines identify best control measures. If these control measures are imposed on the proposed project, as discussed in Mitigation Measure AIR-1, these impacts will be considered less than significant. Implementation of Mitigation Measure Air-1a would include BAAQMD standard best control measures and, thus, reduce this impact to less than significant.

In addition, construction equipment and associated heavy-duty truck traffic generates diesel exhaust (i.e., DPM) which is a TAC. BAAQMD has developed screening tables for evaluating potential impacts from toxic air contaminants emitted at construction projects.[7] The screening tables are described by

[7] BAAQMD. 2010. *Screening Tables for Air Toxics Evaluation During Construction*. May.

BAAQMD as "environmentally conservative interim guidance" and are meant to be used to identify potentially significant impacts that should be modeled using refined techniques. These screening tables indicate that construction activities similar to this project could have significant impacts at the distances of nearby residences, with the primary impact being excess cancer risk. Since project construction activities would include demolition, excavation, grading and building construction that would last longer than six months and would occur adjacent to neighboring residences, a more refined-level study of community risk assessment was conducted. Because the gross analysis indicated that impacts were possible, a refined analysis was conducted to evaluate whether impacts would be significant, and if so, identify the project features or mitigation measures that would be necessary to avoid significant impacts in terms of community risk impacts to nearby sensitive receptors (e.g., adjacent school children and nearby residences).

The health risk assessment focused on modeling on-site construction activity. Construction period emissions were computed using the California Emissions Estimator Model Version 2011.1.1 (CalEEMod) along with projected construction activity. Construction of the project is expected to occur over an approximate 38-month period during 2014 and 2017. Construction activities were assumed to occur 5 days per week between 7 am - 4 pm. The CalEEMod model provided annual $PM_{2.5}$ exhaust emissions (assumed to be diesel particulate matter). Air quality dispersion modeling was used to predict off-site DPM concentrations at sensitive receptors from construction emissions so that increased lifetime cancer risks could be predicted. DPM emissions used in the modeling were from use of on-site off-road construction equipment and from heavy duty diesel trucks traveling on the site and while traveling to and from the site along Shell Boulevard between the site and Metro Center Boulevard. DPM emissions for the heavy duty trucks traveling on and near the site, a trip length of about 0.6 miles, were conservatively assumed to be five percent of the total emissions from haul trucks and vendor trucks, which were based on an overall trip length of 20 miles. For the modeling, one area source was used to represent the site construction area and one volume line source was used to represent the on and off site truck route. Details of the emission calculations are provided in Appendix C. CalEEMod input and output worksheets are provided in Appendix D.

The U.S. EPA ISCST3 dispersion model was used to predict concentrations of DPM at existing sensitive receptors near the project site. The ISCST3 dispersion model is a BAAQMD recommended model for use in refined modeling

analysis of CEQA projects.[8] The ISCST3 modeling of construction activities used a single area source with a release height of 6 meters to represent the project construction area. The elevated source height reflects the height of the equipment exhaust pipes and buoyancy of the exhaust plume. Emissions from trucks traveling near the project site were assumed to travel along Shell Boulevard and were modeled as a line source (represented by a series of volume sources) as indicated in Figure V.C-1.

Emissions were modeled as occurring daily between 8 am - 5 pm for each of the construction years modeled. The ISCST3 model used a 4-year data set (2002-2005) of hourly meteorological data from the San Mateo Sewage Treatment Plant, located about 1.6 miles northwest of the project site. DPM concentrations were calculated at sensitive receptors near the project site. These include nearby residences and preschool and school children (kindergarten through eighth grade) at the Wornick Jewish Day School and Pensinula Jewish Community Center, both adjacent to the project site. Receptors for the modeling were placed at nearby sensitive receptor locations with a receptor height of 5.9 feet (1.8 meters). The locations of the receptors included in the modeling are shown in Figure V.C-1.

Increased cancer risks were calculated using the maximum modeled annual concentration and BAAQMD recommended risk assessment methods using age sensitivity factors for child exposure (3rd trimester through two years of age) and for an adult exposure. Third trimester, infants and small children were assumed to be present at sensitive receptor locations. Since the modeling was conducted assuming emissions occurred 365 days per year, the default BAAQMD[9] exposure period of 350 days per year was used. Infant and child exposures were assumed to occur at residences through the entire construction period. School and preschool children were assumed to be exposed for 36 weeks per year.

Results of this assessment indicate an incremental cancer risk for a preschool child was 33.8 in a million, 12.2 in one million for a school (K - 8) child, 10.2 in one million for a child residing in the proposed project vicinity, and 0.6 in one million for an adult residing in the proposed project vicinity. The maximum DPM concentrations would occur at the location of the Maximum Exposed Individual (MEI), the Day School (see Figure V.C-1). It is assumed that both the preschool and K-8 school are located in this building. The predicted

[8] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 2.0, May 2011.

[9] BAAQMD 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines.* January.

Source: Illingworth & Rodkin, 2013

Figure V.C-1
The 15 Acres
Project Site, Receptor Locations, and Locations of Maximum Cancer Risk

excess child cancer risks would exceed the significance threshold of 10 in one million and would be considered significant.

The project may be constructed in phases, where project residences may be subject to air quality impacts from construction emissions associated with later phases of the project. As a result, these residences could be exposed to TAC emissions from project construction.

However, it is expected that these emission would result in less-than-significant impacts for the following reasons:

- Site preparation, grading/excavation, trenching, placement of utilities and other infrastructure construction that results in the most intensive equipment usage and highest emissions is likely to be completed prior to any residential occupancy;
- The later construction phases would include equipment that is likely to have lower emission rates due to the natural turnover of the fleet, where older (more polluting equipment) is replaced with newer (less polluting equipment) and State regulations that require construction equipment fleet operators to retrofit or replace equipment have a greater effect at reducing construction DPM emissions; and
- Residences occupying the project would be seniors that are less susceptible to cancer causing TAC exposures. Infants and small children are up to 10 times more susceptible.

Using construction equipment with engines that meet U.S. EPA Tier 4 particulate matter emission standards (or equivalent), as required by Mitigation Measure Air-1b, would result in a maximum increased cancer risk for a preschool child of 2.4 in a million, 0.9 in one million for a school (K - 8) child, 0.8 in one million for a residential child, and 0.05 in one million for a residential adult. These predicted excess cancer risks would be below the established threshold of significance and would be considered less than significant.

The maximum off-site $PM_{2.5}$ concentration at any location was 0.25 ug/m^3, occurring at the Day School for the unmitigated emissions case, which is below the BAAQMD threshold of 0.3 µg/m^3. After implementation of Mitigation Measure Air-1b, the maximum $PM_{2.5}$ concentration would be 0.018 ug/m^3. The maximum unmitigated hazard index (HI) was 0.05 and the maximum HI for mitigated emissions was 0.003, while the threshold is 1.0

As a result, the project with mitigation measures would have *a less-than*-significant impact with respect to community risk caused by construction activities.

Mitigation Measure AIR-1: The following two-part mitigation measure shall be implemented:

AIR-1a: Implement BAAQMD Recommended Best Control Measures for reducing fugitive dust emissions, including

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered;
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited;
- 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). 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 mechanic and determined to be running in proper condition prior to operation; and
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.

AIR-1b: Selection of equipment during demolition, grading and trenching construction phases to minimize emissions. Such equipment selection would include the following:

- Diesel-powered off-road equipment larger than 50 horsepower and operating at the site more than two days that are used for demolition and mass grading/excavation and building construction shall meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent;
- Minimize the number of hours that equipment will operate including the use of idling restrictions; and
- Line power shall be installed at the site as soon as possible after construction start and would be used to power equipment to avoid use of diesel-powered generator engines.

Note that the construction contractor could use other measures to minimize construction period diesel particulate matter emissions to reduce the predicted cancer risk below the thresholds. Such measures may be the use of alternative powered equipment (e.g., LPG powered forklifts), alternative fuels (e.g., biofuels), added exhaust devices, or a combination of measures, provided that these measures are approved by the City.

Implementation of this two-part mitigation measure will reduce construction period emissions to a less-than-significant level. (LTS)

D. NOISE

This section evaluates the significance of noise impacts resulting from the 15 Acres project in Foster City, California. Included in this report is a brief description of the fundamentals of environmental noise and vibration, a summary of applicable regulatory criteria, and the results of noise monitoring surveys conducted within the plan area. Future conditions within the plan area are calculated and summarized. The report then evaluates the significance of project impacts against existing and future conditions including noise and land use compatibility, permanent noise level increases resulting from project-generated traffic, and temporary noise level increases resulting from project construction activities. Mitigation is presented to reduce significant noise impacts to less-than-significant levels. Standard construction noise controls are presented to minimize construction noise.

1. Setting

The following discussion provides an overview of existing noise conditions in Foster City.

a. Fundamentals of Environmental Noise and Vibration

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table V.D-1.

Most of the sounds which we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange. This is called “A” weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured in the environment and in industry are shown in Table V.D-2.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no

TABLE V.D-1 DEFINITIONS OF ACOUSTICAL TERMS USED IN THIS REPORT

Term	Definitions
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, Leq	The average A-weighted noise level during the measurement period.
Lmax, Lmin	The maximum and minimum A-weighted noise level during the measurement period.
L01, L10, L50, L90	The A-weighted noise levels that are exceeded 1, 10, 50, and 90 percent of the time during the measurement period.
Day/Night Noise Level, Ldn or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin, 2013

TABLE V.D-2 TYPICAL NOISE LEVELS IN THE ENVIRONMENT

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 1,000 feet		Rock concert
	110 dBA	
Pile driver at 65 feet	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 50 feet		
	80 dBA	Noisy restaurant
		Garbage disposal at 3 feet
Gas lawn mower at 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial/Urban area daytime		Normal speech at 3 feet
Suburban expressway at 300 feet	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Compiled by Illingworth & Rodkin, 2013

particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01}, L_{10}, L_{50}, and L_{90}, are commonly used. They are the A-weighted noise levels equaled or exceeded during 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period. A single number descriptor called the L_{eq} is also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, Ldn (day/night average sound level), was developed. The Ldn divides the 24-hour day into the daytime of 7:00 a.m. to 10:00 p.m. and the nighttime of 10:00 p.m. to 7:00 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average which includes both an evening and nighttime weighting.

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV) and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table V.D-3 displays the reactions of people and the effects on buildings that continuous vibration levels produce. The annoyance levels shown in Table V.D-3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this

TABLE V.D-3 REACTION OF PEOPLE AND DAMAGE TO BUILDINGS FROM CONTINUOUS OR FREQUENT INTERMITTENT VIBRATION LEVELS

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Transportation- and Construction-Induced Vibration Guidance Manual, California Department of Transportation, June 2004.

rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to a building. Construction-induced vibration that can be detrimental to a building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

b. Existing Noise Environment

The project area is approximately 15 acres bounded by Civic Center Drive, Foster City Boulevard, Balclutha Drive, and Shell Boulevard. Noise sensitive receivers in the site vicinity include the William E. Walker Recreation Center which houses the Senior Center across Shell Boulevard, the North Peninsula Jewish Campus (NPJC) located to the east across Balclutha Drive, and multi-family residential buildings across Foster City Boulevard. These nearest receivers are approximately 50 to 100 feet from the project site. Foster City's Library, Police Department, Fire Department, and City Hall comprise the lot northwest of Civic Center Drive from Shell Boulevard to Foster City Boulevard. The North Peninsula Jewish Campus is located to the southeast of Balclutha Drive. Figure V.D-1 shows the noise measurement locations made at the site and in the site's vicinity.

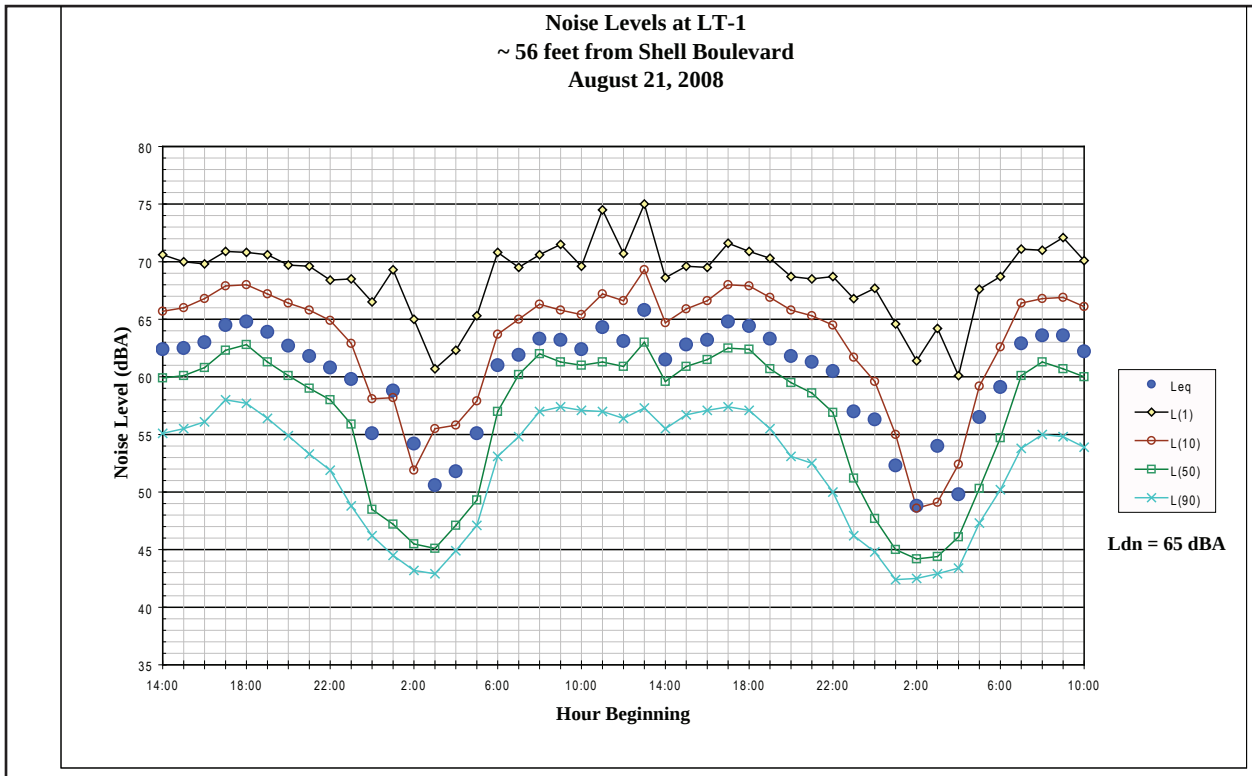
A noise monitoring survey was conducted in August 2008 to quantify the existing noise environment at representative locations at the project site and in the site vicinity. This included two long-term noise measurements (LT-1 and LT-2) summarized in Figure V.D-2. In addition to the two long-term measurements, the noise monitoring survey included three short-term noise measurements (ST-1, ST-2, and ST-3) shown in Table V.D-4. These short-term measurements were repeated in February 2013. The results of the 2013 noise measurements indicate that conditions have not significantly changed since 2008. The noise monitoring surveys are summarized below.

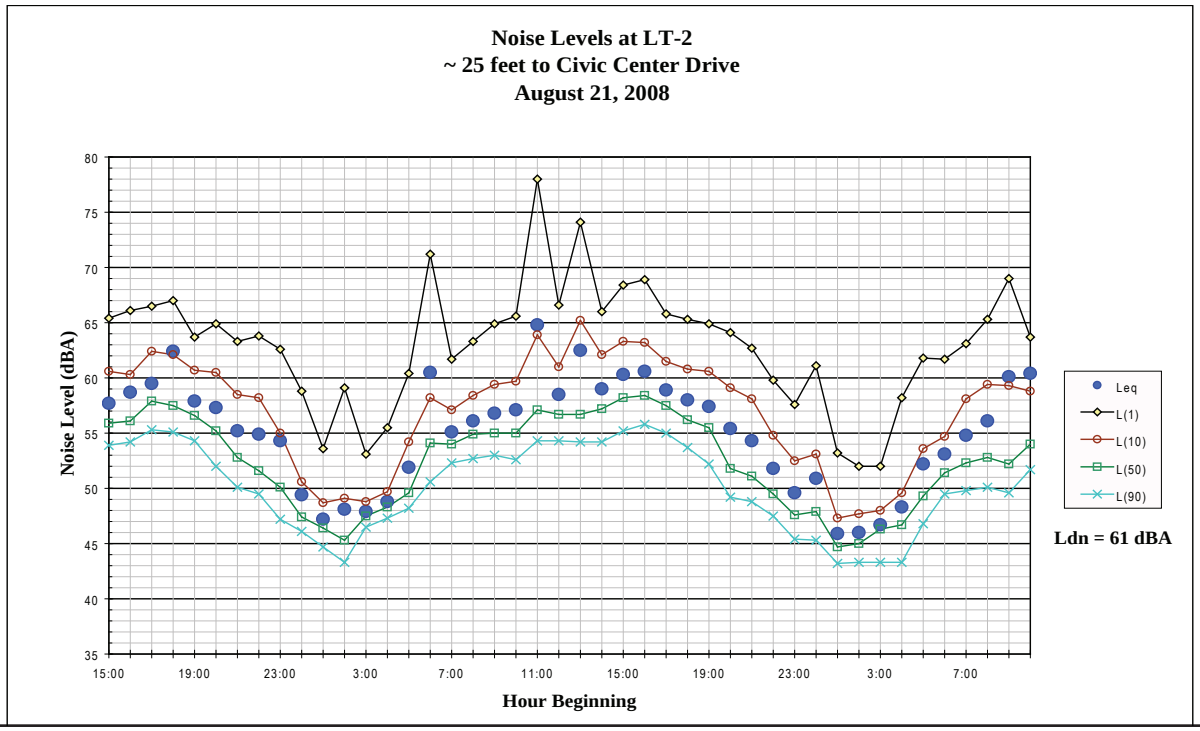
(1) Long Term Noise Measurements

Location LT-1 was in front of the Senior Center, 56 feet from the centerline of Shell Boulevard and 118 feet to the Recreation Center entrance at an elevation of approximately 10 feet above the ground. The noise measurement was performed from 2:00 p.m. on August 20, 2008 to 10:00 a.m. on August 22, 2008. The close proximity of the measurement to Shell Boulevard resulted in noise caused almost exclusively by vehicle traffic. Hourly average noise levels ranged from 62 to 66 dBA L_{eq} during the day, 61 to 64 dBA L_{eq} in the evening

Source: Illingworth & Rodkin, 2008

Figure V.D-1
The 15 Acres
Noise Measurement Locations





Source: Illingworth & Rodkin, 2008

Figure V.D-2
The 15 Acres
Summary of Long-Term Measurement Data 08/21/08

and 49 to 61 dBA L_{eq} at night. The 24-hour average noise level 56 feet from the roadway centerline was 65 dBA Ldn.

Location LT-2 was across from the Foster City Fire Department and City Hall, 25 feet to the center of the nearest lane of Civic Center Drive, at an approximate height of 10 feet above the ground. The noise measurement was performed from 3:00 p.m. on August 20, 2008 to 10:00 a.m. on August 22, 2008. The roadway was not as heavily trafficked as Shell Boulevard and this is reflected in the L_{dn} of 61 dBA at a closer proximity to the road. Hourly average noise levels ranged from 55 to 65 dBA L_{eq} during the day, 54 to 58 dBA L_{eq} in the evening, and 46 to 61 dBA L_{eq} at night. The Ldn at LT-2 was 61 dBA.

(2) Short Term Noise Measurements

In addition to the two long-term measurements, the noise monitoring survey included three short-term noise measurements (ST-1, ST-2, and ST-3) shown in Table V.D-4. These short-term measurements were repeated in February 2013. Significant contributions to the noise environment within the plan area and vicinity included transportation noises from both automobiles and airplanes. Less prominent sources were discerned during the short-term measurements including bird chirps, mechanical equipment from the rooftop of City Hall, and car doors closing.

Short-term measurement ST-1 was taken about 55 feet from the center of the nearest lane of Foster City Boulevard, at a height of 5 feet above the ground. Sources in 2008 included 160 cars, four medium trucks, four jets and one motorcycle during the 10-minute measurement. The automobile and airplane traffic were the predominant noise sources, while bird calls and moderate wind were noise sources to a lesser extent. Conditions were similar during the mid-day measurement in 2013.

Site ST-2 was located 345 feet to the center of the nearest lane of Foster City Boulevard at a height of 5 feet. During the 2008 measurement the noise contribution of three jet-airplanes was more significant due to the increased distance from Foster City Boulevard, reducing automobile noise levels. Jets were also the dominant noise source during the 2013 measurement.

Site ST-3 was located 40 feet to the center of the nearest lane of Shell Boulevard, just within the project site's southwest border at a height of 5 feet. During the 2008 measurement traffic included 75 cars, one heavy truck and two buses during the measurement. In 2013 heavier automobile traffic and a bus were noted. Shell Boulevard traffic is the main source of noise and Balclutha Drive traffic is a secondary noise source.

TABLE V.D-4 SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA AUGUST 20, 2008 AND FEBRUARY 6, 2013

Noise Measurement Location	Time	Lmax	L1	L10	L50	L90	Leq	Ldn
ST-1: ~55 feet to the center of nearest lane of Foster City Blvd, in parking lot. 330 feet from Balclutha (2008)	14:50-15:00	71	68	64	59	55	61	64
ST-1: Same Location (2013)	12:50-13:00	68	67	65	60	54	61	64
ST-2: Same parking lot ~345 feet to the center of nearest lane of Foster City Blvd (2008)	15:30-15:40	65	61	58	55	54	56	58
ST-2: Same location (2013)	12:30-12:40	69	65	60	54	51	57	58
ST-3: ~40 feet to the center of nearest lane of Shell Blvd. near school entrance, 130 feet to Recreation Center and approximately 290 feet to LT-1 (2008)	15:50-16:00	74	71	65	60	55	62	64
ST-3: Same location (2013)	11:30-11:40	76	70	68	61	57	63	64

Note: L_{dn} approximated by correlating to corresponding period at long-term site.
Source: Illingworth & Rodkin, 2008 and 2013.

In addition to the short-term noise measurements, the change in traffic noise levels along local roadways was calculated at representative intersections in the vicinity of the project site, using traffic data for 2008 and 2013 developed by Fehr and Peers Transportation Consultants, to determine whether noise levels in the area have changed since 2008 when the baseline noise survey was completed. The changes in traffic noise levels were, in all cases, less than 0.2 dBA L_{dn}, indicating that the noise levels measured in 2008 have not changed significantly and are still representative of the current baseline conditions.

(3) Airport Noise

Aircraft operations associated with San Francisco International Airport (SFIA) contribute to the noise environment in Foster City. A review of the noise exposure contour for SFIA shows that the project site is exposed to noise levels below 65 dBA CNEL. One of the stationary noise monitors for SFIA is located in the park along the eastern shoreline in Foster City. A review of data presented in quarterly noise reports for SFIA indicates that the annual average noise level is about 61 dBA CNEL. The noise exposure level at the project site would be lower because it is further to the west of the flight path which is over the San Francisco Bay. The available data indicate that the noise exposure at the project site resulting from aircraft operations at SFIA is less than 60 dBA CNEL (about 58 dBA CNEL). For the purposes of this analysis, CNEL

and L_{dn} are assumed to be equivalent. CNEL is used to compare aircraft noise to State airport regulations. The project site is located outside of the 55 dB CNEL aircraft noise contour for the San Carlos Airport. This noise contour is used by the Airport Land Use Commission as the threshold for triggering review and evaluation of proposed land use policy actions in proximity to the airport with respect to noise impacts.[1]

c. Regulatory Setting

The State of California and Foster City have established guidelines, regulations, and policies designed to limit noise exposure at existing and proposed noise sensitive land uses.

(1) 2010 California State Building Code

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 2010 California Building Code (Chapter 12, Section 1207.11). 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.

(2) Foster City Noise Element

The Noise Element of the Foster City General Plan establishes goals, policies, and programs related to community noise. Policy N-1 establishes land use compatibility standards. The goal for maximum outdoor noise levels in residential areas is an L_{dn} of 60 dBA. The goal is 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 is not normally applied to the small decks associated with apartments and condominiums. Instead, outdoor noise standards for these developments are evaluated on a case-by-case basis. Where the City determines that providing an L_{dn} of 60 dBA or lower outdoors is not feasible, the outdoor goal may be increased to an L_{dn} of 65 dBA.

The interior noise level, as required by the State of California Noise Insulation Standards, must not exceed an L_{dn} of 45 dB in multi-family dwellings. Where

[1] City/County Association of Governments of San Mateo County (C/CAG), 1996, op. cit., p. IV-25 to IV-27.

the exterior L_{dn} is 60 dB or greater, interior noise levels shall also be limited to a maximum instantaneous noise level in the bedrooms of 50 dBA L_{max} and 55 dBA L_{max} in other rooms.[2]

Policy N-4 establishes noise and land use compatibility standards for industrial and commercial noise sources that may affect new residential or other noise sensitive development. These are summarized in Table V.D-5.

Policy N-5 enumerates various measures to mitigate noise impacts on surrounding uses that may result from a proposed project.

Policy N-8 establishes significance thresholds in order to protect the noise environment in existing residential areas. It states, "In general, the City will require the evaluation of mitigation measures for projects that would cause the L_{dn} to increase by 3 dB or more, if the increase would result in an L_{dn} greater than 60 dB, or if the L_{dn} already exceeds 60 dB." Projects with the potential to generate significant adverse community controversy must also be evaluated.

(3) Foster City Municipal Code

The City of Foster City has established regulations in the Noise section (17.68.030) of the Municipal Code. The following sections would be applicable to the proposed project:

17.68.030(E). Prohibited Acts

4. Permitting the operation of any tools, or equipment used in construction, repair, alteration, demolition or landscape maintenance prior to 7:30 a.m. or after 8:00 p.m. on weekdays and before 9:00 a.m. or after 8:00 p.m. on weekends and legal holidays, in a residential district or within 100 yards of a residential district, or during other hours such that the noise level from a single or multiple sources exceeds 100 dBA at the producer's property plane unless prior City authorization is obtained, pursuant to Section 17.68.030(F)(7). In addition, the use of leaf blowers shall conform to Section 17.68.030(E)(7).

[2] This is not an exception – the difference is 45 dBA Ldn (24-hour average) and 50 dBA and 55 dBA L_{max} (maximum instantaneous noise level).

TABLE V.D-5 NOISE AND LAND USE COMPATIBILITY STANDARDS FOR INDUSTRIAL AND COMMERCIAL NOISE SOURCES

Category	Cumulative Duration of Noise Event in any 1-Hour Period (in Minutes)	Exterior Noise Level Standards	
		Daytime (7 a.m.–10 p.m.)	Nighttime (10 p.m.-7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Notes:

1. 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. This table references noise categories from the City's Noise Element, Policy N-4.
2. 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.

Source: Illingworth & Rodkin, 2013.

2. Impacts and Mitigation Measures

This section discusses potential noise impacts that could result from implementation of the project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies mitigation measures, as appropriate.

a. Significance Criteria

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. A significant noise impact would result if the project:

- Exposes persons to or generates noise levels in excess of normally acceptable standards established in the General Plan or noise ordinance (i.e., outdoor L_{dn} of 60 dBA for residential uses and L_{dn} of 65 dBA for office and commercial uses); or
- Exposes persons to or generates excessive groundborne vibration or noise; or

- Creates a substantial permanent change in the noise environment such that the L_{dn} would increase by 3 dBA or more, if the increase would result in an L_{dn} greater than 60 dB or if the L_{dn} already exceeds 60 dB; or
- Be located within an airport land use plan or within two miles of a public airport or public use airport, and would expose people residing or working in the project area to excessive noise levels; or
- Be located in the vicinity of a private airstrip and would expose people residing or working in the project area to excessive noise levels; or
- A substantial temporary or periodic noise level increase would occur where:
    1) Noise from construction activities would exceed 60 dBA Leq-hr and the ambient noise environment by at least 5 dBA Leq-hr for a period of one year or more at exterior areas of uses sensitive to noise inside and outside (e.g., residences, residential care facilities, schools, libraries); or
    2) Noise from construction activities would exceed 70 dBA Leq-hr and the ambient noise environment by at least 5 dBA Leq-hr for a period of one year or more at the exterior of offices or other commercial, retail, or institutional uses with interior spaces sensitive to noise.

b. Less-Than-Significant Noise Impacts

A discussion of less-than-significant impacts of the proposed project is provided below.

(1) Exposure to Change in Noise Levels

Exterior Noise

Traffic data provided by Fehr & Peers Transportation Consultants was used to calculate potential project-related traffic noise level increases along roadways in the project vicinity. This data included turning movement counts at numerous intersections for existing conditions, projections for the future with and without the project, and the future cumulative conditions with and without the project. Roadway segment traffic volumes were calculated based on the turning movement data and compared to existing conditions to calculate the anticipated noise level increase in each scenario, and the project's relative contribution under each scenario.

The traffic data indicates that non-stationary traffic noise levels along roadways in the site vicinity would increase by less than 1 dBA L_{dn} above existing noise levels as a result of the project. This would represent a less-than-

significant impact as noise levels would not noticeably increase as a result of the project.

Substantial cumulative traffic noise increases are not anticipated along area roadways as a result of the project. Traffic noise levels along roadways serving the project site vicinity will typically increase by 0 to 1 dBA L_{dn} above existing levels under cumulative plus project conditions. This includes all future cumulative projects. A comparison of cumulative plus project and cumulative no-project shows that traffic noise increases attributable to the proposed project would be less than 1 dBA L_{dn}. The project would not make a "cumulatively considerable" contribution. This is a less-than-significant impact.

Interior Noise

Future noise exposure levels for the project site were determined by adjusting existing noise levels to account for future cumulative traffic growth on the adjoining streets. Residential buildings fronting Civic Center Drive including the assisted living facility and Courtyard Flats are proposed at a distance of about 30 feet from the roadway centerline. After taking into account distance and increased traffic, the noise exposure at the residential building facades facing Civic Center Drive is calculated to be 61 dBA L_{dn}. Along Shell Boulevard, the residential Garden Flats building facades would be exposed to a noise level at about 64 dBA L_{dn}, and the Courtyard Flats adjacent to the greenspace would be exposed to a noise level of about 62 dBA L_{dn}. Balclutha Drive would have a low volume of traffic and would generate noise levels below 60 dBA L_{dn} at the residential building facades fronting on Balclutha Drive. The noise exposure at building facades oriented towards Foster City Boulevard would be about 60 dBA L_{dn}.

The project site includes outdoor activity areas that would be shielded from vehicular traffic noise by the buildings or large open space buffers created by parking areas or public greenspaces. These design features would attenuate traffic noise levels in these outdoor activity areas to below 60 dBA L_{dn}. Noise levels in outdoor areas would, therefore, be consistent with General Plan guidelines. The noise exposure at the project site due to aircraft operations is not anticipated to change significantly from existing conditions. The noise exposure is projected to exceed 55 dBA L_{dn} and be less than 60 dBA L_{dn} throughout the project site. Because the aircraft are to the east and at a low altitude, the proposed buildings would provide some additional shielding for aircraft noise. The noise exposure of the outdoor areas would conform to the guidelines in the General Plan and the impact would be less than significant.

Interior noise levels within proposed residential units are required to be maintained at or below 45 dBA L_{dn}. In residential units of standard construction, interior noise levels are approximately 15 decibels lower than exterior noise levels with the windows partially open. Where exterior noise levels exceed 60 dBA L_{dn}, a report must be submitted with the building plans identifying the noise attenuation features included in the project's design to maintain interior noise levels at or below 45 dBA L_{dn}.

Typically, standard construction with forced air ventilation (allowing the occupant to control noise by maintaining the windows shut) provides approximately 20 to 25 dBA of noise reduction in interior spaces. This method of reducing interior noise levels is normally used in noise environments ranging from 60 to 65 dBA L_{dn}.

Project-specific acoustical analyses are required by the 2010 California Building Code[3] to confirm that interior noise levels will be reduced to 45 dBA Ldn or lower. Prior to the issuance of building permits, the project sponsor will submit for City review and approval, a detailed study identifying the noise insulation features included in the project design to achieve the interior noise level standard. Typical residential construction materials and methods are expected to be sufficient.

(2) Aircraft Noise

San Francisco International Airport is located approximately 10 miles north of the project site. San Carlos Airport is located approximately 2.5 miles south of the project site. There are no private airstrips near the project site. Aircraft-related noise is audible in the project vicinity. The project site is located outside of the 55 dB CNEL aircraft noise contour for the San Carlos Airport.[4] According to the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco Airport* (October 2012), the project site is now, and projected to continue to be, exposed to aircraft noise levels below 65 dBA CNEL. Because the site is outside the noise impact boundary established by the 65 dBA CNEL contour, it is considered a compatible land use with respect to State airport regulations, resulting in a less-than-significant impact for the proposed project.

[3] California Building Code, 2010, Section 1207.11.2, Allowable Interior Noise Levels.

[4] City/County Association of Governments of San Mateo County (C/CAG), 1996, op. cit., p. IV-25 to IV-27.

(3) Ground Vibration

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams, pile drivers) are used. Construction activities would 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 V.D-6 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project 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. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Vibration levels from typical construction activities would be expected to be 0.2 in/sec PPV or less, below the 0.5 in/sec PPV significance threshold. Vibration generated by construction activities near the common property line would at times be perceptible, however, would not be expected to result in “architectural” damage to these buildings.

The building foundations could be supported on driven piles. The nearest structure is located more than 50 feet from the proposed construction work. Pile driving typically generates vibration levels of about 0.2 in/sec PPV, with maximum levels of up to about 0.4 in/sec PPV at a distance of about 50 feet. Vibration levels from pile driving would be below the 0.5 in/sec PPV significance threshold. Vibration generated by construction activities near the common property line would at times be perceptible, however, would not be expected to result in “architectural” damage to these buildings. This is a less-than-significant impact.

TABLE V.D-6 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.

c. Significant Noise Impacts

A discussion of significant impacts of the proposed project is provided below.

Impact NOISE-1: Noise generated by construction activities on the site could cause a substantial temporary increase in noise levels at surrounding uses including the civic center, the NPJC, the multi-family residential buildings across Foster City Boulevard, the William E. Walker Recreation Center across Shell Boulevard. The project may also be constructed in phases, thereby subjecting on-site residents to construction noise during later construction phases of the project. (S)

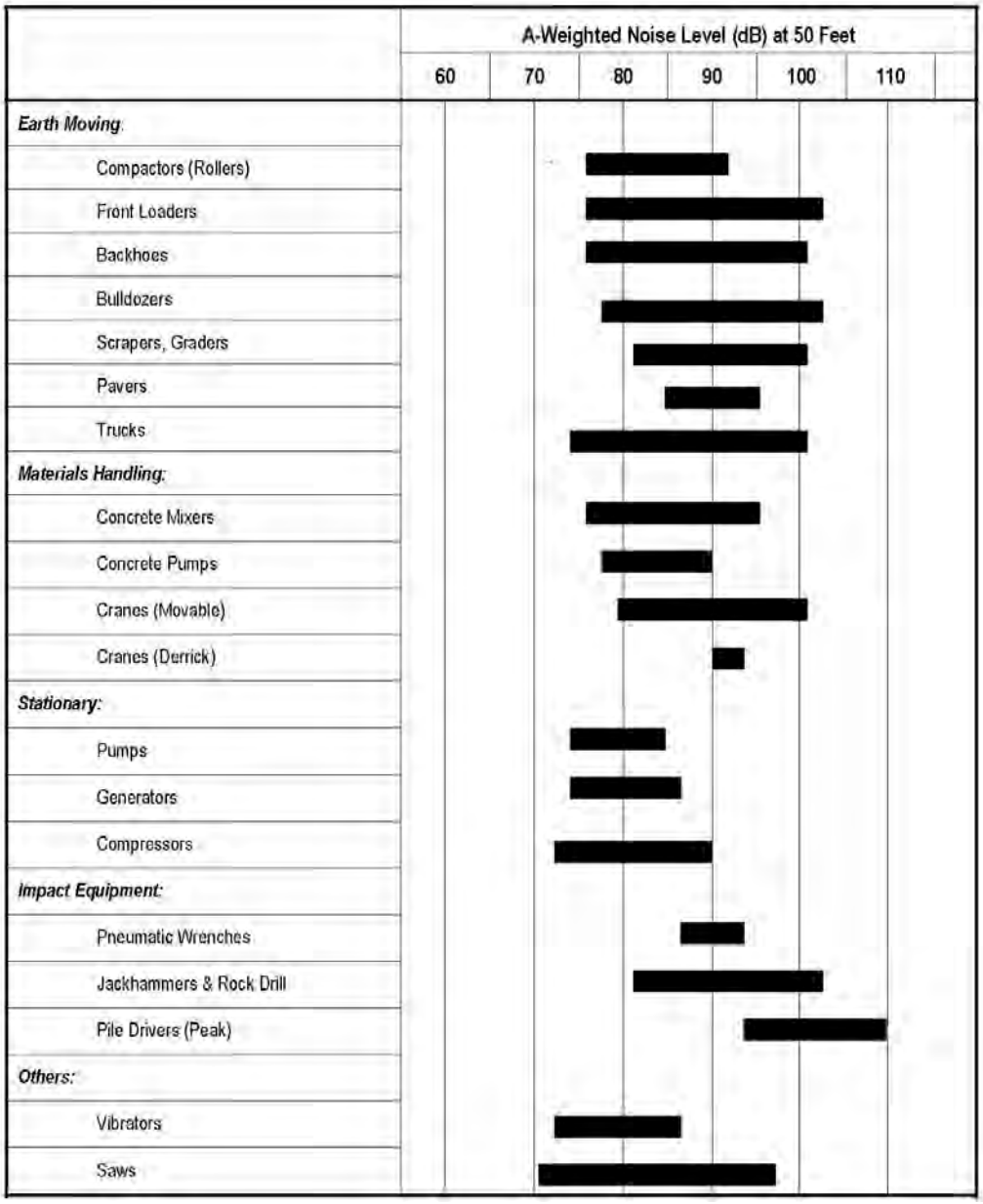
Future construction on the site would temporarily increase noise levels at existing adjacent land uses. The project may also be phased in a way that would subject future on-site residents to construction noise during latter

phases of the project. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Noise sensitive receptors are places where people would anticipate a relatively quiet environment. These are defined based on the land use type and the potential for annoyance, as opposed to health effects. These include residences, schools or daycares, hospitals, places of worship, and special uses such as parks, trails, and outdoor amphitheaters. Where noise from construction activities exceeds 60 dBA L_{eq} (for residential) and 70 dBA Leq (for office or non-residential uses) and exceeds the ambient noise environment by at least 5 dBA L_{eq} at noise-sensitive uses in the project vicinity for a period of more than one construction season, the impact would be considered significant.

Table V.D-7 depicts the range of A-weighted noise levels generated by specific pieces of construction equipment at a distance of 50 feet. Table V.D-8 presents typical ranges in hourly average noise levels at a distance of 50 feet generated different phases of construction. Construction activities generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. Typical hourly average construction generated noise levels are about 81 dBA to 88 dBA measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). Construction generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. Limiting the hours when construction can occur to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately adjacent to construction, controls such as constructing temporary noise barriers and utilizing “quiet” construction equipment can also reduce the potential for noise impacts.

Surrounding sensitive land uses are located 100 to 200 feet from the project boundaries where active construction would be expected to occur. Residential land uses constructed during early phases of the project, and possibly occupied prior to completion of the project, may be located within approximately 50 feet of active construction areas. The project anticipates a 38-month construction schedule, with the groundbreaking planned for 2014. Horizontal construction (grading, surcharge, and infrastructure) is planned over approximately 18 months. Vertical construction (buildings) is planned

TABLE V.D-7 CONSTRUCTION EQUIPMENT NOISE LEVEL RANGE



Source: Handbook of Noise Control, Cyril M. Harris, 1979.

TABLE V.D-8 NOISE LEVELS BY CONSTRUCTION PHASES

Typical Ranges of Energy Equivalent Noise Levels at 50 Feet, Leq in dBA, at Construction Sites								
Phase	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

Notes: I = All pertinent equipment present at site.
II = Minimum required equipment present at site.
Source: USEPA, Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

over approximately 20 months. Building construction will generally be from east to west. It is therefore likely that active construction, generating elevated noise levels, would occur throughout at least the first 18 months and possibly throughout the entire 38-month construction schedule. Hourly average noise levels would typically range from 70 to as high as 80 dBA L_{eq} at noise sensitive properties bordering the project site. Hourly average construction generated noise levels would typically range from 81 dBA to 88 dBA at occupied residential land uses on the project site during completion of latter phases of the project. During construction, maximum noise levels would vary, depending on the equipment operating on-site. Impact pile driving could generate noise levels as high as 105 dBA L_{max} at a distance of 50 feet. Accounting for the increased distance between the pile driving activities and the nearby sensitive receptors, maximum noise levels would typically be expected to range from about 90 to 100 dBA L_{max}. Additionally, because of the distance between sensitive receptors and pile driving activity, vibration levels at the nearest sensitive receivers would not be perceptible.

Construction noise levels are anticipated to exceed 60 dBA L_{eq} and the ambient by 5 dBA L_{eq} or more over extended periods of time. It is possible that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA L_{eq} for a period of time exceeding one construction season. Maximum noise levels would

not normally exceed 100 dBA L_{max} unless pile driving occurs at or very close to the property boundary. The construction of the project would result in a significant temporary noise level increase at neighboring noise-sensitive properties, as well as at noise-sensitive land uses on site that are occupied prior to completion of the project.

Mitigation Measure NOISE-1: In accordance with City standards, the following multi-part mitigation measure shall be implemented:

- 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.
- During all project site excavation and on-site grading, the construction contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- The construction contractor shall locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. The construction contractor shall 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.
- 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.
- The construction contractor shall utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The construction contractor shall 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.
- The construction contractor shall control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.

- The construction contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.
- If pile driving is necessary, the construction contractor shall pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.
- If pile driving is necessary, the construction contractor shall consider using multiple pile driving rigs to expedite this phase of construction.
- If pile driving is necessary, the construction contractor shall consider the use of "acoustical blankets" to shroud the pile hammer.

Implementation of these measures would reduce construction-related noise levels; however, construction noise levels would continue to exceed 60 dBA L_{eq} and the ambient by 5 dBA L_{eq} or more over one construction season.

Although the above measures would reduce noise generated by the construction of the project, the impact would remain significant and unavoidable as a result of the extended period of time that receivers would be exposed to construction noise. (SU)

E. GEOLOGY, SOILS, AND SEISMICITY

This section describes the proposed project site's geologic environment, based on a 2008 site-specific *Preliminary Geotechnical Assessment*[1] (geotechnical assessment). In addition, information sources include published and unpublished geologic reports and maps by the United States Geological Survey (USGS), California Geological Survey (CGS), City of Foster City, others as available, and a site reconnaissance. This section also assesses potential impacts from strong ground shaking, liquefaction, differential settlement, and unstable or expansive soils. Mitigation measures for the identified significant impacts are provided, where appropriate.

1. Setting

The proposed project site's existing conditions related to geology and seismicity are described below.

a. Geologic Conditions

The following describes existing geologic conditions at the project site.

(1) Geology

The proposed project is located within the Coast Ranges Geomorphic Province, a relatively geologically young and seismically-active region on the western margin of the North American plate. This region is dominated by northwest-southeast trending ranges of low mountains and intervening valleys, which are subparallel to the active San Andreas Fault. In general, the hills and mountains of Coast Ranges are composed of sedimentary rocks underlain by bedrock. Layers of recent alluvium fill the intervening leys.[2,3] Based on USGS mapping, the project site is underlain by man-made artificial fills that have been placed at the site over Quaternary Holocene-aged Bay Mud[4] that is less than 10,000 years old.[5,6]

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[1] Engeo, Inc., 2008. *Preliminary Geotechnical Assessment, Village Square Development, Foster City, CA*., Submitted to Sares Regis Group of Northern California, LP., Engeo No. 7921.1.001.01, 4 January.

[2] Norris, Robert M., Webb, Robert W., 1990. *Geology of California, 2nd Edition,* J. Wiley & Sons, Inc.

[3] California Department of Conservation, California Geological Survey ('CGS"), 2002, *Note 36, California Geomorphic Provinces*, December.

[4] Bay Mud is an estuarine deposit composed of unconsolidated clay and silt that is prone to settlement upon loading.

[5] USGS, 1983, *Geologic Map of San Mateo County,* USGS Misc. Investigation I-1257-A.

[6] USGS, 1979, *Flatlands Deposits of the San Francisco Bay Region, California*, USGS Professional Paper 943. Jointly by DOI, HUD, USGS.

(2) Soils

The site and surrounding areas were 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 added 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. As part of the preparation for development as a planned community in the late 1950s, approximately 14 million cubic yards of sandy silt were pumped in from San Bruno Shoal to provide 4 to 5 feet of fill throughout the area of Foster City.[7] Bay Mud, due to its high clay percentage and inclusion of organic materials, generally is rated high for shrink-swell potential, with a high risk of corrosion to concrete and uncoated steel, with slow permeability and low erosion potential. Regional mapping classifies most of the soils of the project site as: Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes, with a strip in the northern-central portion of the project site classified as: Novato Clay, 0 to 1 percent slopes.[8]

The site-specific geotechnical assessment[9] for the proposed project included a single soil boring, drilled to a depth of approximately 100.5 feet below the surface of the earth, (referred to as below ground surface, or bgs), and five cone penetrometer tests, to a maximum depth of approximately 90 feet bgs. In 1998 and 1999, two geotechnical investigations were conducted for adjacent sites and included soil borings. The investigations indicate that the surficial layer of medium dense silty sand fill at the site extends up to 6 feet bgs. Beneath this is a layer of predominately very soft and highly 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 interlayered clays, silts, and medium dense sand to the limits of the depths explored.[10]

(3) Topography

The roughly rectangular 15-acre project site is located within an urbanized portion of central Foster City, approximately 500 feet northeast of Central

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[7] City of Foster City, 2008. *Community Info, History of Foster City, Creating the Land,* accessed 11/6/2012 at: http://www.fostercity.org/community_info/Creating-the-Land.cfm.

[8] Natural Resources Conservation Service, 2012. *Web Soil Survey*, USDA Mapping Website: websoilsurvey.nrcs.usda.gov.

[9] Engeo, 2008, op. cit.

[10] Engeo, 2008, op. cit.

Lake, a man-made interior lagoon within Foster City. The existing ground surface elevation is approximately 7 feet National Geodetic Vertical Datum of 1929 (NGVD)[11,12] or 105 to 107 feet Foster City Datum.[13] Based on observations during a site reconnaissance by Baseline Environmental Consulting for the preliminary preparation of this EIR on November 14, 2012 and USGS topographic information, the entire site has approximately the same elevation.[14]

b. Seismic Conditions

The following describes existing seismic conditions within and in the vicinity of the project site.

(1) Regional Seismicity

The entire San Francisco Bay Area is located within the San Andreas Fault Zone (SAFZ), a complex of active faults forming the boundary between the North American and Pacific lithospheric plates. Movement of the plates relative to one another results in the accumulation of strain along the faults, which is released during earthquakes. Numerous moderate to strong historic earthquakes have been generated in northern California by the SAFZ. This level of active seismicity results in relatively high seismic risk in the San Francisco Bay Area. The SAFZ includes numerous faults found by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) to be "active" (i.e., to have evidence of fault rupture in the past 11,000 years). Regional active faults in the San Francisco Bay Area are shown on Figure V.E-1.[15]

In a fact sheet published in 2008, the USGS estimated that there was a 21 percent probability that between 2008 and 2037, a 6.7 or greater magnitude (M_w, or Moment Magnitude) earthquake will occur along the Northern San Andreas Fault. The probability of a 6.7 magnitude or greater earthquake occur

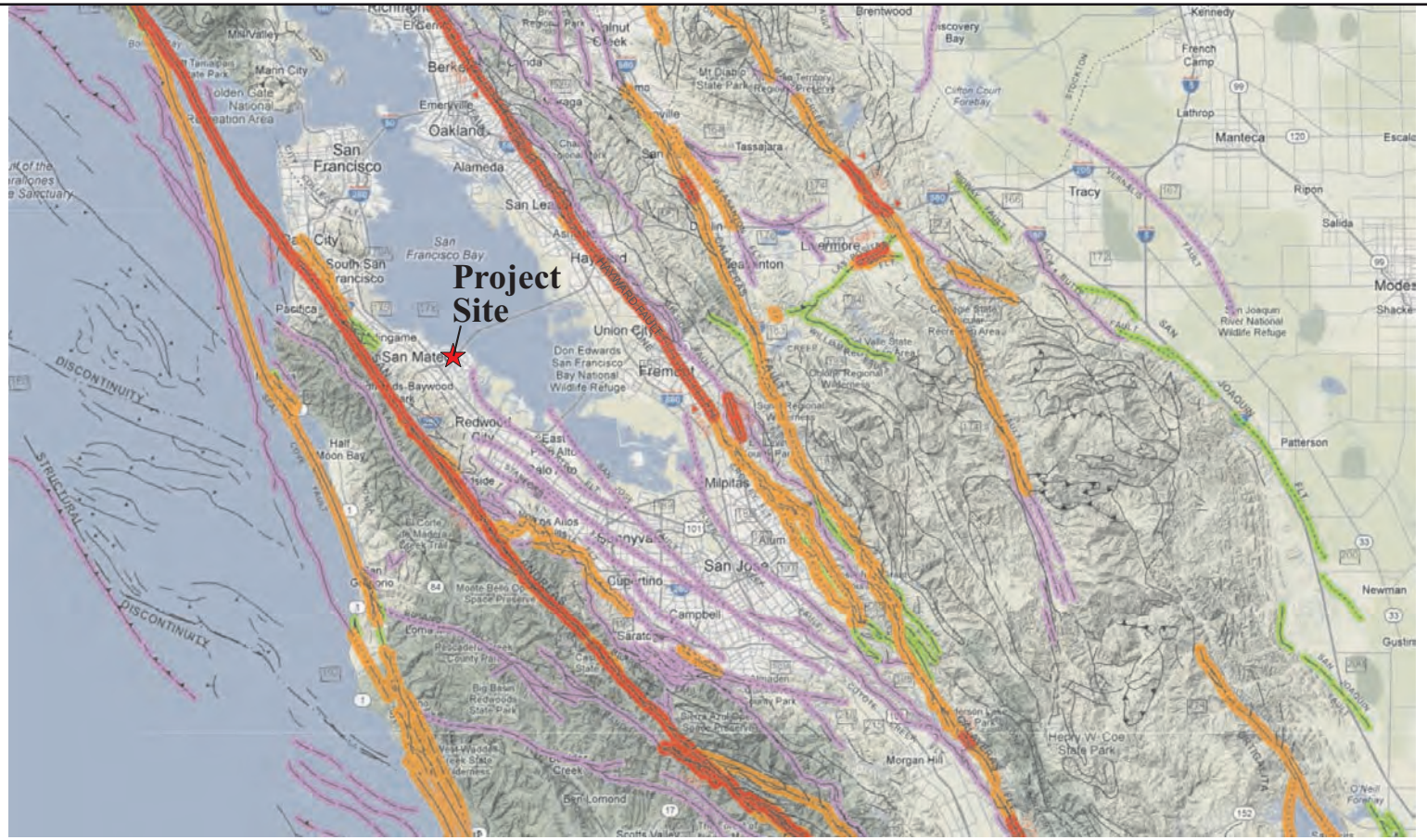
[11] Engeo, 2008, op cit.

[12] The NGVD 1929 is a vertical control datum established to measure vertical positions or elevations based on mean sea level measurements circa 1929. For most purposes, NGVD is equivalent to mean sea level.

[13] The Foster City Datum is equal to the National Geodetic Vertical Datum of 1929 plus 100 feet. Source: Towne, R., 2007, City of Foster City Public Works, personal communication with Baseline.

[14] U.S. Geological Survey ("USGS'), 1997, *San Mateo Quadrangle, California,* accessed 11/5/2012 at http://nationalmap.gov/ustopo/index.html

[15] CGS, 2010, *2010 Fault Activity Map of California,* Geologic Data Map No. 6. Website accessed 11/6/2012 at: http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html



Source: California Department of Conservation, California Geological Survey, 2010, Geologic Data Map No. 6, 2010 Fault Activity Map of California. Website accessed at http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html.

Source: BASELINE, 2013

Figure V.E-1
The 15 Acres
Fault Activity Map

ring along other local active faults was estimated to be 31 percent along the Hayward-Rodgers Creek Fault, and seven percent along the Calaveras Fault.[16]

(1) Site-Specific Seismicity

The project site is not located within an Alquist-Priolo Earthquake Fault Zone (A-PEFZ), and no known active or potentially active faults cross the site.[17] The nearest A-PEFZ is the peninsula segment of the San Andreas Fault, about 5.6 miles southwest of the proposed project.[18] The San Andreas Fault is a right lateral strike-slip fault with a northwest-southeast axis[19] and, as noted above, has a 21 percent chance of an M_w 6.7 earthquake occurring between 2008 and 2037.[20] The Hayward Fault is approximately 13.0 miles northeast of the project site and has a 27 percent chance of an M_w 6.7 earthquake occurring for the same period.

c. Seismic and Geologic Hazards

The following describes existing seismic and geologic hazards present at the project site. The project site vicinity has not yet been mapped by the CGS under the Seismic Hazards Mapping Act, although mapping is reportedly in progress.[21]

(1) 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. The potentially active and concealed (one without surface expression) Palo Alto Fault is approximately 1.3 miles southeast of the site.[22] Because this fault is concealed and is not zoned as requiring further study by the CGS, the probability of surface rupture is deemed low by the CGS. No active or potentially active

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[16] USGS, 2008. *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years*, USGS Fact Sheet 2008-3027.

[17] Engeo, 2008, op cit.

[18] California Division of Mines and Geology (CDMG), 1974. *State of California Special Studies Zones, San Mateo Quadrangle Map* [Alquist-Priolo Map].

[19] Right-lateral: if the trace of the fault were viewed while standing on one side during a seismic event, it would appear that the ground on the other side of the fault moved to the right. Strike-slip: the sides are moving laterally relative to each other with little or no vertical movement.

[20] M_w refers to the moment magnitude scale used to measure earthquakes based on the physical size of the fault rupture and the movement across the fault.

[21] CGS, 2012, *Seismic Hazard Zonation Program*. Website accessed 11/5/2012 at: http://gmw.consrv.ca.gov/shmp/html/pdf_maps_no.html.

[22] Engeo, 2008, op. cit.

faults have been mapped at the proposed project; therefore, potential for fault rupture at the project site is negligible.[23]

(2) Ground Shaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of the subjective effects of earthquake intensity as shown in Table V.E-1. A related concept, acceleration, is measured as a fraction or percentage of the acceleration under gravity (g).[24]

Estimates of the peak ground acceleration (PGA) have been made for the Bay Area based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected PGA (with a 10 percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the project area is estimated by the CGS as 0.51 (g).[25] This level of ground acceleration at the proposed project is a potentially significant hazard.

As described above, the closest active fault to the proposed project is the San Andreas Fault, located approximately 5.6 miles to the southwest. The San Andreas Fault is considered capable of generating an M_w 7.9 earthquake (similar to the 1906 San Francisco quake).[26] An earthquake of this magnitude on the San Andreas Fault would generate very strong (MMI VIII) shaking at the proposed project site.[27]

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[23] Engeo, 2008, op cit.

[24] The acceleration under gravity, denoted *g* (also gee) is a unit of acceleration defined as approximately 32 ft/s^2, which is the acceleration due to gravity on the Earth's surface at sea level.

[25] CGS, 2012. *Probabilistic Seismic Hazards Mapping Ground Motion Page,* accessed 11/5/2012 at: www.consrv.ca.gov/cgs/rghm/pshamap/pshamap.asp.

[26] USGS, 2008, *Earthquake Hazards Program, National Seismic Hazard Maps-Fault Parameters*, Website accessed 11/5/2012 at: http://geohazards.usgs.gov/cfusion/hazfaults_search/disp_hf_info.cfm?cfault_id=1abcd.

[27] Association of Bay Area Governments ("ABAG"), 2003, *Earthquake Hazard Map for Foster City*. Accessed 11/6/12 at: http://www.abag.ca.gov/cgi-bin/pickmapx.pl

TABLE V.E-1 MODIFIED MERCALLI SCALE

I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Board fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: California Geological Survey, 2002. *How Earthquakes and Their Effects are Measured*: Note 32.

(3) 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. Regional studies by the USGS for the Bay Area provide information on Quaternary deposits and liquefaction susceptibility in the area. Based on these regional studies, the Association of Bay Area Governments (ABAG) mapping indicates that the site's liquefaction hazard (susceptibility combined with likelihood) is moderate to high.[28] Regional studies can help provide guidance for general planning and hazard potential assessment; however, site-specific studies are needed to assess the design and engineering requirements for any particular site.

The site-specific preliminary geotechnical assessment notes that, based on cone penetration test (CPT) logs and exploratory borings data, medium dense silty sand deposits comprise the surficial material to a depth of approximately 4 to 7 feet in the vicinity of the proposed project. In addition, thin sand or silty sand lenses approximately 1 to 2 feet thick occur at depths from 35 feet to 60 feet below ground surface within the older alluvium deposits.[29] Groundwater levels were measured at depths of 3.5 to 6.0 feet bgs.

The geotechnical assessment performed preliminary liquefaction analyses using the test boring and CPT data. The analyses of CPT data indicated that portions of the surficial silty sand deposits could potentially liquefy; however, based on analyses on the soil sample collected from the exploratory boring, the surficial silty sand deposits are relatively dense. Therefore, the geotechnical assessment predicts that liquefaction potential for surficial deposits is low to moderate at the site.[30]

In addition, the preliminary geotechnical assessment notes that some of the sand and silty-sand lenses encountered between 35 to 60 feet bgs are potentially liquefiable. Due to the presence of capping effects from overlying non-liquefiable soils, the potential for liquefaction of these thin lenses of silty sandy soils at depth is considered low to moderate. If liquefaction of the surf-

[28] ABAG, 2003, *Earthquake Liquefaction Hazard Map for Foster City*. Accessed 11/6/12 at: http://www.abag.ca.gov/bayarea/eqmaps/liquefac/pickcityliq.html.
[29] Engeo, 2008, op cit.
[30] Engeo, 2008, op. cit.

icial silty sand deposits were to occur as a result of a large seismic event, surface depression is estimated to be less than 0.5 inch from liquefaction-induced settlement. [31]

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. In a lateral spread failure, a layer of ground at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward a river channel or other bank.[32] The lateral spreading hazard will tend to mirror the liquefaction hazard for a site. The preliminary geotechnical assessment concluded that although the surficial liquefiable deposits may be continuous toward Central Lake, located approximately 500 feet south of the site, the potential for lateral spreading was relatively low due to the density of the surficial deposits.[33]

(4) Landslides and Slope Stability

Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous movement (creep). The primary factors influencing the stability of a slope are: 1) the nature of the underlying soil or bedrock; 2) the geometry of the slope (height and steepness); 3) rainfall; and 4) the presence of previous landslide deposits. Regional mapping shows that the project area is mapped as Category 1a; Unstable, "Areas of 0 to 5 percent slope that include tidelands, marshlands, and swamplands that are underlain by moist, unconsolidated muds."[34] The site is generally flat and therefore not subject to typical landslide hazards; however, slope instability of construction period excavations could potentially occur either due to static loads created by new fill and building loads or due to transient seismic loads from shaking at the site.

(5) Unstable Soils, Settlement, and Differential Settlement

Differential settlement or ground subsidence could occur if buildings or other improvements were built on low-strength foundation materials (including imported non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material (Bay Mud), buried sloughs or levees, older un-engineered fill and/or new engineered fill). Although differential settlement generally occurs

[31] Ibid.
[32] ABAG, 2001, *The REAL Dirt on Liquefaction, A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area*, February.
[33] Engeo, 2008, op cit.
[34] USGS, 1979. *Relative Slope Stability and Land-use Planning in the San Francisco Bay Region, CA*. Professional Paper 944.

slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time.

The site-specific geotechnical assessment notes that the main geotechnical consideration for the planned development is total and differential settlement associated with the highly compressible Bay Mud deposits. The site is blanketed by up to 6 feet of medium dense fill, underlain by highly compressible Bay Mud to depths of about 40 feet. To provide the necessary foundation support for the proposed structures, the geotechnical assessment recommends a deep foundation system that derives support in the stiff clay that underlies the Bay Mud.[35]

(6) Expansive Soils

Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to buildings and infrastructure may occur if the potentially expansive soils were not considered in project design and during construction.

The geotechnical assessment notes that surface materials at the site consist of up to 6 feet of man-made fill.[36] Fill can generally be composed of varying amounts of natural soil materials, construction debris, dredging materials, municipal solid waste, and other materials.[37] However, as noted above, the history of Foster City indicates man-made fill for the general area was hydraulically pumped in from the San Bruno Shoal in San Francisco Bay, and consists primarily of sandy-silt. The geotechnical assessment notes that fill materials at the site were observed to be silty sand in the exploratory boring and identified as silty sand, sand, and gravelly-sand on the CPT logs. Thus, the surficial fill is generally non-expansive. A sample of the underlying Bay Mud was tested for Plasticity Index (PI), and the results indicated that the on-site Bay Mud deposits have a critically high expansion potential. [38]

d. Regulatory Setting

A description of State and local regulations related to geology, soils, and seismicity relevant to the proposed project is provided below.

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[35] Engeo, 2008, op cit.

[36] Ibid.

[37] U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, 2005, *Urban Soil Primer.* Accessed 11/6/12 at: http://soils.usda.gov/use/urban/primer.html.

[38] Engeo, 2008, op. cit.

(1) California Building Code

The 2010 California Building Code (CBC), which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations, is based on the 2009 International Building Code, and is the most current State building code. The 2010 CBC covers grading and other geotechnical issues, building specifications, and non-building structures. Foster City follows the most current State building codes. Foster City's Building Department is responsible for reviewing plans, issuing building permits, and conducting field inspections.

The CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards. Buildings less than or equal to 4,000 square feet also are required to prepare a geologic engineering report, except for one-story, wood-frame and light-steel-frame buildings of Type V construction that are located outside of the Alquist-Priolo Earthquake Faults Zones.

The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. Requirements for the geotechnical investigation are presented in Chapter 16 "Structural Design" and Chapter 18 "Soils and Foundation" of the 2010 CBC. The geotechnical investigation report would be reviewed by the Foster City Building Department prior to issuance of building permits to ensure compliance.

(2) Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA)

Surface rupture is the most easily avoided seismic hazard. The A-PEFZA was passed in December 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The A-PEFZA's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The A-PEFZA only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards (the Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides). The law requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures

for human occupancy. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. The evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back 50 feet from the fault trace. The project site is not located within an A-PEFZ.

(3) Seismic Hazards Mapping Act (SHMA)

In 1990, following the Loma Prieta earthquake, the California Legislature enacted the SHMA to protect the public from the effects of strong ground shaking, liquefaction, landslides, and other seismic hazards. The SHMA established a State-wide mapping program to identify areas subject to violent shaking and ground failure; the program is intended to assist cities and counties in protecting public health and safety. The SHMA 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. As a result, the CGS is mapping SHMA Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking, and landslides; primarily the San Francisco Bay area and Los Angeles basin. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. At the time of the preparation of this EIR, the area of the project has not yet been mapped by the CGS in conformance with the SHMA, although mapping is reportedly in progress.[39]

(4) City of Foster City

The Foster City Municipal Code and the Estero Municipal Improvement District (EMID) Code are a compilation of Foster City's and EMID's applicable ordinances (rules, regulations, or standards). They are the City and District's primary codes. Secondary codes include any other codes adopted by reference (e.g., building, fire safety, and electrical codes).[40] Applicable geologic and seismic safety regulations in the City's General Plan, Municipal Code, and the amendments to the Uniform Building Code (CBC as adopted in California) are described below.

[39] CGS, 2012, op cit.

[40] Foster City, 1995, *General Plan, Chapter 7, Safety Element*, adopted October. Website accessed 11/6/2012 at: http://www.fostercity.org/city_hall/docs/General-Plan-in-PDF-Version.cfm

General Plan (1993). The following goals, policies, and programs from the Foster City General Plan Safety Element related to seismic and geologic hazards pertain to the proposed project.

- *Safety Goal S-A Protect From Seismic and Geologic Hazards.* Protect the community from unreasonable risk to life and property caused by seismic and geologic hazards.
- *Policy S-1 Use Most Current Uniform Codes.* The City will use the most current uniform codes to review permits for new and modified structures.
- *Program S-a Geotechnical and Engineering Reports.* The City (Building Inspection Division) will require site specific geotechnical and engineering reports for new structures.

Municipal Code Ordinances: Title 15 - Buildings and Construction

- *Chapter 15.04 Building Code.* Title 15 of the Foster City Municipal Code includes amendments to the 2010 California Building Code that may affect the proposed project. These changes are detailed under individual chapters beginning with 15.04.010 of the Foster City Municipal Code.[41]

2. Impacts and Mitigation Measures

Impacts related to geology, soils, and seismicity that could result from implementation of the proposed project are described below. This section begins with criteria of significance, identifies less than significant impacts, and then describes potentially significant geotechnical impacts/hazards associated with the proposed project. Mitigation measures would reduce significant impacts to a less-than-significant level.

a. Criteria of Significance

The project would have a significant geology, soils, or seismicity impact if the result is to:

- Expose people or structures to substantial risk of loss, injury, or death involving:
  - Rupture of a known active or potentially active earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault;

[41] Foster City, 2012, *Foster City Municipal Code*. Website accessed 1 August 2012 at: http://www.codepublishing.com/CA/FosterCity/

  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides.
- Result in substantial soil erosion or 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 an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soils (as defined in Table 18-1-B of the 1994 Uniform Building Code) or corrosive soils, which could cause substantial risks to life or property, including damage to building foundations, pavements, utilities, and/or other improvements.
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

These criteria are adapted from the *CEQA Guidelines* Environmental Checklist. A criterion regarding septic tanks and alternative wastewater disposal systems is not included since the project would be served by a municipal wastewater system.

b. Less-Than-Significant Geology, Soils, and Seismicity Impacts

The most recent A-PEFZ Zoning maps indicate that the nearest active fault to the project site is the San Andreas Fault peninsula segment, approximately 5.6 miles to the southwest. Through an examination of CGS fault maps, it has been determined that no potentially active faults underlie the site.[42] The proposed project would therefore not be expected to be affected by rupture of a known active fault.

Potential impacts from loss of topsoil and soil erosion are discussed in Section V.F, Hydrology and Water Quality, of this EIR. The proposed project is within an area classified as MRZ-1, "Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged

[42] CGS, 2010, op cit.

that little likelihood exists for their presence."[43] The project would therefore not result in the loss of or hinder the availability of a known mineral resource of value locally or to the region or State, or as delineated on a local general plan, specific plan, or other land use plan.

c. Significant Geology, Soils, and Seismicity Impacts

Seismic hazards result from the primary and secondary effects of an earthquake, with the primary effect being ground rupture. Secondary effects include seismic shaking, seismically-induced ground failure including liquefaction and landslides. As noted above, ground rupture is not likely at the project site. Secondary effects are more widespread and potentially result in more damage and injury. Development of the proposed project could result in three significant impacts related to seismic hazards and soil stability, as discussed below.

Impact GEO-1: Project occupants would be subject to seismic shaking hazards. (S)

All structures in the Bay Area could be affected by ground shaking in the event of an earthquake on regional active faults. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials between the receptor and the epicenter. The 2010 CBC provides for increasingly stringent construction requirements on projects in areas of high seismic risk based on numerous interrelated factors. Very strong ground shaking is expected at the proposed project during predicted earthquakes on the San Andreas and other regional active faults. This level of seismic shaking could cause considerable damage to buildings at the site and could result in injuries to building occupants.

Secondary seismic shaking hazards at the site could include liquefaction, lateral spreading, and landslides within excavations. The preliminary geotechnical assessment predicts that liquefaction potential for surficial deposits is low to moderate at the site, and surface depression up to 0.5 inch could occur due to liquefaction-induced settlement. These surficial liquefiable deposits may be continuous toward Central Lake, located approximately 500 feet south of the site, and there is a potential for lateral spreading. The site is generally flat and therefore not subject to typical landslide hazards; however, slope instability of construction period excavations could potentially occur

[43] California Department of Mines and Geology, 1987 updated 1996. *Mineral Land Classification: Aggregate Minerals in the San Francisco-Monterey Bay Area*, California Department of Conservation.

either due to static loads created by new fill and building loads or due to transient seismic loads from shaking at the site.[44]

Implementation of the following three-part mitigation measure would reduce impacts related to seismic shaking hazards at the site to a less-than-significant level.

Mitigation Measure GEO-1: The following three-part mitigation measure shall be implemented:

GEO-1a: Prior to the issuance of any grading or construction permits for the project, a design-level geotechnical investigation shall be prepared by a licensed professional and submitted to the City Building Inspection Division for review and approval. The geotechnical investigation shall determine the proposed project's geotechnical conditions, including seismic shaking hazards and measures to address these hazards. The analysis presented in the geotechnical investigation shall conform to the California Division of Mines and Geology recommendations presented in the Guidelines for Evaluating Seismic Hazards in California. The investigation will include, as appropriate, the following: a site screening evaluation; evaluation of on- and off-site geologic hazards; quantitative evaluation of hazard potential; detailed field investigation; estimation of ground-motion parameters; evaluation of landslide, liquefaction, lateral-spreading, and ground-displacement hazards; and recommendations to reduce identified hazards.

The geotechnical investigation report shall include a finding that the proposed development fully complies with the California Building Code, applicable City ordinances, and the City Building Inspection Division requirements. The CBC and applicable City ordinances were developed to ensure that compliant structures would be "earthquake-resistant," not "earthquake-proof." The CBC is intended to protect people inside buildings by preventing collapse and allowing for safe evacuation. Structures built according to code should resist minor earthquakes undamaged, resist moderate earthquakes without significant structural damage, and resist severe earthquakes without collapse.

Mitigation Measure GEO-1b: Design review for the project shall include evaluation of fixtures, furnishings, and fasteners with the intent of min-

[44] Engeo, 2008, op. cit.

imizing collateral injuries to building occupants from falling fixtures or furnishings during the course of a violent seismic event.

Mitigation Measure GEO-1c: All design measures, recommendations, design criteria, and specifications set forth in the design-level geotechnical investigation shall be implemented as a condition of project approval.

Implementation of these mitigation measures would reduce impacts to occupants as a result of seismic shaking to a less-than-significant level. (LTS)

Impact GEO-2: Damage to structures or property related to man-made fill, unstable soils, or unstable subsurface materials resulting in settlement or differential settlement could occur. (S)

The site-specific geotechnical assessment notes that the approximately 6 feet of man-made fill at the site is underlain by up to 40 feet of young Bay Mud overlying 2 to 11 feet of stiffer old Bay Mud, then alluvial deposits, and bedrock at approximately 200 feet bgs.[45] Settlement of the Bay Mud from 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. Accordingly, the pile foundation system is recommended by the geotechnical assessment to be designed to accommodate the vertical loads of the structure as well as down-drag loads from settlement of the Bay Mud. Differential settlement may occur across subsurface features such as buried sloughs, abandoned levees, and/or in areas underlain by non-engineered fill 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.

Implementation of the following mitigation measure would reduce impacts to structures or property related to settlement or differential settlement to a less-than-significant level:

Mitigation Measure GEO-2: In addition to the requirements included in Mitigation Measure GEO-1, the designers of the proposed project's building foundations and improvements (including sidewalks, roads, driveways, parking areas, and utilities) shall consider the site being underlain

[45] Engeo, 2008, op. cit.

by Bay Mud and non-engineered fill. The design-level geotechnical investigation, prepared by a licensed professional, shall be fully compliant with CBC and include measures to ensure that potential damage related to compressible materials or soils and non-uniformly compacted fill is minimized. Future settlement from placement of new loads, including the addition of fill materials, shall be taken into account in the design of all structures and utilities. Design options may range from removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill, to construction of improvements to withstand the forces exerted during the expected settlements. All design measures, design criteria, and specifications set forth in the site-specific design-level geotechnical report, and the City Building Inspection Division standards shall be compliant with CBC and followed to reduce impacts associated with problematic soils to a less-than-significant level. The geotechnical consultant shall, with the construction contractor, verify design assumptions and provide monitoring to observe geotechnical aspects of foundation construction. (LTS)

Impact GEO-3: Damage to structures or property of the proposed project related to expansive (shrink-swell) and corrosive soils could occur. (S)

Expansive or corrosive soils could cause substantial damage to building foundations, piles, pavements, utilities, and/or other improvements. Structural damage such as warping and cracking of roads, driveways, parking areas and sidewalks, and rupture of utility lines may occur if the potentially expansive soils and the interface with imported fill are not considered during design and construction of improvements. The site-specific geotechnical assessment notes that the surficial fill deposits generally did not consist of materials prone to expansive behavior; however, the underlying Bay Mud deposits are subject to shrink-swell expansive behavior in response to changes in water content. The geotechnical assessment recommends that if future grading requires Bay Mud deposits to be excavated and reused as engineered fill, the Bay Mud deposits should be re-conditioned to reduce the expansive potential of the fill, and that reconditioned Bay Mud deposits should be placed below the zone of significant seasonal moisture fluctuation to minimize the effects of expansive soils.

Portions of the site consisting of Novato Clay were classified as having a high potential for corrosion to steel and concrete by the Natural Resources Conservation Service (NRCS).[46] The site-specific geotechnical assessment included

[46] NRCS, 2012, op. cit.

evaluation of possible corrosion impacts to site improvements for four selected soil samples.[47] The samples tested contained water-soluble sulfate concentrations classified as having "negligible" sulfate exposure to cement. The geotechnical assessment recommended that the design recommendations of the CBC be adopted regarding composition of foundation materials and subsurface structures in response to any potential corrosive conditions at the site, as necessary. The geotechnical assessment also noted that Bay Mud deposits are commonly corrosive to buried metal materials as well, and that piles or piers at the site would need to be selected to withstand these effects. The geotechnical assessment recommended that detailed soil corrosivity tests be conducted during design-level exploration and specific design recommendations for corrosion protection for buried metals be provided by a corrosion consultant. Implementation of the following two-part mitigation measure would reduce impacts to structures or property related to expansive soils or corrosion to a less-than-significant level:

Mitigation Measure GEO-3: The following two-part mitigation measure shall be implemented:

GEO-3a: The design-level geotechnical investigation shall include an evaluation of the potential for expansive soils on the site and shall be fully compliant with the CBC and include measures to ensure potential damage related to expansive soils is minimized or avoided. Mitigation options may range from removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles. All design criteria and specifications set forth in the design-level geotechnical investigation shall be implemented to reduce impacts associated with problematic soils.

GEO-3b: The design-level geotechnical investigation shall include an evaluation of the potential for corrosive soils on the site. If the results indicate corrosive soil conditions are present, appropriate measures to address these conditions shall be fully compliant with CBC and incorporated into the design of project improvements that may come into contact with site soils. Wherever corrosive soils are found in sufficient concentrations, the report shall provide recommendations 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-

[47] Engeo, 2008, op. cit.

site soils. In general, these recommendations are expected to include, but not be limited to, the following provisions:

- Protect buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric coated steel or iron (including all buried metallic pressure piping) against corrosion from soil.
- Protect buried metal and cement structures in contact with earth surfaces from chloride ion concentrations.
- Use sulfate-resistant concrete mix for all concrete in contact with the ground.
- Design and implement the most effective corrosion protection feasible.

All recommendations of the geotechnical investigations shall be implemented. The geotechnical consultant shall coordinate with the construction contractor to determine the corrosion protection system. (LTS)

F. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality characteristics, based on information obtained from: 1) a review of a geotechnical report prepared for the proposed project; 2) a reconnaissance of the project site conducted in November 2012; 3) and a review of the information provided as part of the project application and other published materials. This section also identifies potentially significant impacts that could result from implementation of the proposed project and provides mitigation measures to reduce identified impacts to a less-than-significant level, where appropriate.

1. Setting

This subsection provides a brief description of the existing hydrological setting at and near the project site; the regulations affecting water resources at the federal, State, and local level; and local policies and programs related to hydrology and water quality.

a. Existing Conditions

(1) Climate

The climate of the Foster City area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warmer dry summers. The approximate annual average high temperature is 71° Fahrenheit (F); the average low is 47° F.[1] The mean annual rainfall in the vicinity of the project site, for the period between 1906 and 2012, was approximately 19 inches, and primarily occurred from November through April.[2] During the period of record, annual rainfall has varied from 8.0 inches (1976) to 43 inches (1983), with a one-day high of 4.9 inches of precipitation on October 13, 1962.[3] Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every 3 years.[4]

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[1] Western Regional Climate Center, 2012a. *General Climate Summary Tables-Temperature, Redwood City, California,* 12 July, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7339, accessed August 29, 2012.

[2] Western Regional Climate Center, 2012b. *General Climate Summary Tables-Precipitation, Redwood City, California,* 12 July, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7339, accessed August 29, 2012.

[3] Ibid.

[4] Brown, William M. III, 1988. Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region, in *Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California,* eds. Stephen D. Ellen and Gerald F. Wieczorek,

(2) Runoff and Drainage

The project site is relatively flat with an existing ground surface elevation of approximately 5 to 7 feet NGVD 1929.[5,6] The project site is mostly vacant except for a temporary tent structure and associated parking lot and an easement in the northern corner of the site containing high-voltage electrical transmission lines. A gravel area in the eastern corner of the site is used for vehicle parking. Except for the area containing the tent structure and parking lot, the rest of the project site is undeveloped and covered with gravel and/or ruderal vegetation.

In a typical undeveloped setting, rainfall infiltrates the ground until the infiltration capacity is reached. When the ground becomes saturated or rainfall intensity exceeds the ground infiltration rate, runoff flows over the ground surface toward nearby creeks or drainage features. However, the project site, while largely undeveloped, has been disturbed and surface soils appear to be compacted. Infiltration into these soils is expected to be relatively low due to these compacted relatively fine-grained surface soils. When the limited infiltration capacity on the site is exceeded during rainfall events, water flows toward storm drain inlets located on the property and along curbs and gutters of streets surrounding the property.

Two separate public storm drain systems serve the project site. The system that serves the southern portion of the project site conveys stormwater southward across Shell Boulevard, which then drains into the Foster City Lagoon.[7] The system that serves the northern portion of the project site conveys stormwater northward across Foster City Boulevard, which then also drains into the Foster City Lagoon.[8]

(3) Flooding

Based on the Federal Emergency Management Agency (FEMA) revised Flood Insurance Rate Maps (FIRMs) for the vicinity of the project site, the site is

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U.S. Geological Survey Professional Paper 1434, http://pubs.usgs.gov/pp/1988/1434/pp1434.pdf, accessed September 18, 2012.

[5] The NGVD 1929 is a vertical control datum established to measure vertical positions or elevations based on mean sea level measurements circa 1929. For most purposes, NGVD is equivalent to mean sea level.

[6] The Foster City Datum is equal to the National Geodetic Vertical Datum of 1929 plus 100 feet. Source: Towne, Ray, 2012. Director of Public Works, Foster City, California, personal communication with BASELINE, 29 August.

[7] Brian Kangas Foulk, 1999. *Civic Center Master Plan Study, Final Report, Water, Sanitary Sewer, and Storm Drainage Systems, Foster City, California*, March 19.

[8] Ibid.

mapped as Zone X.[9] The Zone X designation indicates that the properties within this area are protected by levees from a 100-year flood. The revised FIRMs became effective on October 16, 2012. The FIRMs were revised as a result of the March 15, 2012 FEMA certification of the City of San Mateo Bayfront Levees south of San Mateo Creek.[10]

The Foster City Lagoon is part of the Foster City stormwater management system and is used by the City as a retention basin and to buffer the flooding effects of large storms. At its closest, the Foster City Lagoon is located approximately 400-feet southwest of the project site. Two diesel-powered pumps, each capable of moving approximately 125,000 to 140,000 gallons per minute, depending on tidal conditions, lower the water level of the lagoon in anticipation of large storms and/or the wet weather season.[11] The capacity of each pump is enough to prevent flooding during a 100-year storm.[12] Foster City maintains the lagoon with a surface elevation of minus 1 to 2 feet NGVD and routinely lowers the water level by an additional 0.5 to 1 feet to provide reserve storage capacity in the event of a storm.[13] This can provide in excess of 138 million gallons (423.5 acre-feet) of storage before the lagoon bulkhead is crested. The minimum elevation of the lowest living floor level within Foster City is several feet higher than the levee bulkhead elevation.[14] The pumps that regulate water levels in the lagoon are maintained and operated on a regular basis to ensure their performance during an emergency.

Based on regional hazard mapping, the project site could be subject to inundation in the event of a catastrophic failure of the Lower Crystal Springs Dam (LCSD), which is located approximately 5.5 miles west of the project site.[15] The LCSD is owned by the City and County of San Francisco and has a capacity of 57,910 acre-feet.[16] If LCSD should fail, water would flow through

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[9] Federal Emergency Management Agency, 2012. *Flood Insurance Rate Map (FIRM), San Mateo County, California, Community Panel Number 060318 0167 E*, 16 October, www.msc.fema.gov, accessed August 29, 2012.

[10] City of San Mateo, 2012. *Levee Project Update – June 2012*, http://www.cityofsanmateo.org/index.aspx?NID=1796, accessed August 29, 2012.

[11] Towne, Ray, 2012. Director of Public Works, Foster City, California, personal communication with BASELINE Environmental Consulting, 29 August.

[12] Ibid.

[13] City of Foster City, 2011. *Lagoon Levels,* http://www.fostercity.org/Services/water/Lagoon-Levels.cfm, accessed August 30, 2012.

[14] Towne, Ray, 2012, op. cit.

[15] Association of Bay Area Governments (ABAG), 1995. *Dam Failure Inundation Hazard Map for Foster City*, www.abag.ca.gov, accessed August 30, 2012.

[16] Department of Water Resources, 2010. *California Data Exchange Center: Lower Crystal Springs Reservoir*, http://cdec.water.ca.gov/cgi-progs/profile?s=CRY&type=dam, accessed August 30, 2012.

San Mateo Creek, spread out over portions of the City of San Mateo, and flow into Marina Lagoon on the western margin of Foster City.[17] The Foster City Public Works Department estimates that a failure of LCSD would result in a maximum flood height of about 2 feet at the County Fair Grounds in the City of San Mateo, located approximately one mile west of the City of Foster City.[18] This flood height is below the crest height (6 feet) of a levee along Marina Lagoon in Foster City, and therefore it is highly improbable that Lower Crystal Springs Dam failure would cause an inundation of Foster City.[19]

(4) Coastal Hazards

The location of the project site (near San Francisco Bay) and the elevation of the site (approximately 5 to 7 feet NGVD) may expose the site to coastal hazards, such as sea level rise, seiche, tsunami, or extreme high tides. The City of Foster City completed a Levee Improvement Program during 1993 and raised the City's Bay-facing levees to a crest height of approximately 10.0 feet NGVD.[20] In a letter dated July 23, 2007, FEMA notified the City of Foster City that it had certified the Foster City Levee, identified as levee P771, as meeting the criteria outlined in Title 44, Code of Federal Regulations Section 65.10.[21] As such, the area protected by the levee was classified as Zone X, protected by a levee from the 100-year flood.

Sea Level Rise

The earth has gone through several cycles of cooling and warming over recent geologic time, resulting in periods of glaciation with an associated sea level reduction and warming with associated sea level rise. The most recent cycle of global climate change (GCC) may be attributable to a warming trend of the earth's atmosphere (an increase of approximately 1.33˚F from 1906 to 2005[22]), which has resulted in, and is expected to continue to cause, sea level rise. The release of greenhouse gases through human activities is believed to be the primary cause of current GCC.[23,24] Refer to Section V.L for additional information about global climate change.

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[17] City of Foster City, 1995. *General Plan, Chapter 7, Safety Element*, adopted October. Available online at: http://www.fostercity.org/city_hall/docs/General-Plan-in-PDF-Version.cfm.

[18] Ibid.

[19] Ibid.

[20] Towne, Ray, 2012, op. cit.

[21] U.S. Department of Homeland Security, 2007. *Letter to Mr. Ray Towne, Director of Public Works, City of Foster City, CA: Letter of Levee Certification for Levee P771, FEMA*, July 23.

[22] International Panel on Climate Change, 2007. *Climate Change 2007: Synthesis Report – Summary for Policy Makers.* Core Writing Team, Pachauri, R.K and Reisinger, A. (eds). IPCC, Geneva, Switzerland, 104 pp. http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html.

[23] Ibid.

Based on long-term monitoring of stationary tidal gauges around the world, it is estimated that the current background rate of sea level rise is 0.07 to 0.08 inches per year.[25] Rates of sea level rise may vary at specific locations, as local subsidence or uplift affects the relative change in sea level between land masses and the ocean. In the San Francisco Bay area, the background rate of sea level rise has been estimated to be approximately 0.076 inches per year from 1900 to 2008.[26]

Seiche

A seiche is the oscillation of a body of water. Seiches occur most frequently in enclosed or semi-enclosed basins such as lakes, bays or harbors. They can be triggered in an otherwise still body of water by strong winds, changes in atmospheric pressure, earthquakes, tsunami, or tides. Triggering forces that set off a seiche are most effective if they operate at specific frequencies relative to the size of an enclosed basin. Coastal measurements of sea level often show seiches with amplitudes of a few centimeters and periods of a few minutes due to oscillations of the local harbor, estuary, or bay, superimposed on the normal tidal changes. Seiches are not considered a hazard in the San Francisco Bay because of the long periods and overtones of the Bay.[27] Additionally, a damaging seiche is unlikely to occur in Central Lake, which is a wide section of the Foster City Lagoon located approximately 400-feet southwest of the project site. Central Lake is a shallow, wide, and irregular channel with gently sloping banks, and these features limit wave formation.[28]

Tsunami

Tsunamis are long period water waves caused by underwater seismic events, volcanic eruptions, or undersea landslides. Tsunamis affecting the San Francisco Bay region would originate west of the Bay, in the Pacific Ocean. Areas that are highly susceptible to tsunami inundation tend to be low-lying

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[24] U.S. Environmental Protection Agency, 2012. *Climate Change Basics*, http://www.epa.gov/climatechange/basics/, accessed January 20, 2013.

[25] Titus, James G. and Narayanan, Vijay, 1995. *The Probability of Sea Level Rise,* U.S. Environmental Protection Agency, Washington, D.C., 186 pp. EPA 230-R95-008, October, http://repositories.tdl.org/tamug-ir/bitstream/handle/1969.3/25952/ 8881-Probability%20of%20Sea%20Level%20Rise.pdf?sequence=1, accessed September 17, 2012.

[26] National Academy of Sciences, 2012a. *Chapter 4, Sea-Level Variability and Change off the California, Oregon, and Washington Coasts*, in: Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, http://www.nap.edu/openbook.php?record_id=13389&page=R1, accessed September 17, 2012.

[27] Borrero et. al., 2006, op. cit.

[28] Engeo, Inc., 2008. *Preliminary Geotechnical Assessment, Village Square Development, Foster City, CA*. Submitted to Sares Regis Group of Northern California, LP., Engeo No. 7921.1.001.01, January 4.

coastal areas, such as tidal flats, marshlands, and former bay margins that have been artificially filled. Inundation or damage caused by a tsunami may disrupt highway traffic in those low-lying areas. Although the project site is located on artificial fill, it is not located within a tsunami inundation area.[29] Tsunamis entering San Francisco Bay through the relatively narrow Golden Gate would tend to dissipate as the energy of the wave spreads out as the Bay becomes wider and shallower.[30] The predicted maximum credible tsunami amplitude at the Potrero District of San Francisco (approximately 15 miles north of the project site) is estimated to be 5.9 feet[31] and the levees protecting Foster City are at 10 feet NGVD.

Extreme High Tides

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. Based on the 129-year record of daily high tides, the U.S. Army Corps of Engineers has developed an estimated 100-year high tide elevation for various locations in the 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.[32]

(5) Groundwater

The project site is within the San Mateo Plain sub-basin, which is located within the Santa Clara Valley Groundwater Basin, and it is bounded by San Francisco Bay to the east, 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. A geotechnical investigation conducted on the project site encountered groundwater at depths between 3½ and 6 feet below

[29] ABAG, 2009. *Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region*, www.abag.ca.gov, accessed September 17, 2012.

[30] Borrero, J., Dengler, L., Uslu, B., Synolakis, C., 2006. *Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay*, June 8. Report prepared for: Marine Facilities Division of the California State Lands Commission.

[31] Ibid.

[32] U.S. Army Corps of Engineers, 1984. *San Francisco Bay Tidal Stage vs. Frequency Study*.

ground surface.[33] Given the proximity of the project site to the San Francisco Bay, groundwater levels underlying the project site are expected to fluctuate due to tidal influences, seasonal changes, and infiltration of precipitation.

(6) Water Quality

The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the site and by the quality of San Francisco Bay water in areas where groundwater is affected by tides. Water quality is also affected by the composition of local geologic materials. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards. The project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), which is responsible for implementation of State and federal water quality protection statutes, regulations, and policies in the vicinity of the project site.

The Regional Water Board implements the Water Quality Control Plan (Basin Plan),[34] a master policy document for managing water quality in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. The San Mateo Plain groundwater sub-basin that underlies the project site is listed in the Basin Plan as providing the beneficial uses of municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply. At its closest, the Lower San Francisco Bay is located approximately 4,000-feet north of the project site and is listed as providing the beneficial uses of industrial service supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact and noncontact recreation, and navigation. The Foster City Lagoon, which receives runoff from the project site, is listed as providing the beneficial uses of estuarine habitat, wildlife habitat, and water contact and noncontact recreation.

Stormwater Quality

Pursuant to Section 402 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in the City of Foster City (the City is part of the San Mateo Countywide Stormwater Pollution Prevention Program) are regulated under the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R2-2009-0074, NPDES Permit

[33] Engeo, Inc., 2008, op. cit.

[34] San Francisco Bay Regional Water Quality Control Board, 1995 as appended through 2011. *Water Quality Control Plan*. www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

No. CAS612008, adopted October 14, 2009, Municipal Regional Permit (MRP). The MRP is overseen by the Regional Water Board. MRP Provision C.3 addresses post-construction stormwater management requirements for new development and redevelopment projects that add and/or replace 10,000 square feet or more of impervious area. Provision C.3 requires the City to require incorporation of site design, source control, and stormwater treatment measures into development projects, to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharges, and to prevent increases in runoff flows. The MRP requires that Low Impact Development (LID) methods are to be the primary mechanism for implementing such controls.

MRP Provision C.3.g pertains to hydromodification management. This MRP provision requires that stormwater discharges shall not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume shall be managed so that the post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The project site is within an area explicitly exempted from the hydromodification management requirements due to close proximity to the Bay and the predominance of engineered hardened drainage conveyances.[35]

In addition, projects disturbing more than one acre of land during construction are required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit).

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects such as pipeline installations. Construction General Permit activities are regulated at a local level by the Regional Water Board.

[35] San Mateo Countywide Water Pollution Prevention Program, 2011. *Hydromodification Management Plan,* December 5, http://www.flowstobay.org/bs_new_development.php, accessed September 17, 2012.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water body. The determination of the project risk level is made when the Notice of Intent is filed (and more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit requires dischargers to minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and best management practices (BMPs) that achieve Best Available Technology (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (BCT) for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is (1) to help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements outlined in the permit.

The SWPPP must also include a construction site monitoring program. The monitoring program includes, depending on the project risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

Groundwater Quality

Groundwater quality in the project area is characterized as slightly alkaline (mean pH of 7.3) with a hardness of 471 milligrams per liter (mg/L) of calcium carbonate ($CaCO_3$), classifying it as "very hard." In some areas, water quality may be impaired due to high concentrations of sodium, as a result of tidal influence.[36]

[36] California Department of Water Resources, 2004. *California's Groundwater: Santa Clara Valley Groundwater Basin, San Mateo Subbasin, Bulletin 118*, February 27.

b. Regulatory Setting

Applicable regulations related to hydrology and water quality are described below.

(1) Foster City Standard Conditions of Approval

Foster City has adopted *Standard Conditions of Approval* (COA) for large new and redevelopment projects. The following COAs related to stormwater drainage and infrastructure would apply to the proposed project.[37]

A hydrology/hydraulic analysis shall be completed on the existing storm drain systems serving the southern and northern portions of the project site to verify that they are adequately sized to handle the runoff from the project area. The existing storm drains shall be cleaned as necessary.

Pre-construction and post-construction survey reports shall be completed on the existing storm drain system serving the southern portion of the project site. Pre-construction and post-construction survey reports will be completed on the existing storm drain system serving the northern portion of the project site if the City deems it necessary based on the results of the hydrology/hydraulic analysis. Any necessary repairs to restore the facilities shall be an element of the reports.

(2) Foster City General Plan

The following goals, policies, and programs from the Foster City General Plan Safety Element related to hydrology and water quality pertain to the proposed project.

- *Safety Goal S-B Protect From Flood Waters*. Protect the community from unreasonable risk to life and property caused by flood hazards.
- *Policy S-4 Flood Protection.* The City will maintain the City's levees and lagoon system for flood protection.
- *Policy S-5 Flood Plain Regulations.* The City will control development to minimize risks to person and property within any special flood hazards area through flood plain regulations.
- *Program* S-*G Maintain Levees and Lagoon for Flood Protection.* The City (Public Works) 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".
- *Program S-H Flood Plain Regulations.* The City (Community Development Department) will evaluate any proposed development with in special flood

[37] Towne, Ray, 2012, op. cit.

hazard areas for conformance with the City's flood plain regulations as contained in Chapter 15.36 of the Foster City Municipal Code.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hydrology and water quality that could result from implementation of the proposed project. The section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential hydrology and water quality impacts associated with the proposed project. Mitigation measures are provided as appropriate.

a. Significance Criteria

The project would have a significant effect on hydrology or water quality if the result is to:

- Violate any water quality standards or waste discharge requirements.
- Create or contribute runoff that would be an additional source of water quality degradation.
- Result in substantial erosion or sedimentation on- or off-site that would affect the quality of receiving water.
- Create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems and/or increase upstream or downstream flooding and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Place housing/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, which would impede or redirect flood flow.
- Expose people or structures to a substantial risk of loss, injury or death involving flooding.
- Expose people or structures to a substantial risk of inundation by seiche, tsunami, extreme high tides, and/or sea level rise.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a significant net deficit in aquifer volume or a lowering of the local groundwater table level.
- 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 or siltation 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, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.
- Otherwise substantially degrade water quality.

b. Less-Than-Significant Hydrology and Water Quality Impacts

Implementation of the proposed project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary.

(1) Drainage Patterns, Stream and Rivers, and Erosion

The proposed project would change the existing drainage pattern on the project site as the site is currently vacant. However, the project would not modify streams or rivers as none exist in the vicinity of the project site. Due to both the lack of stream or rivers and the predominance of engineered hardened drainage conveyances on and surrounding the project site, the project is unlikely to result in changes that would generate substantial erosion or siltation, either on- or off-site.

(2) Stormwater Drainage Systems

Implementation of the proposed project would involve placement of new impervious surfaces on the project site, including buildings, access roadways, bicycle and pedestrian pathways, and surface parking lots. The placement of new impervious surfaces would result in increased runoff that could exceed the capacity of the existing storm drain systems and result in localized flooding.

A storm drainage system analysis for the project site was performed for a previously planned project and the results of this analysis indicate that the off-site storm drain systems have adequate capacity to support the development of both the project site and existing adjoining properties.[38] Currently, the only change to the existing off-site storm drain systems that is planned is the replacement of the 15-inch diameter storm drain line that crosses Foster City Boulevard with an 18-inch diameter line.[39] This would accommodate the increase in runoff resulting from the development of a parking lot in the northern portion of the site. In addition, prior to construction of the project, a hydrology/hydraulic analysis on the existing

[38] Brian Kangas Foulk, 1999, op. cit.

[39] Carlson, Barbee, & Gibson, Inc., 2012. *Preliminary Grading and Utility Plan – Civic Center Fifteen*. October 19.

systems would be performed in accordance with the City's Standard COA (COA 4.1 through 4.16 of the Master COAs). As required by COA 4.16, the analysis would verify whether the existing drainage infrastructure is adequate to receive and convey runoff from the project site. If the findings of the analysis reveal that implementation of the proposed project would create runoff beyond the capacity of the existing storm drain systems, the project would be required to upgrade undersized components as a condition of approval for the project. Prior to project approval, the design drainage plans of the proposed project would be subject to review by the Foster City Public Works Department to ensure that the proposed storm drainage system would be adequate to convey runoff under the proposed setting. In addition, as described below in Impact HYD-1, the project would be required to comply with NPDES permit conditions that specify on-site retention and treatment of stormwater, effectively reducing the rate and volume of runoff.

Adherence to existing City requirements will ensure that the project impact on the storm drainage systems will be less-then-significant.

(3) Flood Hazard

The proposed project includes construction of housing, retail, and public utility facilities on the project site. The project site is located within areas designated as Zone X by FEMA because it is protected from a 100-year flood by FEMA-certified levees. Therefore, the project would not place any structures within a 100-year flood zone and there is a less-than-significant potential for flooding of the site that would substantially threaten human safety or property.

As discussed under the Stormwater Drainage Systems section, above, the proposed project would include installation of a storm drain system designed under Foster City Design Criteria and reviewed and approved by the Public Works Department and/or Building Inspection Division to ensure that the stormwater conveyance system would perform in accordance with City requirements to protect the property from storm flooding. The City of Foster City can require any improvements to the storm drainage system deemed necessary (including improvements to stormwater conveyance pipes and other off-site improvements) to be incorporated into the conditions of approval for the project. Adherence to these requirements would reduce the risk of on- and off-site localized flooding due to potential increases in the rate or amount of surface runoff or changes in site drainage patterns to a less-than-significant level.

The project site is located within a mapped dam failure inundation area for the LCSD, [40] which is under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams. Dam failure is a low probability event that can be caused by earthquakes or overflow. Potential failure of the LCSD was further reduced by completion of a seismic retrofit that was completed in May 2012. The seismic retrofit project involved widening the spillway, raising the parapet wall, and replacing the stilling basin with a new, larger facility.[41] Existing dams under State and federal jurisdiction are periodically inspected to ensure that they are adequately maintained and that identified deficiencies are corrected.[42] Regular inspections and required maintenance of the dams substantially reduce the potential for catastrophic failure. The hazard from flooding due to dam failure inundation would be less-than-significant because 1) recent seismic retrofits of the LCSD ensures that dam failure is a low probability event; and 2) as described in the Settings Section above, the estimated 2-foot inundation level near the project site would be contained by the Marina Lagoon and would not reach the project site.

(4) Coastal Hazard

Between 2000 and 2050, a mean sea level rise of 11.0 inches is projected in the San Francisco Bay area, though estimates range from 4.84 to 23.9 inches.[43] The 100-year extreme high tide at Foster City is estimated to be 7.1 feet.[44] The cumulative extreme high tide combined with the highest potential sea level rise by 2050 (23.9 inches or about 2.0 feet) could crest at 9.1 feet (7.1 feet plus 2.0 feet) NGVD. The existing Foster City levees, with an elevation of approximately 10 feet NGVD or higher, would provide adequate protection from sea level rise, extreme high tides, seiches, and tsunamis, all of which tend to present hazards for sites at elevations lower than 10 feet NGVD. Coastal hazard threats to the project site are therefore considered less-than-significant.

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[40] ABAG, 1995, op. cit.

[41] San Francisco Public Utilities Commission, 2012. *Lower Crystal Springs Dam Improvements (WSIP)*, http://216.119.104.145/bids/projectDetail.aspx?prj_id=128, accessed September 17, 2012.

[42] California Department of Water Resources, Division of Safety of Dams, 2012. *Statutes and Regulations Pertaining to Supervision of Dams and Reservoirs*, http://www.water.ca.gov/damsafety/docs/statutes-regulations.pdf, accessed September 17, 2012.

[43] National Academy of Sciences, 2012b. *Chapter 5: Projections of Sea Level Change*, in: Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, http://www.nap.edu/openbook.php?record_id=13389&page=R1, accessed September 17, 2012.

[44] U.S. Army Corps of Engineers, 1984, op. cit.

(5) Groundwater Supplies

Dewatering is expected to occur in the construction phase of the proposed project, but no local groundwater supplies will be used during the operational phase.[45] The short-term dewatering of shallow groundwater during construction activities would not contribute to the depletion of local groundwater supplies or reduce the amount or quality of water available for public water supplies. The project will not interfere with groundwater recharge via water infiltration from streams or creeks as none exist in the vicinity of the project site. Additionally, the project site is not located in a groundwater recharge area, as it is underlain by young bay mud 34 to 38 feet thick and old bay mud 2 to 11 feet thick.[46] Bay mud consists of dense clay deposits through which infiltration is minimal. As a result, the increase of impervious surfaces due to development of the project site will not interfere with groundwater recharge.

c. Significant Hydrology and Water Quality Impacts

Implementation of the proposed project could result in a significant impact related to water quality, as described below.

Impact HYD-1: Construction period and operation period activities could result in degradation of water quality in Foster City Lagoon and the Bay by reducing the quality of stormwater runoff. (S)

(1) Construction-Period Impacts

Demolition, excavation, grading, and construction on the project site would require disturbance and exposure of shallow soils through removal of existing structures (i.e., temporary tent structure and associated utilities), pavements, and vegetative cover. During the construction period, excavation and grading activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavations on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in water courses outside of the project site. The accumulation of sediment could result in blockage of flows, potentially causing increased localized ponding or flooding.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

[45] Engeo Inc., 2008, op. cit.
[46] Ibid.

(2) Operation Period Impacts

New construction and intensified land uses at the project site would result in increased vehicle use and the potential discharge of associated pollutants. Leaks of fuel or lubricants, tire wear, brake dust, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from the proposed landscaped areas may contain residual pesticides and nutrients. Long-term degradation of runoff water quality from the site could adversely affect water quality in the receiving waters.

Mitigation Measure HYD-1: Implementation of the following two-part mitigation measure would reduce construction- and operation-period impacts to water quality to a less-than-significant level:

> HYD-1a: Consistent with the requirements of the Statewide Construction General Permit, the project applicant shall prepare and implement a SWPPP designed to reduce potential adverse impacts to surface water quality during the project construction period. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities 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 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 BAT/BCT standard; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.
>
> The SWPPP shall be prepared by a Qualified SWPPP Developer. 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 or the Caltrans Storm Water Quality Handbook Construction Site BMPs Manual.
>
> The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project Risk Level, sampling of the site effluent and receiving

waters. A Qualified SWPPP Practitioner (QSP) shall be responsible for implementing the BMPs at the site. The QSP shall also be responsible for performing all required monitoring, and BMP inspection, maintenance, and repair activities.

HYD-1b: The project sponsor shall fully comply with the C.3 provisions of the MRP. Responsibilities include, but are not limited to, designing BMPs into project features and operations 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 requirements of the San Mateo Countywide Water Pollution Prevention Program, as outlined in the August 2012 C.3 Stormwater Technical Guidance manual (or updated version), shall be incorporated into project designs. 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. Funding for long-term maintenance of all BMPs must be specified (as the City will not assume maintenance responsibilities for these features). The project sponsor shall comply with all requirements of the City's standard COA. At a minimum, in accordance with the COAs, the hydrology/hydraulic analysis shall be completed on the existing storm drain system to verify that it is adequately sized to accommodate the runoff from the project. Modifications to the system shall be funded by the project sponsor as needed. The project sponsor 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 Department and/or Building Inspection Division for review and approval.

Both the SWPPP and drainage system maintenance plan must be approved by the City prior to approval of the grading plan.

Implementation of this two-part mitigation measure will reduce this impact to a less-than-significant level. (LTS)

G. BIOLOGICAL RESOURCES

This section summarizes information on the biological resources of the site and provides an evaluation of the potentially significant impacts on sensitive resources.

Biological resources were identified through the review and compilation of existing information and conducting of field reconnaissance surveys. The review provided information on general resources in the area, the extent of sensitive natural communities, jurisdictional wetlands, and the distribution and habitat requirements of special-status species that have been recorded from or are suspected to occur in the project vicinity. Huffman and Associates (Huffman) was retained by Foster City in February 1998 to evaluate wetland issues and U.S. Army Corps of Engineers (Corps) jurisdiction for the Civic Center Master Plan, which encompassed a 27-acre planning area and included the project site. A total estimate of approximately 1.1 acres of scattered seasonal wetland features were mapped within the Civic Center Master Plan area by Huffman, most of which was located outside the current project site boundaries. The Corps subsequently determined that there were no jurisdictional wetlands within the Civic Center Master Plan area and on the current project site, and that a permit would not be required for any proposed fill activities.[1]

A series of field reconnaissance surveys were conducted by Environmental Collaborative for this Draft EIR, building upon previous field reconnaissance surveys conducted by Environmental Collaborative for the Civic Center Master Plan EIR and the previous Mirabella Parkview project proposed for the site. The field reconnaissance for the Mirabella Parkview Project was conducted on September 1, 2008. A follow-up field reconnaissance was conducted on February 12, 2013 to confirm that field conditions hadn't changed appreciably in the past five years. The field reconnaissance surveys served to verify conditions on the site and provide updated assessments of habitat suitability for special-status species.

1. Setting

The existing conditions of the site and its environment related to biological resources are described below.

[1] U.S. Army Corps of Engineers, 1999, File Number 241075, Letter to Mr. Terry Huffman, Huffman and Associates, from Calvin C. Fong, Chief, Regulatory Branch, 1 February.

a. Existing Conditions

The existing conditions of the project site related to biological, wetlands, and special-status species are described below.

(1) Vegetation and Wildlife

According to historical land use information, the project site was part of a salt water marsh in 1899. The site has been extensively altered by past filling activities associated with the development of Foster City in the 1960s. Habitat types on the site are now limited to non-native grassland, existing paved and graveled surfaces, and remnant small scattered areas of degraded, hydrologically isolated seasonal wetlands. Given the extent of past disturbance, none of the remaining cover types would be considered sensitive natural communities under the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW), as discussed further under the Regulatory Setting below. The following describes existing biological conditions at the project site.

(2) Non-Native Grassland

Most of the site is either barren or supports a cover of non-native grassland and ruderal species. The grasslands are dominated by non-native annual and perennial species, such as perennial ryegrass (*Lolium perenne*), wild oat (*Avena fatua*), saltgrass plantain (*Plantago* sp.), and filaree (*Erodium* sp.). A few weedy species also occur in the grasslands, such as sweet fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativus*), and bristly ox-tongue (*Picris echioides*). Due to their abundance and non-native origin, the grasslands are not considered a sensitive natural community by the CNDDB.

The grasslands on the site are of limited value to wildlife due to the poorly developed cover, extent of past disturbance, and isolation from other undeveloped land. Species observed or suspected to occur on the site include: black-tailed jackrabbit, California vole, mourning dove, rock dove, and killdeer. Droppings of geese, which most likely frequent the site to graze on the young grasses and forbs, were observed throughout the grassland. A number of predatory birds, such as American kestrel, black-shouldered kite, red-tailed hawk, and northern harrier, may occasionally forage in the open grasslands, but no evidence of any nests or nesting activity was observed on the site.

(3) Seasonal Wetland Habitat

Seasonal wetland habitat on the site consists of scattered pockets of degraded seasonal wetlands in the remaining ruderal grasslands. The seasonal wetlands occur within shallow topographic depressions in the uneven topography on the eastern portion of the site, where the depressions in the past fill

saturate the underlying soil for sufficient duration to support hydrophytic species, primarily around the transmission towers. These seasonal wetlands are scattered in areas that are otherwise upland in character, which were partially filled during development of Foster City in the 1960s and are now dominated by grasslands. Hydrophytic vegetation indicative of the scattered seasonal wetlands include: rabbitfoot grass (*Polypogon monspeliensis*), cutleaf plantain (*Plantago coronopus*), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). This disturbed wetland habitat has not been defined as a distinct natural community by the CNDDB, and due to its dominance by non-native species, and is not considered a sensitive natural community type. As noted previously, the scattered seasonal wetlands and other remnant wetlands on the site and larger Master Plan area were not considered jurisdictional by the Corps in their previous determination.

Wildlife species associated with the seasonal wetlands are common to grassland and ruderal habitat. These include small birds and mammals, such as California vole and killdeer. When ponded water is present, the seasonal wetlands are most likely attractive to waterfowl, such as mallard ducks and Canadian geese. However, they are of relatively low value due to their man-made origin, limited cover and small size, and extent of surrounding development.

(4) Special-Status Species

The following provides a discussion of special-status species and conclusions regarding occurrence on the site. Special-status species[2] are plants and animals that are legally protected under the State and/or Federal Endangered Species Acts[3] or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated popu-

[2] Special-status species include: designated rare, threatened, or endangered and candidate species for listing by the CDFW; designated threatened or endangered and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS) or NOAA Fisheries; species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on lists 1A, 1B and 2 in the *Inventory of Rare and Endangered Vascular Plants of California* of the California Native Plant Society (CNPS); and possibly other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for State or Federal status, such as those included on list 3 in the CNPS *Inventory* or identified as animal "Species of Special Concern" by the CDFW.

[3] The Federal Endangered Species Act (FESA) of 1973 declares that all Federal departments and agencies shall use their authority to conserve endangered and threatened plant and animal species. The California ESA (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

lations, nesting, or denning locations, communal roosts and other essential habitat. The discussion under Regulatory Setting below provides additional information on special-status species.

(5) Special-Status Animal Species

According to records maintained by the CNDDB of the CDFW, special-status animal species that have been reported from the Foster City vicinity include: Edgewood blind harvestman (*Calicina minor*), western snowy plover (*Charadrius alexandrinus nivosus*), bay checkerspot butterfly (*Euphydryas editha bayensis*), California black rail (*Laterallus jamaicensis coturniculus*), double-crested cormorant (*Phalacrocorax auritus*), California clapper rail (*Rallus longirostris obsoletus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), and San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). Many of these species have legal protective status under the State and/or Federal Endangered Species Acts. However, none of these or any other special-status animal species is expected to possibly occur on the site due to the absence of suitable habitat. Past filling activities, on-going disturbance, and the extent of development surrounding the site precludes the occurrence of any species of concern. This includes possible nesting by a number of special-status bird species, including more common raptor species protected under State Fish and Wildlife Codes and the federal Migratory Bird Treaty Act.

(6) Special-Status Plant Species

Several special-status plant species have also been reported from coastal salt marsh and grassland habitat of San Mateo County. Species of particular concern include: San Francisco gumplant (*Grindelia hirsutala* var. *maritima*), San Francisco lessingia (*Lessingia germanorum*), white-rayed pentachaeta (*Pentachaeta belidiflora*), hairless popcorn flower (*Plagiobohrys glaber*), and San Francisco campion (*Silene verecunda* ssp. *verecunda*). These species also have varied legal status under the State and federal Endangered Species Acts, and most are considered rare (List 1B) by the CNPS. These species have not been detected in surveys of the site conducted over the past 10 years, and the extent of past disturbance and man-made source of soil on the site precludes the occurrence of populations of these or other special-status plant species.

(7) Wetlands

The following provides a discussion of wetlands and conclusions regarding occurrence on the site. Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a region-

al and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. The CDFW, Corps, and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features. The discussion under Regulatory Setting below provides additional information on jurisdictional wetlands and other waters.

A wetland delineation was conducted in 1998 by Huffman to determine the extent of habitat within the Civic Center Master Plan area that may be subject to Corps jurisdiction. At the time, an estimated 1.1 acres of isolated emergent palustrine and seasonal wetlands were determined to meet the criterion as jurisdictional habitat under Section 404 of the Clean Water Act, located primarily in the eastern portion of the original 27-acre Civic Center Master Plan area. Only a few smaller scattered seasonal wetland depressions were located on the current 15-acre site. Subsequent to preparation of the wetland delineation by Huffman, the Corps determined that proposed fill activities would be exempt from their jurisdiction, and that a permit would not be required.[4] The Corps also determined that no jurisdictional waters are assumed to occur on the site. Exemptions from Corps jurisdiction are sometimes made in the following situations: wetlands have formed incidental to ongoing development activity, wetlands are isolated or created as part of a man-made activity, wetlands were created to function for water treatment, or other factors. The determination by the Corps that the on-site wetlands were exempt from Corps Jurisdiction was valid for 5 years and has now expired. Confirmation that any remaining small areas of scattered seasonal wetlands remain exempt from Corps jurisdiction will need to be made before these areas can be filled. However, because field conditions have not changed appreciably, it is highly likely that the Corps original determination will be confirmed.

With respect to State regulations affecting the project, the RWQCB may consider the seasonal wetlands to be regulated waters of the State under the Porter-Cologne Act. Although the loss of these scattered seasonal wetland features would be considered relatively minor from the standpoint of biological functions and values, the project must conform with State and federal regulations regarding protection of any jurisdictional waters, including by obtaining appropriate authorizations, if necessary.

[4] Corps, 1999, op. cit.

b. Regulatory Setting

Federal, State, and local regulations have been enacted to provide for the protection and management of sensitive biological and wetland resources. This section outlines the key regulations that apply to these resources.

(1) Federal and State Regulations

On the federal level, the U.S. Fish and Wildlife Service (USFWS) is responsible for protection of terrestrial and freshwater organisms through implementation of the federal Endangered Species Act (ESA) and the Migratory Bird Treaty Act. The National Oceanic and Atmospheric Administration Marine Fisheries Service (NOAA Fisheries) is responsible for protection of anadromous fish and marine wildlife. The Corps has primary responsibility for protecting wetlands under Section 404 of the Clean Water Act (CWA). The Corps also regulates navigable waters under Section 10 (33 U.S.C. 403) of the Rivers and Harbors Act.

At the State level, the CDFW is responsible for administration of the California Endangered Species Act (CESA), and for protection of streams and water bodies through the Streambed Alteration Agreement process under Section 1600 of the California Fish and Game Code. Certification from the RWQCB is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the CWA and EPA Section 404(b)(1) Guidelines. The RWQCB also has jurisdiction over waters of the State not regulated by the Corps under the Porter-Cologne Act. The following discusses in more detail how State and federal regulations address special-status species, wetlands, and other sensitive natural communities.

Special-Status Species

Special-status species are plants and animals that are legally protected under the State and/or federal ESAs, the Migratory Bird Treaty Act, the California Fish and Wildlife Code (sections 3503, 3503.5, 3511, 3513, 3515, and 4700), or other regulations. In addition, pursuant to CEQA Guidelines Section 15380, special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the federal ESA and CESA often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species. "Take" as defined by the federal ESA means to "harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant ob-

struction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modifications or degradation. The CDFW may also consider the loss of listed species habitat as "take," although this policy lacks statutory authority and case law support under the CESA.

The CDFW also maintains informal lists of California "Special Concern Species" (SSC) species. These species are broadly defined as animals that are of concern to the CDFW because of population declines and restricted distribution, and/or because they are associated with habitats that are declining in California. These species are inventoried in the CNDDB, focusing on nesting, roosting, and congregation sites for non-listed species. In addition, wildlife species designated as "Fully Protected" or "Protected" may not be taken or possessed without a permit from the Fish and Wildlife Commission and/or the CDFW. The CESA prohibits the take of any plant listed as endangered, threatened, or rare. A "rare" plant species is one not presently threatened with extinction but may become endangered if its present environment worsens. State listing of plants began in 1977 with passage of the Native Plant Protection Act (NPPA). The CESA expanded upon the NPPA and enhanced legal protection for plants. To align with federal regulations, CESA created the categories of threatened and endangered species. It grandfathered all rare animals into the CESA as threatened species, but did not do so for rare plants.

The California Native Plant Society (CNPS) is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the State, as listed in the Inventory of Rare and Endangered Plants of California. CNPS has recently updated their rating system for the rarity of special-status plants, and now include both a California Rare Plant Rank and a Threat Rank. CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. Under Section 15380, CEQA provides protection for both State-listed species and for any other species which can be shown to meet the criteria for State listing. The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A (Presumed extinct in California), 1B (Rare, threatened, or endangered in California and elsewhere), and 2 (Rare and endangered in California, but are more common elsewhere) in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 (Plant

species for which additional data is needed – a review list) and 4 (Plant species of limited distribution - a watch list).

Wetlands and Other Waters of the United States

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or groundwater, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The CWA was enacted to address water pollution, and to establish regulations and permit requirements for construction activities that affect storm water, dredge, and fill material operations, and water quality standards. This regulatory program requires that discharges to surface waters be controlled under the National Pollutant Discharge Elimination System permit program, which applies to sources of water runoff, private developments, and public facilities.

Under Section 404 of the CWA, the Corps is responsible for regulating the discharge of fill material into waters of the United States. The term “waters” includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity. In general, a permit must be obtained before fill can be placed in wetlands or other waters of the United States. The type of permit is determined by the Corps based on the amount of acreage and the purpose of the proposed fill. Certain activities in wetlands or “other waters” are automatically authorized or granted a nationwide permit which allows filling where impacts are considered minor. Eligibility for a nationwide permit simplifies the permit review process. Nationwide permits cover construction and fill of waters of the United States for a variety of routine activities, such as minor road crossings, utility line crossings, streambank protection, recreational facilities, and outfall structures. To qualify for a nationwide permit, a project must demonstrate that it has no more than a minimal adverse effect on the aquatic ecosystem, including species listed under the ESA. This typically means that there will be no net loss of either habitat acreage or habitat value, resulting in appropriate mitigation where fill activities are proposed.

The Corps assumes discretionary approval over proposed projects where impacts are considered significant, requiring adequate mitigation and permit approval. To provide compliance with the United States Environmental Protection Agency's (U.S. EPA's) Section 404(b)(1) Guidelines, an applicant must demonstrate that the proposed discharge is unavoidable and is the least environmentally damaging practicable alternative that will achieve the overall project purpose. The 1990 Memorandum of Agreement between the U.S. EPA and Corps concerning the Determination of Mitigation under the Guidelines prioritizes mitigation, with the first priority to avoid impacts, the second to minimize impacts, and the third to provide compensatory mitigation for unavoidable impacts.

Jurisdictional authority of the CDFW over wetland areas is established under Section 1600 of the Fish and Wildlife Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Wildlife Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake without notifying the CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. The Wetlands Resources Policy of the CDFW states that the Fish and Wildlife Commission will strongly discourage development in or conversion of wetlands, unless, at a minimum, project mitigation assures there will be no net loss of either wetland habitat values or acreage.

In addition, the RWQCB is responsible for upholding State water quality standards. Pursuant to Section 401 of the CWA, projects that apply for a Corps permit for discharge of dredge or fill material, and projects that qualify for a nationwide permit must obtain water quality certification from the RWQCB. The RWQCB is also responsible for regulating wetlands under the Porter-Cologne Act, which may include hydrologically isolated wetlands no longer regulated by the Corps under Section 404 of the CWA. Federal Supreme Court rulings have limited Corps jurisdiction, but the RWQCB in some cases continues to exercise jurisdiction over these features.

Sensitive Natural Communities

In addition to species-oriented management, protecting habitat on an ecosystem-level is increasingly recognized as vital to the protection of natural diversity in the State. This is considered the most effective means of providing long-term protection of ecologically viable habitat, and can include whole watersheds, ecosystems, and sensitive natural communities. Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species.

Although sensitive natural communities have no protected legal status under the State or federal ESAs, they are provided some level of protection under CEQA. CEQA Guidelines identify potential impacts on a sensitive natural community as one of six significance criteria, listed in Section 2.a below. As an example, a discretionary project that is constructed on any riparian habitat, native grassland, valley oak woodland, or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality, and degree of past disturbance, and the anticipated impacts to the specific community type. Where determined to be significant under CEQA, the potential impact would require mitigation through avoidance, minimization of disturbance or loss, or some type of compensatory mitigation when unavoidable.

(2) Local Regulations

In addition to protection provided by State and federal regulations, such as the ESA and CWA, Foster City also recognizes the importance of preserving sensitive biological and wetland resources. The following goals, policies and programs from the Foster City General Plan Conservation Element related to biology pertain to the proposed project.

Goal PC-G Protect and Conserve Natural Resources. Protect and conserve wildlife habitat, energy resources, air quality, and the quality and quantity of water resources.

- *Goal C-A.* Protect and conserve wildlife habitat, energy resources, land resources, air quality, and the quality and quantity of water resources.
- *Policy 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.
- *Program C-y Wetland Habitat.* Protect wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas.

2. Impacts and Mitigation Measures

The analysis of the potential impacts on biological resources as a result of project implementation is presented below. This section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant, identifies less-than-significant impacts, and the potentially significant biological impacts associated with the proposed project.

Where necessary, mitigation measures are provided to reduce significant impacts to a level of less than significant.

a. Criteria of Significance

The project would have a significant effect on biological resources if the result is to:

- 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 CDFW or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or the USFWS;
- Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- Substantially interfere 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 site;
- Conflict with any local policies or ordinances protecting biological resources, such as those outlined within the Foster City Municipal Code or General Plan; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan.

b. Less-Than-Significant Biological Resources Impacts

The impacts of the proposed project on general vegetation and wildlife would be less-than-significant due to the absence of any sensitive natural community types, extent of surrounding urban development, and the limited habitat values of the site. In addition, there are no Habitat Conservation Plans or Natural Area Community Plans encompassing the site or vicinity, and no conflicts with these types of plans are therefore anticipated.

Implementation of the proposed project would require elimination of the remaining vegetative cover on the site. Smaller resident mammals and reptiles would be displaced during rough grading, and common birds and larger mammals would be displaced as development plans are implemented. Bird species that might utilize the non-native grassland habitat for foraging, including raptors, would no longer frequent the site following construction.

The lack of protective covers makes it unlikely that birds actually nest on the site. Moreover, the wildlife species affected by the loss of existing vegetative cover are all relatively common species. This loss of local wildlife would not be considered significant as none of these are special-status species or recognized by the CDFW as Special Concern Species, and all of the affected species are relatively abundant at other locations where suitable habitat remains.

No significant adverse impacts on wildlife habitat associated with the San Francisco Bay and nearby Don Edwards National Wildlife Refuge are anticipated as a result of project implementation. Existing roadways, parking lots, and structures separate the site from the nearby open waters of the National Wildlife Refuge and San Francisco Bay. Migratory wildlife can be attracted to night-time light sources, but the existing development that surrounds the site, all of which have their own source of night-time lighting, would be closer to the natural habitat of the bay than the project. The height and scale of the new structures on the site, and the night-time lighting generated by the proposed project would not be out of character with the existing development which surrounds the site, and no significant contribution to ambient night-time illumination that could affect wildlife movement and other activities is anticipated.

As landscaping matures and provides foraging opportunities, protective cover, and suitable nesting habitat, the site would eventually be used by wildlife common to suburban areas, such as mourning dove, mockingbird, American robin, house sparrow, and house finch.

No special-status plant or animal species have been reported from or are suspected to occur on the site due to the extent of past disturbance and absence of suitable habitat. Development of the site would eliminate marginal, potential foraging habitat for several species of raptors. Destruction of raptor nests in active use is prohibited under State and federal law. However, nesting habitat is absent from the site due to the lack of protective cover, burrows, or suitable nesting trees and shrubs, and no significant adverse impacts on raptors or other special-status species are anticipated.

Secondary impacts of sedimentation on the open waters of the San Francisco Bay could occur unless an adequate erosion control and sedimentation plan is prepared and implemented as part of the project. Mitigation Measure HYD-1a in Section V.F, Hydrology and Water Quality, requires preparation of an erosion and sediment control plan that would address construction and long-term potential secondary impacts to water quality as a result of developing the site.

c. Significant Impacts

Implementation of the proposed project would result in a significant impact related to biological resources, as described below.

Impact BIO-1: Development of the proposed project could eliminate scattered seasonal wetlands that have formed on fills on the site. (S)

Development of the site could eliminate the scattered seasonal wetlands previously identified on the project site, but the Corps determined in 1999 that these features are exempt from their jurisdiction and a permit would not be required. Corps Permit Number 9318-49, issued in 1976, allowed for filling the site and vicinity as part of the larger Master Plan area. Since that authorization, grading and development has occurred over much of the original 27-acre Civic Center Master Plan area. City Hall was constructed in 2001 and 2002, and the NPJC and overflow parking lot was constructed from 1999 to 2005. On the project site, a temporary on-site storage tent was constructed and installed in 2001. The remaining scattered seasonal wetland areas are dominated by non-native species and are of limited habitat value, and no mitigation for their loss is considered necessary from a CEQA biological standpoint. However, the Corps determination that allowed for fills on the original 27-acre Master Plan site has now expired, and the extent of any agency jurisdiction over the remaining seasonal wetlands must be confirmed. There remains a possibility that the Corps and/or RWQCB may require compensatory mitigation for the proposed fills of the remaining scattered seasonal wetlands, if they are in fact now considered federal and/or State jurisdictional waters. The following mitigation measure would reduce this impact to a less-than-significant level.

> Mitigation Measure BIO-1: An updated wetland delineation shall be prepared by a qualified wetland specialist and submitted to the Corps for verification. If jurisdictional wetlands are confirmed on the site, and no longer considered exempt from Corps and/or RWQCB jurisdiction, appropriate authorizations shall be obtained prior to any fill activities. This may include the need for compensatory mitigation to ensure conformance with the no-net loss of wetlands habitat on a regional and State-wide level. Compliance with any requirements of possible jurisdictional agencies would ensure that any direct or secondary effects of the project on possible jurisdictional agencies would be adequately addressed. (LTS)

H. HAZARDS AND PUBLIC SAFETY

This section evaluates the potential effects of the proposed project related to exposure of people to hazards and hazardous materials[1] during and following construction of the project. The evaluation was based on a review of available information included with the application, review of previous environmental assessments, site reconnaissances conducted in August 2008 and November 2012, and a review of other published materials. Potential public health and safety impacts that would result from implementation of the proposed project are described, and mitigation measures are recommended where appropriate.

1. Setting

This section summarizes the hazardous building materials, regulatory framework for hazardous materials and hazardous waste; lead, asbestos; and applicable worker health and safety requirements. Findings of recent studies regarding potential health effects from exposure to electromagnetic fields (EMFs) are also described. EMFs are a potential concern on the project site because transmission lines traverse the northeastern portion of the site. This section also describes the current use and storage of hazardous materials at the project site.

a. Project Site Hazardous Materials Setting

Several environmental investigations have been completed in support of the proposed project. The findings of these investigations are summarized briefly below.

(1) Phase I Environmental Site Assessment (ESA), March 2008

Potential hazardous materials issues at and near the project site were evaluated in a Phase I ESA conducted in March 2008.[2] The scope of the Phase I in-

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (California Health and Safety Code Section 25501).

[2] Engeo Incorporated, 2008a. *Phase One Environmental Site Assessment, Village Square Development, Foster City, Californi*a, Draft Report. March 31. Based on information provided by Engeo, this draft report was never finalized because a Phase II was subsequently prepared.

vestigation included a field reconnaissance, a review of historical land use information and regulatory agency databases, and interviews with persons knowledgeable about the past and present uses of the project site.

Previous Reports

The 2008 Phase I ESA summarized the findings of a previous Phase I ESA prepared for the project site in August 2007. The 2007 Phase I ESA did not find any evidence of hazardous materials use or release on the project site; however, soil and groundwater contamination from leaking underground storage tanks (USTs) were identified on two locations on the adjacent Foster City Government Center property. The following locations were identified as a hazardous materials release sites that could potentially affect the project site:

City Hall

In 2003, groundwater underlying the City Hall, located approximately 60 feet northwest of the project site, was found to be impacted by gasoline and diesel from former USTs. This case was closed in 2006 following recordation of a deed restriction. A case closure letter issued 30 January 2007 by the San Mateo County Environmental Health Department (SMCEHD) for the City Hall site indicated a requirement that any proposed change in land use or proposed soil or groundwater removal activity at the City Hall site be reviewed by the San Mateo County Groundwater Protection Program (this requirement does not affect the project site).

Fire Department

In 1991, three diesel USTs were removed from the Fire Department property, located approximately 150 feet northwest of the project site. Analytical results of samples collected in the vicinity of the USTs indicated elevated levels of diesel in soil and groundwater. Remediation, which included the operation of a groundwater extraction, was initiated in 1992. Monitoring continued at the site until 1998. The case was closed by 2000.

Regulatory Agency Database Review

A review of regulatory agency databases was completed as part of the 2008 Phase I ESA. In addition to the locations described in the 2007 Phase I ESA, the 2008 Phase I ESA identified the following location as a hazardous materials release site that could potentially affect the project site:

Chevron, 1101 East Hillsdale Boulevard

The Chevron site is approximately 600 feet northwest of the project site. A subsurface release of diesel in 1994 resulted in impacts to groundwater quality and the implementation of a free-phase product recovery and groundwa-

ter monitoring program.[3] Based on groundwater data and the proximity of the Chevron site to the project site, the 2008 Phase I ESA considered the Chevron site as a potential source of contamination that could affect the project site. Following contaminated soil excavation, the removal of leaking USTs, and the remediation of contaminated groundwater using bailing, passive skimmers, and vacuum extraction, the Chevron site was closed in 2009 after recordation of a deed restriction indicating that residual contamination may be present.[4, 5] The closure report states that the extent of the hydrocarbon plume is limited to the Chevron site.[6]

Historical Land Uses

Historical land use information indicates that the project site was part of a salt water marsh in 1899. The existing overhead high-voltage electrical power transmission lines, which traverse the northeastern portion of the project site, were first noted on a 1943 aerial photograph. By 1965, the project site and surrounding vicinity had been reclaimed through placement of artificial fill materials, as depicted on an aerial photograph. The 1965 aerial photograph also indicates that the project site was vacant, but the adjacent Foster City Government Center had been developed with structures on the property. A 1998 aerial photograph shows at least one structure/improvement and some additional smaller structures and/or vehicles on the northern portion of the project site.

The 2008 Phase I ESA also reported that temporary modular structures were placed on the project site from 1980 through 2002, according to a City official. The 2008 Phase I ESA did not provide additional information regarding the historic use of the structures.

Subsurface Conditions

The project site is relatively flat with an existing ground surface elevation of approximately 7 feet NGVD 1929.[7,8,9] The project site is underlain by artificial

[3] Liquid phase or pure phase contamination, known as free product, is characterized by having sufficient volume to saturate the soil such that it accumulates on the water table and can readily flow downgradient.

[4] GeoTracker, 2012. Chevron 9-2600 (T0608100846), http://geotracker.waterboards.ca.gov/, accessed September 24, 2012.

[5] Cambria, 2007. *Closure Request Chevron Service Station 9-2600.* Available online at: http://geotracker.waterboards.ca.gov/.

[6] Ibid.

[7] The NGVD 1929 is a vertical control datum established to measure vertical positions or elevations based on mean sea level measurements circa 1929. For most purposes, NGVD is equivalent to mean sea level.

fill over Bay Mud deposits. Groundwater was encountered during a geotechnical investigation between 3.5 to 6 feet bgs.[10] Given the proximity of the project site to the San Francisco Bay, groundwater levels underlying the project site are expected to fluctuate due to tidal influences, seasonal changes, and infiltration of precipitation.

Current Hazardous Materials Uses

During the site reconnaissances performed for the 2007 and 2008 Phase I ESAs, the project site contained a temporary tent structure and a paved parking lot associated with the tent structure.[11] Another parking lot was observed on the southeastern portion of the project site. On both occasions, the temporary tent structure was not entered. A City official indicated that the tent structure was used for storage of equipment by the Fire Department.[12] No evidence of hazardous materials storage and/or release was noted on the project site, except for a pad-mounted transformer which could potentially contain polychlorinated biphenyls (PCBs). The pad-mounted transformer was identified as a potential hazardous materials issue in the 2007 and 2008 Phase I ESAs. No evidence of past releases from the transformer, such as stains on the ground or stunted vegetation, was observed during either of the Phase I ESA site reconnaissances.

A site reconnaissance of the project site was conducted by Baseline Environmental, the preparers of this section, in August 2008 and November 2012. The observations made during the BASELINE 2008 reconnaissance were similar to those reported in the Phase I ESAs, and also included observations from the interior of the tent structure. The tent structure was mostly vacant. No drums, tanks, or other hazardous materials containers were observed inside or around the temporary tent structure. No evidence of staining on the pavement, distressed vegetation, or odors that would indicate a potential hazardous materials issue were noted in areas inside or around the tent structure.

The observations made during the Baseline November 2012 reconnaissance were similar to observations made during previous site visits. The temporary

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[8] The Foster City Datum is equal to the National Geodetic Vertical Datum of 1929 plus 100 feet. Source: Towne, Ray, 2012. Director of Public Works, Foster City, California, personal communication with BASELINE, 29 August.

[9] Engeo, 2008a, op. cit.

[10] Engeo, Inc., 2008b. *Preliminary Geotechnical Assessment, Village Square Development, Foster City, CA*. Submitted to Sares Regis Group of Northern California, LP., Engeo No. 7921.1.001.01, January 4.

[11] Ibid.

[12] Ibid.

tent structure was not entered during this reconnaissance. No evidence that would indicate a potential hazardous materials concern was observed.

Asbestos-Containing Material and Lead-Based Paint

The 2008 Phase I ESA reported that asbestos-containing material (ACM) and/or lead-based paint were unlikely to be present in the temporary tent structure on the project site based on its age. The 2008 Phase I ESA did not recommend to survey the structures, which would be demolished under the proposed project, for ACM and lead-based paint.

Conclusions and Recommendations of the Phase I ESA

The 2008 Phase I ESA did not identify any past or current land use on the project site associated with storage or release of hazardous materials. However, several properties near the project site with documented releases of hazardous materials were identified. Based on the findings of the investigation, the 2008 Phase I ESA recommended a soil and groundwater investigation to be conducted on the project site to determine whether reported releases of hazardous materials at nearby properties have affected subsurface conditions at the project site.

(2) Phase II Environmental Site Assessment

A Phase II ESA was conducted at the project site to address potential soil and groundwater contamination issues associated with known petroleum releases near the project site.[13] The scope of the Phase II ESA included analysis of soil and groundwater samples collected from ten borings within the project site and evaluation of analytical results. Sampling results were compared to Regional Water Board Environmental Screening Levels (ESLs), which are conservative, risk-based screening levels useful for determining if concentrations of chemicals of concern identified in an environmental investigation may warrant additional site-specific health risk assessment or possibly remediation.

The sampling occurred in two phases. The first phase of sampling occurred on February 28, 2008. During this sampling event, five soil samples and five groundwater samples were collected at borings located near the northwest border of the project site. The soil and groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPH-g); TPH as diesel (TPH-d); TPH as motor oil (TPH-mo); benzene, toluene, ethylbenzene, and xylenes (BTEX); and methyl tert butyl ether (MTBE). The analytical results identified TPH-d and TPH-mo in soil and/or groundwater samples collected from a

[13] Engeo Incorporated, 2008c. *Phase Two Environmental Site Assessment, Village Square Development, Foster City, Californi*a. October 9.

boring advanced just south of the temporary tent structure.[14] The Phase II ESA reported that concentrations of TPH-d (140 milligrams per kilogram [mg/kg]) and TPH-mo (960 mg/kg) found in the soil sample were above the ESLs[15] of 100 and 370 mg/kg, respectively, for a residential land use scenario where groundwater is not considered a potential source of drinking water[16]. In addition, the Phase II indicated that the concentration of TPH-d (110 micrograms per liter [µg/L]) in groundwater exceeded the ESL for groundwater as a current or potential source of drinking water (100 µg/L),[17] but was below the ESL for groundwater not considered a drinking water source (210 µg/L)[18]. No other chemical compounds were detected above laboratory reporting limits in other samples.

The second phase of sampling occurred on April 10, 2008. During this sampling event, ten soil samples and five groundwater samples were collected from five borings advanced south of the temporary tent structure, where petroleum hydrocarbons were identified in the first phase of sampling. The borings were installed in a circular pattern, with each boring approximately 70 feet from the original sampling location. The soil and groundwater samples were analyzed for TPH-d, TPH-mo, and volatile organic compounds (VOCs). Based on the TPH and VOC sampling results, selected soil samples were subsequently analyzed for CAM-17 metals, semi-volatile organic compounds (SVOCs), and polycyclic aromatic hydrocarbons (PAHs).

TPH-d and TPH-mo were detected in all soil samples, ranging from 23 to 650 mg/kg and 170 to 4,700 mg/kg, respectively. Multiple samples were above the ESLs of 100 and 370 mg/kg, respectively, for a residential land use scenario where groundwater is not considered a potential source of drinking water. TPH-d was detected in three out of four groundwater samples ranging between 90 through 120 µg/L. All samples were below the ESL for groundwater not considered a drinking water source (210 µg/L); two samples were above the ESL for groundwater considered a drinking water source (100 µg/L). TPH-mo was detected in one groundwater sample at 530 µg/L, which

[14] Ibid.

[15] Regional Water Board, 2007a, op. cit.

[16] Regional Water Board, 2007b. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, Table B. Shallow Soil Screening Levels (<3m bgs), Residential Land Use, Groundwater is not a Current or Potential Drinking Water Resource*, Interim Final. Updated May 2008.

[17] Regional Water Board, 2007c. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, Table A. Shallow Soil Screening Levels (<3m bgs), Residential Land Use, Groundwater is a Current or Potential Drinking Water Resource*, Interim Final. Updated May 2008.

[18] Regional Water Board, 2007b, op. cit.

exceeds the ESL of 210 µg/L for groundwater that is not considered a potential drinking water source.

No VOCs were detected in soil and groundwater samples above laboratory reporting limits. Metals were detected at concentrations consistent with expected naturally-occurring concentrations. The PAH analyses identified several analytes at concentrations above laboratory reporting limits, but below their respective ESLs, though no other SVOCs were detected.

Laboratory analysis was performed on the soil matrix and the results indicated that, based on the physical characteristics of the soil as well as the range of detected carbon chains, the detected petroleum hydrocarbon in the area was likely due to the presence of asphaltic materials.[19]

As no readily identifiable on-site source of the petroleum hydrocarbons was identified in the Phase I ESA, the Phase II ESA suggests that the petroleum hydrocarbons may be from the historic placement of fill during the 1950s that contained asphaltic material. The Phase II ESA did not delineate the extent of the contamination.

The Phase II ESA stated that the petroleum hydrocarbon impacted soil and groundwater underlying the project site could be encountered by construction workers or future site users and residents during shallow excavation. The report recommended that the risk to future site users from exposure to project site contaminants could be minimized either by placement of an impermeable barrier such as a concrete pavement or removal of affected materials during construction. Subsurface contaminants were not expected to affect indoor air quality since BTEX compounds, the volatile constituents of greatest health concern in petroleum, were not detected above laboratory reporting limits in soil and groundwater samples. The Phase II ESA concluded that, based on the proposed land use and likely exposure scenarios to future residents on the project site, the detected contamination does not pose a threat to public health or the environment.

b. Regulatory Setting

The following section provides the federal, State, and local regulatory framework for hazardous materials and hazardous waste, hazardous building materials that could be encountered during building demolition activities, and worker health and safety.

[19] Engeo, 2008c, op. cit.

(1) Hazardous Materials and Hazardous Waste

The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous local, State, and federal laws and regulations. The U.S. EPA is the federal agency that administers hazardous materials and hazardous waste regulations. State agencies include the California EPA (Cal/EPA), which includes the California Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (State Water Board), CARB, and other agencies. The Regional Water Board, BAAQMD, and SMCEHD have jurisdiction on a regional or local level.

A description of each federal, State, and regional/local agency's jurisdiction and involvement in the management of hazardous materials and wastes is provided below.

Federal

The U.S. EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). The legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA), the Superfund Amendments and Reauthorization Acts of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The U.S. EPA provides oversight for site investigation and remediation projects, and has developed protocols for sampling, testing, and evaluation of solid wastes.[20]

State

Three State agencies, described below, regulate hazardous materials and waste that may occur on or around the project site.

Department of Toxic Substances Control

In California, DTSC is authorized by the U.S. EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most State hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public

[20] U.S. Environmental Protection Agency (U.S. EPA), 2007. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 On-Line.* Last updated November 15, 2012. http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm, accessed September 27, 2012.

health, and establishes cleanup levels for subsurface contamination that are equal to, or more restrictive than, federal levels. DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

State Water Resources Control Board
The State Water Board enforces regulations on how to implement UST programs. It also allocates monies to eligible parties who request reimbursement of funds to clean up soil and groundwater pollution from UST leaks. The State Water Board also enforces the Porter-Cologne Water Quality Act through its nine regional boards, including the Regional Water Board, described below.

California Air Resources Board
This agency is responsible for coordination and oversight of State and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. CARB has developed State air quality standards, and is responsible for monitoring air quality in conjunction with the local air districts.

Regional and Local Agencies
The following regional and local agencies have regulatory authority over the proposed project's management of hazardous materials and waste.

San Francisco Bay Regional Water Quality Control Board
The nine Regional Water Quality Control Boards, including the San Francisco Bay Regional Water Board, provide for protection of State waters in accordance with the Porter-Cologne Water Quality Act of 1969. The Regional Water Board can act as lead agency to provide oversight of sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions. The Regional Water Board has also developed ESLs to help expedite the preparation of environmental risk assessments at sites where contaminated soil and groundwater have been identified.[21]

Bay Area Air Quality Management District
The BAAQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the re-

[21] California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), 2007a. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Interim Final. Updated May 2008. Available online at: http://www.waterboards.ca.gov/sanfranciscobay/esl.shtml.

sponsibility of the U.S. EPA and CARB). BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and the issuance of permits for activities including asbestos demolition and renovation activities (District Regulation 11, Rule 2).

San Mateo County Health Department, Environmental Health Division
SMCEHD is the primary agency responsible for local enforcement of State and federal laws pertaining to hazardous materials management. In Foster City, SMCEHD is a Certified Unified Program Agency (CUPA), responsible for coordination of the Hazardous Materials Business Plan Program (HMBP), local hazardous waste generator program, UST management, investigation of leaking USTs, oversight of remediation of contaminated sites, and California Accidental Release Program for highly toxic, flammable, or explosive materials.[22] SMCEHD also administers a County Household Hazardous Waste Program to educate the public about the dangers of toxic household wastes and to provide for proper disposal of household hazardous wastes.

(2) Foster City General Plan

The 1993 Safety Element of the Foster City General Plan[23] contains the following safety goals, policies, and programs related to hazardous materials, fire, emergency preparedness, and electromagnetic fields.

Goals

Goal S-C: Protect from Fire and Dangerous Conditions. Protect the community from unreasonable 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

Policy 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.

[22] San Mateo County Environmental Health Department (SMCEHD), 2012. *Environmental Health – Toxic Programs*, http://smchealth.org/environ/toxic, accessed September 27, 2012.

[23] Foster City, 1995, op. cit.

Policy S-7 Hazardous Materials. The City will protect the community from unreasonable risks associated with hazardous materials.

Policy S-8 Electromagnetic Fields. The City will monitor available information regarding possible health hazards of electromagnetic fields.

Policy S-9 Emergency Response. The City will prepare to respond to emergencies through the City's Emergency Plan, training, and other measures.

Policy S-10 Water Supply. The City will provide an adequate supply of water for daily use and emergency situations.

Programs

Program S-i Use of Uniform Codes. The City will adopt and enforce the most current uniform codes with additional local requirements as necessary tailored to Foster City (Responsible Agency, Building Division and Fire Department).

Program 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 (Responsible Agency, Fire Department, Building Department).

Program 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 (Responsible agency, Fire Department).

Program 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 (Responsible Agency, Fire Department).

Program 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 (Responsible agency, Public Works Department).

Program S-o Electromagnetic Fields. The City will monitor available information regarding possible health hazards of electromagnetic fields (Responsible Agency, Community Development Department).

Program S-p Emergency Response. The City will prepare to respond to emergencies through the use of established procedures, programs of ongoing training, periodic exercises of the City's Emergency Plan, and mutual aid agreements (Responsible Agency, All Departments).

Program S-q Emergency Plan. The City will maintain the City's Emergency Plan indicating responsibilities and procedures for responding to an emergency (Response Agency, Fire Department).

(3) Foster City Emergency Evacuation Plans

The City Council adopted the City Multi-Hazard Functional Plan as the City's Emergency Plan.[24] The Multi-Hazard Functional Plan uses the Statewide Emergency Management System (SEMS), which provides a framework for standardizing emergency response procedures in California. The Multi-Hazard Functional Plan identifies emergency functions and responsibilities of different departments and evacuation routes for the orderly removal of people during various types of emergency situations. In the event of a local emergency confined to Foster City, in accordance with the Community Evacuation Plan, the following steps would be taken to safely and expeditiously evacuate vehicles and pedestrians.

- Mutual aid would be requested from the California Highway Patrol, Caltrans, and neighboring agencies to stop all incoming traffic and provide assistance with traffic and crowd control.
- All arterial streets would be restricted to egress only, with all lanes traveling in the same direction (to effectively double the normal capacity of these streets): 1) East Hillsdale Boulevard (westbound); 2) Foster City Boulevard (northbound; 3) Shell Boulevard (northbound); 4) Edgewater Boulevard, north of Pitcairn (northbound); and 5) Edgewater Boulevard, south of Pitcairn Drive (southbound).
- Beach Park Boulevard would circulate in a clockwise direction in an effort to avoid cross traffic conflicts.
- Foster City Boulevard traffic would be directed to either Third Avenue west or SR 92 west.
- Shell Boulevard traffic would be directed via Metro Center east to SR 92 East, or west on East Hillsdale Boulevard to north on Edgewater Boulevard.
- Northbound Edgewater Boulevard traffic would be directed to East Hillsdale Boulevard westbound, SR 92 East, or Third Avenue.

[24] Foster City, 1995, op. cit.

- Southbound Edgewater Boulevard traffic (south of Pitcairn Drive) would be directed to Baffin Court and across the Belmont Slough fire road to Belmont/Redwood Shores.
- Traffic from the business areas north of SR 92 would be directed to either Third Avenue west or Fashion Island Boulevard west.

As available, equipment (such as portable barricades, vehicles and other traffic diversionary devices) would be used to help direct traffic in the manner specified above. In addition, traffic signals may be controlled to facilitate the smooth movement of traffic. Under the Multi-Hazard Functional Plan, consideration would also be given to normalizing traffic patterns once vehicles are outside the City limits and are operated on roadways controlled by other agencies.

The Multi-Hazard Functional Plan also anticipates and plans for emergency evacuation on a regional scale. To that effect, Foster City executed a Memorandum of Understanding (MOU) for the San Mateo County Smart Corridors Project on November 3, 2008.[25] The Smart Corridors Project would allow agencies within San Mateo County to work collaboratively to promote safe and effective transportation management and operations on local arterials and highways within San Mateo County during major traffic incidents. Although the MOU is intended to address the objectives and institutional framework of the Smart Corridors Project, it does not commit any agency to funding, or maintenance/operations responsibilities. The Smart Corridor Project is funded by State grants.

The expected benefits of the Smart Corridor Project for involved agencies include the ability to: 1) quickly identify the location of major traffic incidents in the County; 2) share real-time traveler information among agencies; 3) share cross-jurisdictional signal timing and operations data to better manage major traffic incidents on El Camino Real and local streets; 4) promote the safe and orderly flow of traffic through intelligent transportation systems; 5) coordinate traffic management plans among emergency service providers, cities, the County, and State agencies; and 6) safely direct the public and emergency responders on local streets and highways during major traffic incidents. The Smart Corridor Project is currently underway and scheduled for completion by the end of 2013.[26]

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[25] Foster City, 2008. City Council Resolution No. 2008-99.

[26] City of Menlo Park, 2002. *San Mateo County Smart Corridors-Project Description*. Information reviewed online at: http://www.menlopark.org/departments/trn/Smartcorridors.html. September 27, 2012.

(4) Lead, Asbestos, and Other Hazardous Building Materials

Prior to 1978, lead compounds were commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., may cause cancer), a known teratogen (i.e., causes birth defects), and a reproductive toxin (i.e., can cause sterility). Prior to the 1980s, building materials often contained asbestos fibers, which are a known human carcinogen. Asbestos, used to provide strength and fire resistance, was frequently incorporated into insulation, roofing, and siding, textured paint and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes.

PCBs have been used as coolants and lubricants in transformers, capacitors, heating/cooling equipment, and other electrical equipment. PCBs have not been manufactured in the United States since 1977, but may still be found in older electrical equipment and other building materials, like light ballasts. PCBs have been associated with acne-like skin conditions in adults and changes in the nervous and immune system in children. PCBs are also known to cause cancer in laboratory animals and are probable human carcinogens.[27] PCB or PCB-contaminated items require proper off-site transport and disposal at a facility that can accept such wastes.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury, a heavy metal) are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

(5) Worker Health and Safety

Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The Federal Occupational Safety and Health Act of 1970 authorizes states to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program, and provides consultant assistance to employers. California standards for workers dealing

[27] Agency for Toxic Substances and Disease Registry, 2001. *Toxic FAQs for Polychlorinated Biphenyls*, February, http://www.atsdr.cdc.gov/tfacts17.pdf, accessed September 27, 2012.

with hazardous materials are contained in California Code of Regulations Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.[28] Additional regulations have been developed for construction workers potentially exposed to lead[29] and asbestos.[30] Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

c. Electrical Transmission Lines/Electromagnetic Fields (EMFs)

Transmission towers are located in the northern and eastern corners of the project site. High-voltage electrical transmission lines running northwest to southeast across the site are suspended by these towers. Occupants of properties adjacent to the high-voltage electrical transmission lines are exposed to EMFs generated by these power lines, in addition to EMFs from electrical distribution lines, building wiring, appliances, and natural phenomena, including lightning or static electricity. The overall strength of EMFs dissipates quickly with distance from the source. In addition, there is a low, but measurable "background" level of EMFs in the environment that is not related to any particular human-made source. Typically, EMFs are measured at "background" levels about 3 to 4 feet away from an electrical appliance, 60 to 200 feet from an electrical distribution line, and about 300 to 1,000 feet from a transmission line.[31]

There has been public concern about the potential health effects associated with EMFs from human-made sources, such as transmission lines. Human cells have their own electric fields, and some laboratory studies have shown that these internal fields can be disrupted by exposure to even low-energy EMFs. However, determining what effects, if any, EMFs may have on living tissue over long periods of time has proved to be a difficult scientific challenge.

A 1999 review of the literature, prepared by the National Institute of Environmental Health Science (NIEHS), concluded that "the NIEHS believes that

[28] Title 8, CCR Section 5192.

[29] Title 8, CCR Section 1532.1.

[30] Title 8, CCR Section 1529.

[31] California Department of Public Health Services (CDPH), 1999. *Short Fact Sheet on EMF*, California EMF Program.

there is weak evidence for possible health effects from EMF exposures, and until stronger evidence changes this opinion, inexpensive and safe reductions in exposure should be encouraged."[32] A more recent pooled analysis of the relationship between EMFs and childhood leukemia similarly concluded that EMFs are possibly carcinogenic but that scientific uncertainties regarding the apparent association remain.[33] The California EMF Program, developed by the California Public Utilities Commission (PUC), California Department of Health Services (DHS), and the Public Health Institute, completed a risk evaluation of EMFs in June 2002. Three DHS scientists evaluated existing EMF study data, in coordination with DHS toxicologists, physicians, and epidemiologists. Due to the lack of clear association between EMFs and health risks in the available data, the California EMF Program did not identify any specific policy measures to address potential risks of EMFs, and DHS made no policy recommendations. However, the PUC advocates "no and low cost" EMF avoidance measures; this means minimizing EMF exposure when it is easy and inexpensive to do so.[34] In Foster City, EMF exposure is minimized by the General Plan requirement that power lines be contained in easements where the development of permanent structures is prohibited.[35] In accordance with this policy, the project area where the transmission lines are located will contain a parking lot.

As no specific health effects of EMFs have been conclusively demonstrated, there are no health-based or regulatory risk standards for EMF exposure. The assessment of effects of EMFs in this EIR is therefore limited to the qualitative discussion in this subsection, and no impacts related to EMFs are identified.

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[32] National Institute of Environmental Health Science (NIEHS), 1999. *Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, Prepared in response to the 1992 Energy Policy Act*. NIH Publication No. 99-4493. pp. 38. Available online at:
http://www.niehs.nih.gov/health/assets/docs_f_o/health_effects_from_exposure_to_powerline_frequency_electric_and_magnetic_fields.pdf.

[33] Kheifets et al., 2010. Pooled Analysis of Recent Studies on Magnetic Fields and Childhood Leukemia. British Journal of Cancer: 102, 1128-1135. Available online at: http://www.ncbi.nlm.nih.gov/pmc/articles/ PMC2965855/#bib24.

[34] CDPH, 2002. *An Evaluation of the Possible Risks from Electric and Magnetic Fields from Power Lines, Internal Wiring, Electrical Occupations, and Appliances*, Final Report, California EMF Program. June. Available online at:
http://www.ehib.org/emf/RiskEvaluation/riskeval.html.

[35] City of Foster City, 1995. *General Plan, Chapter 7, Safety Element*, adopted October. Available online at: http://www.fostercity.org/city_hall/docs/General-Plan-in-PDF-Version.cfm.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hazardous materials and public health and safety that could result from implementation of the proposed project. Criteria of significance are defined and establish the thresholds for determining whether a project impact is significant. Potential hazardous materials and public health and safety impacts from the proposed project are then presented, with mitigation measures to reduce potential impacts to less-than-significant levels.

a. Criteria of Significance

A significant hazardous materials or public health and safety impact would occur if the project would:

- Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.
- Create a significant hazard to the public or environment through exposure to hazardous materials present in soils, surface water, ground water, and/or building materials as a result of historical land uses in the project vicinity.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼- mile of an existing or proposed school.
- Be located on or adjacent to a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would result in a safety hazard for people residing or working in the area.
- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.
- Result in an increased risk of exposure to wildland or urban fire hazards.
- Result in a safety hazard for people residing or working within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.
- Result in a safety hazard for people residing or working within the vicinity of a private airstrip.

b. Less-Than-Significant Hazards and Public Safety Impacts

The following discussion examines potential less-than-significant impacts of the proposed project.

(1) Routine Transport, Storage, Use, and Disposal of Hazardous Materials

Based on the proposed land use (i.e., residential, retail, restaurant, and community services), the operational phase of the proposed project would be expected to store and use only small quantities of common hazardous materials (e.g., paint, cleaning solvents, and pesticides) on the project site. All future uses would be subject to existing regulatory programs for hazardous materials. The Fire Department and Building Inspection Division of the Community Development Department coordinate the review of building permits to ensure that hazardous materials requirements are met prior to construction, including required separation between hazardous materials and sensitive land uses, and proper hazardous materials storage facilities. Any businesses that transport, generate, use, and/or dispose of hazardous materials within the project site would also be subject to existing hazardous materials regulations, such as those implemented by SMCEHD (see Regulatory Framework, above) and hazardous materials permits from the Fire Department. The Fire Department also conducts annual inspections for fire safety and hazardous materials management of businesses and multi-family dwellings, in accordance with the General Plan.[36] These measures would ensure that the proposed project would not result in significant impacts to health and safety from the routine transport, use, storage, or disposal of hazardous materials following construction.

The operation of the assisted living facility that is part of the proposed project may potentially generate medical wastes. Medical wastes are defined under the Medical Waste Program as sharp objects (e.g., needles and razor blades), bloody materials, bandages, and any other wastes contaminated with body fluids. Medical wastes that would be generated in the assisted living facility would be managed in accordance with the Medical Waste Program of the SMCEHD, which provides regulations for generation, transport, and disposal of such waste.[37]

Implementation of local hazardous materials programs and requirements, in addition to State and federal laws and regulations, would ensure that the proposed project would not create a significant hazard to the environment

[36] Foster City, 1995, op. cit.

[37] Information regarding the Medical Waste Program can be obtained online at www.co.sanmateo.ca.us.

through the routine transport, storage, use, and disposal of hazardous materials. Based on information presented above, this potential impact would be considered less than significant.

(2) Emit Acutely Hazardous Materials within One-Quarter Mile of a School

The project site is located within a one-quarter mile of several schools. These schools include the Ronald C. Wornick Jewish Day School, Bright Horizons Chinese School, Foster City Kindercare, All Are Friends Montessori Preschool, Allegro Music School, and Brewer Island Elementary School. During construction, the demolition of the existing tent structure on the project site would not be expected to release hazardous materials (e.g. lead and asbestos); such materials are unlikely to be present in building materials given the age of the structure.[38] Furthermore, the operation of the proposed project would likely involve only small quantities of hazardous materials for routine cleaning and maintenance, which would require minimal transport and disposal of hazardous materials. Compliance with existing regulations, and with the mitigation measures described below, will prevent hazardous emissions during both the construction and operational phase of the project, and will thereby prevent a significant risk of sensitive receptor exposure to acutely hazardous materials, substances, or waste. Therefore, the risks associated with emissions of acutely hazardous materials within one-quarter mile of a school are considered a less-than-significant impact.

(3) Hazardous Materials Release Sites

The 2007 and 2008 Phase I ESAs identified the Chevron site on East Hillsdale Boulevard, and the City Hall and Fire department sites on the adjacent Government City Center property, as hazardous materials release sites with the potential to impact the project site. Phase II ESA sampling was conducted to address this potential impact and the results of the sampling did not identify any soil or groundwater contamination that would indicate that the contaminants from these off-site sources have migrated onto the project site. The results of the soil and groundwater investigation indicate that the source of the contamination detected on the project site may be from fill contaminated with asphaltic materials.[39]

Reviews of regulatory agency databases performed for this analysis included lists of sites compiled pursuant to Government Code section 65962.5. These reviews have not identified any active investigations of hazardous materials releases within the project site or within one-eighth mile. Potential impacts

[38] Engeo, 2008a, op. cit.
[39] Engeo, 2008c, op. cit.

related to hazardous materials release sites at and adjacent to the project site are therefore considered less than significant.

(4) Emergency Response/Evacuation Plan

The proposed project would not be expected to impair implementation of or interfere with any emergency response or evacuation plans in the vicinity of the project site. The project would not interfere with the Multi-Hazard Functional Plan, which the City has established as the basis for all emergency response actions for City departments.[40] The Multi-Hazard Functional Plan and Community Evacuation Plan identify arterial streets in the vicinity of the project site that would be used for egress only, with all lanes traveling in the same direction (effectively doubling evacuation capacity), including northbound Foster City Boulevard, westbound East Hillsdale Boulevard, and northbound Shell Boulevard. Additionally, Foster City Boulevard traffic would be directed to either East Third Avenue westbound or SR 92 westbound, and Shell Boulevard traffic would be directed via Metro Center east to SR 92 East, or west on East Hillsdale Boulevard to north on Edgewater Boulevard. Potential impacts to emergency evacuation routes or emergency response plans from the proposed project are therefore considered less than significant.

(5) Wildland/Urban Fires

The project site, which is surrounded by urbanized uses, has not been identified as having a significant potential for wildland fires.[41] The proposed project would be required to conform to the California Fire Code and California Building Code, and requirements of the Foster City Fire Department (FCFD) to reduce the potential for structural fires. Compliance with City requirements and building codes would reduce potential impacts from fire hazards, including wildland fires, to a less-than-significant level.

(6) Aviation Hazards

The project site is located approximately 3.5 miles northwest of the San Carlos Airport and approximately 10 miles southeast of the San Francisco International Airport (SFO), and is located within the Airport Influence Area (AIA) of both airports. The project site is not located near any private use airstrips.[42] The project site is located within Area A of the AIA Boundary for the San Carlos Airport, where requirements for real estate disclosure are mandatory due to potential noise issues. Formal review of proposed projects for potential obstruction issues is limited to Area B of the AIA, within a 9,000-

[40] Foster City, 1995, op. cit.

[41] Ibid.

[42] Skyvector, 2012. *San Francisco Sectional Chart*, www.skyvector.com, accessed September 24, 2012.

foot radius of San Carlos Airport.[43] The proposed project is not located within Area B, and proposed structures at the project site would not be considered a potential obstruction hazard for aircraft using the San Carlos Airport.

The northern portion of the project site is located within the approach surface to SFO, and the entire project site is designated as part of SFO AIA B.[44] The highest obstruction permitted within the project site is 210 feet.[45] The building heights for the proposed project are well below this maximum permitted height, would not be expected to interfere with aircraft, and would therefore not be expected to pose a hazard to persons occupying structures. Further, the proposed project is not expected to include any land uses that would cause a hazard to air navigation within the vicinity of SFO.[46] Impacts from the proposed project on aviation are therefore considered less than significant.

c. Significant Hazards and Public Safety Impacts and Mitigation Measures

Two potentially significant impacts have been identified and are discussed below.

Impact HAZ-1: Upset and accidents involving hazardous materials releases and transport and use during construction activities could result in adverse effects to public health or the environment. (S)

Hazardous materials (e.g., fuels, lubricants, paints, adhesives) would be transported and used on-site for proposed construction and redevelopment activities. In addition, construction vehicles would be used on-site that could accidentally release hazardous materials, such as oils, grease, or fuels. It is likely that the construction contractor(s) would store these hazardous materials and vehicles on-site during the duration of construction activities. Acci-

[43] Revised Airport Influence Area Boundary for San Carlos Airport—Areas A and B, approved by CCAG Board, October 14, 2004. Available online at: http://www.ccag.ca.gov/plans_reports.html.

[44] City/County Association of Governments of San Mateo County, 2012. *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport*, Final Draft, October 2012. Available online at: http://www.ccag.ca.gov/plans_reports.html.

[45] Ibid.

[46] Land uses that could cause a hazard to air navigation within SFO AIA B include: 1) sources of glare; 2) distracting lights that could be mistaken for airport identification lighting; 3) sources of dust, smoke, or water vapor; 4) sources of electrical interference; 5) sources of significant thermal plumes; and 5) any land use that would attract large concentrations of wildlife, particularly flocks of birds. Ibid.

dental releases of hazardous materials could affect soil and/or groundwater quality, or could result in adverse health effects to construction workers, the public, and the environment.

Mitigation Measure HAZ-1: The following three-part mitigation measure shall be implemented.

HAZ-1a: 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 feasible. 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 leaks shall be 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.

HAZ-1b: 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, and required personal protective equipment, as appropriate, in responding to the emergency. The contractor(s) shall submit these procedures to the City for approval prior to demolition or development activities.

HAZ-1c: If hazardous materials will be stored on the project site for more than 30 days in quantities equal to or greater than specified thresholds, a HMBP shall be prepared by the contractor(s), as required by SMCEHD.[47] Emergency responders and public health officers rely on information contained in the HMBP in the event of a hazardous materials incident to prevent a potential threat to human health and/or the

[47] San Mateo County Environmental Health Department, 2012. *Hazardous Material Business Plan Program*, http://smchealth.org/HazMat%20Business%20Plan, accessed September 27, 2012.

environment. The HMBP shall be submitted to SMCEHD and FCFD for review and approval and shall be subject to inspection requirements by SMCEHD and FCFD for completeness and accuracy. The HMBP shall be updated every other year or when significant changes are applicable, including new emergency contact information, a major increase in the quantity of hazardous materials stored on-site, and/or changes in the location of hazardous materials storage.

Compliance with these mitigation measures may occur in coordination with compliance with the Storm Water Pollution Prevention Plan and Best Management Practices required for the proposed project (see Section V.F, Hydrology and Water Quality, for additional detail). Implementation of this three-part mitigation measure would reduce this impact to a less-than-significant level. (LTS)

Impact HAZ-2: Exposure of construction workers and the public to identified or previously unknown contamination in soil and groundwater and other hazardous materials during project construction and operation could result in adverse health effects. (S)

Subsurface investigations conducted on the project site have identified petroleum hydrocarbons in soil and groundwater underlying the project site at levels above established screening levels. The petroleum hydrocarbon contamination may be the result of the presence of asphaltic material in the underlying fill.[48] If so, other areas of contaminated fill may be encountered during development of the project. The fill has been found to extend up to 7 feet below ground surface.[49] If soils and groundwater are not properly managed during construction, exposure to petroleum hydrocarbons in soil and groundwater could pose a health hazard to construction/utility workers and nearby members of the general public during project construction and operation. Exposure to contaminants in soil and groundwater could occur through inhalation of fugitive dust, incidental ingestion, or dermal contact with contaminated material. Potential impacts to future residents are not anticipated due to the lack of VOCs and SVOCs identified in soil and groundwater (these compounds could volatilize to indoor air spaces in the buildings if they were present) and the general lack of direct exposure that residents of this type of facility would have with soil and groundwater.

Mitigation Measure HAZ-2: The following three-part mitigation measure shall be implemented.

[48] Engeo, 2007c, op. cit.
[49] Engeo, 2007b, op. cit.

HAZ-2a: Construction at the project site shall be conducted under 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 summarize soil and groundwater analytical data collected on the project site during past investigations, delineate areas of known soil and groundwater contamination, and identify soil and groundwater management options for excavated soil and groundwater, in compliance with local, State, and federal statutes and regulations.

The CRMP will: 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, prior to grading and earthwork activities. 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. 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 or regulatory agency, as appropriate; and 4) designate personnel responsible for implementation of the CRMP. The CRMP shall be submitted to the Foster City Community Development Department for review and approval prior to construction activities.

HAZ-2b: Engineering fill brought on-site shall be demonstrated, by knowledge of its source (e.g., virgin material) or 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 groundwater (e.g., ESLs). As appropriate, the engineered fill shall be characterized by a qualified environmental professional using a representative sampling methodology in accordance with U.S. EPA's SW-846 Test Methods,[50] 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 Building Division for approval prior to transporting engineering fill onto the project site.

HAZ-2c: Any on-site reuse of hydrocarbon impacted soil will follow the guidance provided by the SMCEHD, which is designed to meet screening levels for residential (or potential future residential) land use as defined by the Regional Water Board.[51] The guidance specifies the site conditions, sampling and characterization, evaluation criteria, regulatory limits, and work plan and reporting requirements necessary for on-site hydrocarbon impacted soil reuse.

Implementation of this three-part mitigation measure will ensure this impact is reduced to a less-than-significant level. (LTS)

[50] U.S. EPA, 2007, op cit.

[51] San Mateo County Environmental Health Department, 2006. Characterization and Reuse of Petroleum Hydrocarbon Impacted Soil. December. Available online at: http://smchealth.org/sites/default/files/docs/869705846Soil%20Reuse.pdf.

I. PUBLIC SERVICES, UTILITIES, AND RECREATION

This section analyzes the proposed project's potential impacts to public services, utilities and recreation, including: fire and emergency services, police services, water supply, wastewater, solid waste, telecommunications, and energy. Potential impacts to public services, utilities and recreation that could result from the proposed project are identified, and mitigation measures are recommended, as appropriate. The related topic of storm drainage is evaluated in Section V.F, Hydrology and Water Quality.

1. Setting

This section describes existing public services, utilities and recreation locations, capacities, and expansion possibilities.

a. Fire Protection

The Foster City Fire Department (FCFD) provides fire suppression, life safety, and hazardous material response and containment services for Foster City. The Department participates in joint dispatching with other fire agencies in San Mateo County, in which the closest uncommitted unit responds to emergency calls, regardless of jurisdiction. The Department also has an Automatic Aid agreement with the City of Hayward Fire Department for the San Mateo Bridge. In addition, the Department participates in the Master Mutual Aid System for the State of California, which provides staff and mechanical assistance throughout the State. Department staffing, facilities, equipment, and response times are described below.

Foster City Fire Station

(1) Staffing

The FCFD has a current authorized staff of 32 full-time and 2 part-time employees including 18 firefighters, 9 Captains, 1 Fire Marshal, and 2 administrative staff. In addition, Foster City shares a Fire Chief, Deputy Fire Chief and Battalion Chiefs with the City of San Mateo. In Foster City, each shift has 1 battalion chief, 3 captains, and 7 firefighters assigned for a minimum of 10 total personnel working each day. All engine companies are staffed with ALS

(Advanced Life Support provided by FCFD paramedics) and a minimum of one paramedic is on each engine company at all times.[1]

(2) Facilities and Equipment

Foster City Fire Station 28 is located at 1040 E. Hillsdale Boulevard and is located adjacent to the project site. In-service equipment housed at the fire station includes one fire truck, two fire engines, and one 14-foot water rescue boat. Reserve fire equipment includes one command vehicle and two reserve fire engines. There are currently no planned improvements at this fire station, and there are no plans for the construction of new fire stations in the area.

Station 26 at 1500 Marina Court in San Mateo is the second closest station to the project site and is staffed by the City of San Mateo Fire Department. Station 26 has one fire captain and two firefighters present at all times. Three fire personnel are assigned to the station per day. This station is equipped with one fire engine and a lumber truck (LT 26).[2]

(3) Response Times

The Department's average response time goal within the City limits is 3.5 to 4.5 minutes, and the Department is currently meeting that goal. The average response time to the project site under current conditions is approximately 1 minute. In an extreme case, high power tension lines that run north to south along Foster City Boulevard may limit fire response to portions of the site should one of those lines fail.

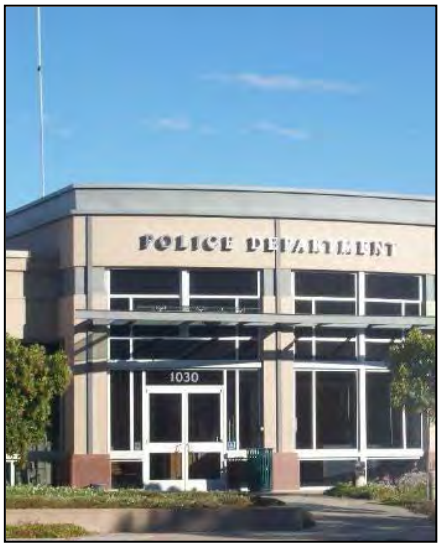
The Department's current Insurance Service Office (ISO) rating is Class 2 (1 being the highest and 10 being the lowest), upgraded from Class 3 in 2000. This rating considers a community's fire defense capacity verses fire potential and then uses the score to set property insurance premiums for homeowners and commercial property owners.[3]

b. Police Services

The FCPD is located at 1030 E. Hillsdale Boulevard, adjacent to the project site. The FCPD has an authorized staff of 36 sworn and 13 non-sworn personnel. The current police officer to resident ratio is approximately 1.2 sworn officers per 1,000 residents. The City's target police officer to resident ratio is 1.5 sworn officers per 1,000 residents. The average response time for all call types in the City is 5 minutes. The average response time to the project

[1] Keefe, Michael, 2013. Fire Chief, Foster City Fire Department. Written communication with City of Foster City. January 31, 2013.
[2] Keefe, Michael, 2013, op. cit.
[3] Keefe, Michael, 2013, op. cit.

site is 4 minutes for non-emergency and 2 to 3 minutes or less for emergency calls. There are no significant law enforcement issues in the area.[4] Patrols at the project site area are consistent with other areas within the City and patrols occur 24 hours a day.[5]



Foster City Police Department

c. Parks and Recreation

The City of Foster City has 21 parks and recreational facilities within the 4 square miles comprising the City. The parks range in size from 0.12 acres to 23.9 acres, and total approximately 113.8 acres.[6] In addition, the City has 212 acres of recreational waterways. Almost all residents live within walking distance, or ¼-mile, of a park or a private recreational facility. All of those who do not live within ¼ -mile of a park live within ¼-mile of the waterfront. Parks located in the vicinity of the project site include the 20.73-acre Leo J. Ryan Memorial Park, the 5.88-acre Catamaran Park, and the 3.48-acre Erckenbrack Park, all of which are within ¼-mile of the project site.

Recreational and community facilities include the Foster City Community Center and the William E. Walker Recreation Center (which includes the Senior Center), both located adjacent to the project site, at 1000 E. Hillsdale Boulevard and 650 Shell Boulevard, respectively.

Leo J. Ryan Memorial Park

Section 66477 of the Government Code (the Quimby Act) authorizes jurisdictions to establish ordinances requiring residential subdivision developers to dedicate parkland or pay in-lieu fees for park and recreation purposes. Foster City requires payment of a fee in lieu of land dedication, or a combination of both.[7] The recommended

[4] Froomin, Jon, 2013. Captain, Patrol Division, Foster City Police Department. Personal communication with Urban Planning Partners, January 31.

[5] Froomin, Jon, 2013, op. cit.

[6] Foster City, City of, 2013. Foster City Park Guide. http://www.fostercity.org/services/recreation/ParkGrid.cfm

[7] City of Foster City, 2006. *Municipal Code*, Title 16, Chapter 36. August 21.

standard is three acres of parkland per 1,000 residents; however, legislative bodies may adopt higher standards of up to five acres per 1,000 residents. The City of Foster City uses the 5 acres per 1,000 residents standard as a threshold to measure how well its citizens are provided with park and recreational facilities access. With a population of 30,567,[8] it is estimated that the City currently provides approximately 5 acres of parkland (including recreational waterways) per 1,000 residents.

d. Schools

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). Due to the nature of the proposed project and its entirely senior resident population, the project would not increase the District's school population. Additionally, any indirect increase in demand on schools resulting from project-related job creation is not anticipated to be significant and would not be sufficient to trigger the need for new facilities. Therefore, this EIR does not include a detailed discussion of school facilities and capacity.

e. Water Services

The Estero Municipal Improvement District (EMID) manages the distribution, operation, and maintenance of Foster City's water supply system. The project was considered in the Water Supply Assessment conducted for the 2012 Gilead Master Plan project. Information in this section is primarily based on EMID's *2010-2015 Urban Water Management Plan*[9] and the Water Supply Assessment published by EMID in November 2012 for the Gilead Sciences Integrated Corporate Campus Master Plan Subsequent EIR.[10] The City's sources of water, water treatment facilities, and water distribution system is described below.

(1) Water Sources

EMID is the "utility arm" of the City of Foster City. EMID administers the operations and maintenance of the water distribution system for the City of Foster City. EMID also supplies water to residents in part of the City of San Mateo.

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[8] United States Census Bureau, 2010. http://quickfacts.census.gov/qfd/states/06/0625338.html. Accessed January 28, 2013.

[9] Estero Municipal Improvement District, 20010-2015. *Urban Water Management Plan*.

[10] LSA Associates, Gilead Sciences Integrated Corporate Campus Master Plan, Subsequent Environmental Impact Report, Public Review Draft, December 2012.

EMID, serving a population of approximately 36,100, is located midway between San Francisco and San Jose.[11] It is approximately 10 miles south of 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. EMID has one main source of water supply line, a 24-inch transmission main line connected to San Francisco Public Utility Commission's (SFPUC) 54-inch Crystal Springs No. 2 line. The connection point is located in the City of San Mateo on Crystal Springs Road next to the address, 801 Crystal Springs Road.

Today, the City of Foster City is approximately 99 percent built-out with a number of redevelopment projects in the various stages of planning. By 2035, the population served by EMID (City of Foster City and part of San Mateo) is expected to be 39,223. Table V.I-1 shows the projected population anticipated in five (5) year increments until the year 2035, as included in the 2010 Urban Water Management Plan.

TABLE V.I-1 EMID SERVICE AREA POPULATION PROJECTIONS

	2010	2015	2020	2025	2030
Service Area Population	36,100	37,088	37,924	38,492	38,869

Source: Estero Municipal Improvement District, 2010-2015. Urban Water Management Plan.

EMID purchases its water from the 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.

In addition to the 24-inch transmission main, EMID has two separate 12-inch emergency supply connections with California Water Service Company (which

[11] Estero Municipal Improvement District, 20010-2015. *Urban Water Management Plan*.

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.

From 2005 to 2010 (inclusive), the EMID has purchased an average of 5,859 acre-feet per year (AFY) of water from SFPUC.[12]

In 1934, San Francisco combined the Hetch Hetchy system and Spring Valley system to create the SFPUC system. The rights to local diversions were originally held by the Spring Valley Water Company, which was formed in 1862. The SFPUC is owned and operated by the City and County of San Francisco. In 1984, SFPUC executed the Settlement Agreement and Master Water Sales Contract with the members of the BAWSCA. The contract expired in June 2009, and was replaced by a the "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County," (WSA), entered into in July 2009. The WSA addresses the rate-making methodology used by the City of San Francisco in setting wholesale water rates for its wholesale customers in addition to addressing water supply and water shortages for the Regional Water System. The WSA has a 25-year term.

The SFPUC has the capacity to meet the demands of its retail and wholesale customers in wet and normal years. The WSA provides for a 184 million-gallons-per-day (MGD) supply assurance to the SFPUC's wholesale customers collectively, subject to reduction to the extent and for the period made necessary by reason of water shortage due to drought, emergencies, or by malfunctioning or rehabilitation of the regional water system. EMID's Individual Supply Guarantee is 5.9 MGD (or approximately 6,600 acre feet per year). Although the WSA 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. SFPUC's supply assurance to EMID until the year 2030 is shown in Table V.I-2. The supply assurance factored in existing and planned future re-developments within EMID's service area.

[12] Estero Municipal Improvement District, 2010-2015. *Urban Water Management Plan*.

TABLE V.I-2 SFPUC'S SUPPLY ASSURANCE TO EMID 2010 - 2030

Water Supply Source	2010	2015	2020	2025	2030
SFPUC (AFY)	6,945	7,057	7,281	7,505	7,616

Source: Foster City/Estero Municipal Improvement District, 2008. Water Supply Assessment.

Table V.I-3 shows the three-year estimated minimum water supply from SFPUC to EMID as a three-year worst case supply projections (for example, in a case of drought or other causes of reduced water supply) based on the 2010-2015 Urban Water Management Plan allocation. The calculated supply would not meet the projected demand in any single dry year, from 2015-2030. In this case, EMID would implement additional measures (as described in the Water Shortage Contingency Plan of the 2010-2015 Urban Water Management Plan) to reduce consumption. These measures could include enforcement of regulations to reduce wasting of water; water conservation/public education programs; and, in periods of longer-term shortage, water rationing measures.

TABLE V.I-3 PROJECTED DELIVERIES FOR THREE MULTIPLE DRY YEARS

	One Critical Dry Year	Current Deliveries During Multiple Dry Years		
		Year 1	Year 2	Year 3
SFPUC System-Wide Shortage (%)	10%	10%	20%	20%
Wholesale Allocation (MGD)	152.6	152.6	132.5	132.5
EMID Allocation Factor (%)[a]	3.00	3.00	3.00	3.00
EMID Allocation (AFY)	5,132	5,132	4,456	4,456
EMID Allocation (MGD)	4.58	4.58	3.98	3.98
Allocation as % of 5.9 MGD Assurance	78	78	67	67

[a] Appendix F, EMID 2010-2015 Urban Water Management Plan. The Allocation Factor is based on the current Tier 2 Drought implementation Plan (DRIP) value of 3.00%. The Allocation Factor will be recalculated by BAWSCA each year as it is based on a variety of factors including historical water purchases over the last 3 years.

Source: Estero Municipal Improvement District, 2010-2015. *Urban Water Management Plan*

(2) Water Treatment, Distribution and Storage Facilities

As discussed above, the majority of the SFPUC's water supply originates in the upper Tuolumne River watershed, high in the Sierra Nevada Mountains. SFPUC treats its water to meet all drinking water standards. There are two water pressure reducing stations along the transmission main that reduce the SFPUC water pressure from 120 pounds per square inch (psi) to the operating range of 40 to 60 psi. EMID has only one pressure zone and there is ade-

quate head pressure from SFPUC supply to distribute water directly into the distribution system without pumping.

EMID receives treated water from SFPUC and distributes it to its customers. As a retailer, EMID has no direct control over its water supply. EMID has four (4) above ground water storage tanks with a total capacity of 20 million gallons. A booster pump station is activated to pump water from the storage tanks into the distribution system. The booster pump station has two electrical pumps and three engine drive pumps. The engine drive pumps are powered by natural gas with propane backup.

f. Wastewater (Sanitary Sewer) System

The wastewater collection and treatment system serving the project site is owned by EMID and operated by the Sewer Division of the Foster City Public Works Department. The existing collection system and wastewater treatment facilities serving the City and the project site are described below.

(1) Collection System

The Sewer Division of the Foster City Public Works Department operates and maintains approximately 66 miles of sanitary sewer lines, more than 8.5 miles of sewer force mains, 48 pumping stations, 15 permanent standby generators, and four portable generators to ensure that the approximately 3 million gallons of wastewater that Foster City homes and businesses generate each day is pumped to the jointly owned San Mateo Water Quality Control Plant (SMWQCP) in San Mateo.

Infrastructure in the vicinity of the project site consists of a 6-inch sanitary sewer line located beneath E. Hillsdale Boulevard, which follows the canal connected to the Foster City Lagoon. This pipe was constructed in 1962, and carries approximately two-thirds of the wastewater flow from the City. The system is maintained and upgraded on an as-needed basis. Smaller sewer lines run in or adjacent to the project site beneath Civic Center Drive (6-inch) and Shell Boulevard (16-inch line on east side of street and 15-inch line on west side of street). A 15-inch line beneath Shell Boulevard outfalls to Lift Station No. 9, located at the intersection of Shell Boulevard and E. Hillsdale Boulevard.[13] Wastewater is transported via a collection of mains and lift stations from the project site directly to the SMWQCP, where it is reclaimed and then discharged into the San Francisco Bay.

[13] Brian Kangas Foulk, 1999. *Civic Center Master Plan Utility Study*.

The total capacity of Lift Station No. 9 is about 2,000 gpm.[14] The 15-inch line beneath Shell Boulevard is considered at capacity when flowing two-thirds full, meaning the total capacity of the line is about 1,023 gpm.[15]

(2) Wastewater Treatment Facilities

Wastewater treatment is provided by the San Mateo Wastewater Treatment Plant (WWTP), which is jointly owned by EMID and the City of San Mateo. EMID owns 27 percent of the treatment plant's average daily flow capacity, or approximately 4.3 MGD. The treatment plant's maximum daily wet weather capacity is 39.3 MGD and its maximum daily dry weather capacity is 22.0 MGD. The treatment plant's 1 hour peak wet weather capacity is 60 MGD and its 1 hour peak dry weather capacity is 39.5 MGD. The average daily wastewater flow in 2012 (up to July 31) was 15.7 MGD.[16]

g. Storm Drainage System

Three separate public storm drain systems serve the project site and surrounding area. There is an existing storm drain line beneath Civic Center Drive (entire length between Foster City Boulevard and Shell Boulevard) and two storm drain lines are "stubbed" into the project site at the east end (a line is stubbed beneath Foster City Boulevard) and the west end (a line is stubbed beneath Shell Boulevard).

h. Solid Waste

The following section describes Foster City's non-hazardous and hazardous waste disposal services and capacity, as well as the City's solid waste regulatory context, including source reduction and recycling.

(1) Non-Hazardous Solid Waste

Foster City is a member agency of the South Bayside Waste Management Authority (SBWMA), also known as RethinkWaste, a joint powers authority created in 1982 to facilitate waste management programs for its member agencies. The SBWMA contracts with private companies for hauling and disposal of solid waste. Recology San Mateo County provides recycle, compost and garbage collection services for residents and businesses in the SBWMA service area. Non-hazardous solid waste and recyclables are taken to the Shoreway Environmental Center on the border of the cities of San Carlos and Redwood City, which includes a Transfer Station operated by South Bay Recycling, as well as a Public Recycling Center. The facility was permitted in 2010 by the California State Integrated Waste Management Board (CIWMB) to re-

[14] Brian Kangas Foulk, 1999, op. cit.
[15] Ibid.
[16] LSA Associates, Gilead Sciences Integrated Corporate Campus Master Plan, Subsequent Environmental Impact Report, Public Review Draft, December 2012.

ceive 3,000 tons per day of solid waste and recyclables, and permit review is required every five years. Currently, the facility processes approximately 1,154 tons of waste per day.[17] After undergoing processing, waste from Shoreway Environmental Center is delivered to the Corinda Los Trancos (Ox Mountain) Landfill in Half Moon Bay. The landfill handles construction, demolition, and mixed municipal waste. The landfill has a capacity of 69 million cubic yards. In the year 2000, the total estimated capacity used was 25 million cubic yards, or 36 percent.[18] The landfill has a permitted throughput of 3,598 tons per day[19] and is anticipated to have sufficient capacity to operate until 2018.[20]

(2) Hazardous Solid Waste

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.[21] The Kettleman Hills Landfill B-18 encompasses 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.[22]

2. Regulatory Context

The following describes the solid waste regulatory context in Foster City, including statewide mandates and local General Plan and Municipal Code requirements.

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[17] San Mateo County, *San Mateo County Integrated Waste Management Plan.* June, 2010.

[18] LSA Associates, Gilead Sciences Integrated Corporate Campus Master Plan, Subsequent Environmental Impact Report, Public Review Draft, December 2012.

[19] Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day. This figure is established in the current solid waste facilities permit issued by the Integrated Waste Management Board.

[20] California Integrated Waste Management Board, 2004. Facility/Site Summary Details, Ox Mountain Sanitary Landfill. Website: www.ciwmb.ca.gov.

[21] Waste Management, Inc., 2013. CWM Kettleman Hills Landfill. Website: http://kettlemanhillslandfill.wm.com

[22] 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.

a. State Mandate AB 939

The California Integrated Waste Management Act of 1989 (AB 939) required local cities and counties to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. AB 939 mandates that each jurisdiction adopt a Source Reduction and Recycling Element (SRRE) to specify how the community will meet the 50 percent waste diversion goal. Each jurisdiction is also required to take measures to reduce solid waste generation and to provide for the safe disposal of special and hazardous wastes. Certain special and hazardous wastes are included within the purview of the SRRE, but communities are also required to adopt a separate Household Hazardous Waste Element (HHWE) to address hazardous wastes generated by households. The City adopted a SRRE and HHWE in 1992. The City of Foster City reached the 50 percent or greater diversion rate in 1997 when it achieved waste diversion rates of 54 percent and in 1998 and 2006, when it achieved waste diversion rates of 50 percent.[23] In 2011, the City of Foster City Annual Per Capita Disposal Rate (PPD) Per Resident was 2.7, and Annual PPD Per Employee was 4.5.[24,25] The PPD Per Resident target is 3.7, and the PPD Per Employee target is 7.1.

Since 1989, the County of San Mateo and its cities have implemented a variety of programs to address solid waste including curbside recycling, commercial recycling programs, organics collection, backyard composting, electronics recycling, construction and demolition recycling ordinances and green building programs. Foster City requires that at least 50 percent of all demolition and construction debris be diverted from the landfill by using recycling, reuse, salvage, and other diversion programs.[26] In addition, project applicants are required to prepare a Waste Management Plan which accurately estimates the tonnage of demolition and construction debris generated by applicable projects. Plans for diverting these materials must be described by the applicant and approved by the City. The California Integrated Waste Management Board estimates an average waste generation rate of 10.5 pounds

[23] California Integrated Waste Management Board (CIWMB), 2013. Waste Flows, Jurisdiction Profile for City of Foster City. www.ciwmb.ca.gov/Profiles/Juris/jurp ro-file.asp?rg=c&jurid=164&jur=foster+city. Accessed February 8, 2013.

[24] 2011 Diversion/Disposal Rates have not yet been approved by the City of Foster City.

[25] CalRecycle, 2013. Jurisdiction Diversion/Disposal Rate Summary (2007 - Current). http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/ JurisdictionDiversionPost2006.aspx Accessed March 1, 2013

[26] City of Foster City, 2005. Ordinance No. 523: Recycling and Salvaging of Construction and Demolition Debris. November 21.

per employee per day for commercial uses[27] and 5 pounds per unit per day for multifamily residential uses.[28]

b. California Code of Regulations, Title 24: California Building Standards Code

Title 24, California's Energy Efficiency Standards for Residential and Non-Residential Buildings, requires construction of new buildings and additions to adhere to energy efficiency standards. These standards include targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills, and the use of environmentally sensitive materials in construction and design.

The City of Foster City follows the most current State business codes. The City's General Plan Conservation Element, Program C-0, requires new construction to be built according to Title 24.

c. Telecommunications

A number of telecommunications providers currently provide service to Foster City. AT&T (formerly SBC/Pacific Bell) is the City's primary telephone provider (or Incumbent Local Exchange Carrier – ILEC). Other carriers such as Qwest, Williams Communications, MCI/Worldcom, and Sprint have started providing services to commercial accounts in Foster City. Other providers offer DSL-type services to the residential market, but most are reliant upon AT&T's infrastructure. The City has a non-exclusive Franchise Agreement with the Comcast Corporation, which is currently the sole cable television and broadband internet provider. The City regulates Comcast services as provided under federal law. All of these service providers are privately owned and operated, and recover the costs of operation, maintenance, and capital improvement through connection and user fees, which are collected from all customers. These services are currently available at the project site.

The California Public Utilities Commission, which regulates California's telecommunication industry, requires that local phone service providers anticipate and serve new growth. To meet this requirement, local providers continually upgrade their facilities and infrastructure, adding new facilities and

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[27] Integrated Waste Management Board, 2013. Estimated Solid Waste Generation Rates for Commercial Establishments. www.ciwmb.ca.gov/wastechar/wastegenrates/commercial.htm Accessed February 8, 2013.

[28] Integrated Waste Management Board, 2013. *Estimated Solid Waste Generation Rates for Residential Developments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Residential.htm. Accessed February 8, 2013.

technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City.

d. 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. Electrical services are currently available at the project site. Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, details requirements to achieve minimum energy efficiency standards of the State of California. The standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating and lighting. Compliance with these standards is verified and enforced through the local building permit process.

3. Impacts and Mitigation Measures

This section discusses public service and utility impacts that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate.

a. Significance Criteria

The project would have a significant impact on the environment related to public services, utilities and recreation if it would:

- Result in substantial adverse physical impacts associated with the provision of, or 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 and/or emergency response;
    - Police protection;
    - Schools;
    - Parks; or
    - Other public facilities.
- 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.

- Create a shortage of park facilities for new residents because total park acreage does not meet the Government Code Standards of 5 acres per 1,000 population per Foster City Municipal Code Section 16.36.
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- Exceed wastewater treatment requirements of the San Francisco Bay RWQCB.
- Require or result in construction of new water or wastewater facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require or result in construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Cause there to be insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Require service by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Violate federal, State, and local statutes and regulations related to solid waste.

b. Less-Than-Significant Public Services, Utilities and Recreation Impacts

Implementation of the proposed Master Plan would result in the following less-than-significant impacts to public services, utilities and recreation.

(1) Fire Protection

As described above, the FCFD's average response time goal within City limits is 3.5 to 4.5 minutes, and it is currently meeting that goal. The project site is immediately adjacent to the Fire Department and the average response time to the project site under current conditions is about 1 minute. Additional personnel, equipment, facilities, or other physical improvements would not

be required to serve the project.[29] Also, the FCFD currently has adequate engines/equipment to cover new development that may occur in the project area.[30] Given that the site is currently vacant, the proposed development would cause an increased demand for emergency responses to the project site. However, the FCFD anticipates it would still be able to meet its response time goal. In addition, increased development would not exceed the capabilities of existing or planned FCFD staffing levels.[31] As such, development of the proposed project would result in a less-than-significant impact to fire and emergency medical services within the City.

The proposed project would be required to meet all FCFD requirements for sprinkler systems, alarms, fire flow, access, and fire hydrant spacing. The FCFD's Underground Piping for Private Hydrants & Sprinkler Supply provides a guideline of minimum requirements for the design and installation of private hydrant and/or sprinkler supply underground piping. Also, the City of Foster City has modified, by City Ordinance, some sections of the California Fire Code (CFC) which would require further compliance. Other requirements include the following:

- Underground fire main water pipes must be C900 plastics with a minimum 8-inch diameter.
- Hydrants should be spaced 250 feet apart with a hydrant located within 50 feet of any FDC (Fire Department [sprinkler system] Connection); they must be Clow 92 low profile units with outlets at least 18 inches above the surface.
- New buildings, regardless of use, must have a fire sprinkler system complying with National Fire Protection Association (NFPA) 13. Fire flow requirements are outlined in CFC Appendix B, with a 50 percent reduction for sprinkler systems.
- All utilities, including fire sprinkler systems, must have an approved flex connection in a vault where the underground pipe connects to the structure (NFPA 13D and 13R are not acceptable for this project).[32]

In the event that the demand for service changes, the City will evaluate staffing and equipment needs in order to maintain acceptable service levels, response times, and other performance standards.

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[29] Keefe, Michael, 2012. Fire Chief, Foster City Fire Department. Written Communication with City of Foster City. March 4, 2013.

[30] Keefe, Michael, 2013, op. cit.

[31] Keefe, Michael, 2013. Fire Chief, Foster City Fire Department. Written Communication April 8, 2013.

[32] Mapes, John, 2013. Fire Marshal, Foster City Fire Department. Written Communication with City of Foster City. March 4, 2013.

(2) Police Services

The proposed project would add about 314 residents in the market rate for sale units, about 167 residents in the assisted and independent living apartments, and about 73 residents at the affordable housing component,[33] for a total of approximately 553 added residents to the City. The addition of housing to the project site would result in an increase in calls for service as the project site is currently undeveloped. In addition, residential complexes typically utilize police services well into evening and nighttime hours, after businesses typically close. As described above, the City strives for a sworn staffing level of 1.5 officers per 1,000 residents. With a population of 30,567[34] and 36 sworn officers, The current police officer to resident ratio is approximately 1.2 sworn officers per 1,000 residents. Under current conditions, nine new sworn officers are needed to bring the staffing level to 1.5 officers per 1,000 residents. The addition of project residents would require less than one additional sworn officer to serve the new development within FCPD's desired staffing ratio. The number of residents that the project would add is within the anticipated range for Foster City's population growth.

Police services and staffing ratios 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 the project would contribute to the City's General Fund for such purposes as funding added personnel. Additional officers needed to meet FCPD's desired staffing level would be accommodated by existing facilities. However, staffing levels do not relate to physical impacts and thus are not considered an impact under CEQA. This analysis is therefore provided for informational purposes only.

No new police facilities would need to be constructed, and therefore, the proposed project would not result in any physical impacts related to the need for new or alteration of existing police facilities. The amount of traffic and the demand for parking would increase at the project site, but would not interfere with the existing operations and response times of the police station, which is located across the street on Civic Center Drive. As such, development of the proposed project would result in a less-than-significant impact to police services within the City.

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[33] Foster City Community Partners, 2012. Personal communication with Urban Planning Partners. December 17.

[34] United States Census Bureau, 2010. http://quickfacts.census.gov/qfd/states/06/0625338.html. Accessed January 28, 2013.

(3) Parks and Recreation

As previously described, the City of Foster City has a policy of providing 5 acres per 1,000 residents as a threshold to measure how well its citizens are provided with park and recreational facilities access. With a 2010 population of 30,567, the City currently exceeds this policy, with more than 10 acres of recreational waterways and parks per 1,000 residents. The proposed project would add approximately 553 residents to the project site and provide 1.3 acres of public open space. The proposed project would be subject to payment of park fees for each residential unit of the project, pursuant to City Code Section 16.36. Additionally, the project applicant shall be given a credit against the cost of developing the 1.3 acres of land for park and on-site facilities available to the public in the plaza. Payment of this per unit fee, in combination with the dedication and development of the 1.3 acres of public open space at the project site would satisfy City requirements resulting in a less-than-significant impact related to the provision of parks and recreational services.

(4) Schools

The proposed project would increase the City's population by approximately 553 new residents. All residential units within the project would be occupied by seniors, and therefore, no increase in the school district's population is anticipated. Additionally, any indirect increase in demand on schools resulting from project-related job creation is not anticipated to be significant. Pursuant to California Education Code Section 17620(a)(1), the project applicant would pay all required school impact fees to the San Mateo-Foster City School District and the San Mateo Union High School District. Senior housing is exempt from school impacts fees; however the commercial component of the project would be subject to these fees. Pursuant to Section 65995(3)(h) of the California Government Code, the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning use, or development of real property, or any change in governmental organization or reorganization as defined in Section 56021 or 56073, on the provision of adequate school facilities." Pursuant to Section 65995(3)(h) of the California Government Code, this impact would not be considered significant.

(5) Water

The project was considered in the Water Supply Assessment for the Gilead Integrated Corporate Campus Master Plan and Subsequent EIR in 2012, com-

(5) Water

The project was considered in the Water Supply Assessment for the Gilead Integrated Corporate Campus Master Plan and Subsequent EIR in 2012, completed under California Senate Bill 610 and California Water Code 10912.[35] The Gilead Water Supply Assessment assumed that development of the 15-acre site would result in a net water demand of 88 acre-feet per year (AFY), or approximately 78,500 gallons per day (GPD).[36] Preliminary water usage and sewer generation rate calculations anticipate that the 15 Acres project would create demand of about 68,782 GPD, or approximately 77 AFY, as shown in Appendix E. This water demand is not great enough to require a new Water Supply Assessment. Because the anticipated water demand is less than that considered in the Gilead Sciences Integrated Corporate Campus Master Plan and Subsequent EIR Water Supply Assessment, that Assessment is used in this EIR to analyze impacts of the 15 Acres project related to water. The City of Foster City 2010 Urban Water Management Plan was also used in this document to assess water supply and facilities.

Table V.I-4 shows the anticipated water supply every 5 years between 2015 and 2030 (assuming no supply disruptions or multi-year droughts), projected demand associated with other major anticipated development projects in the EMID service area, the proposed project's water demand as projected in the Gilead Water Supply Assessment, and water supply remaining after accounting for expected demand. This analysis from the Gilead Water Supply Assessment assumes a higher demand associated with the 15 Acres project than is anticipated, and therefore it provides a conservative estimate of remaining water supply.

As indicated in Table V.I-4, 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, including the proposed project, EMID would have a sufficient water supply to meet expected demand. The expected water supply surplus would range from 582 acre feet per year in 2015 to 320 acre feet per year in 2030.

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[35] 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 Accessed March 1, 2013.

[36] Estero Municipal Improvement District, *Water Supply Assessment Report for Gilead Integrated Corporate Campus Master Plan Project; 15-Acres Project; 400 Mariners Island Blvd., City of San Mateo (Tidelands Park) Residential Project; Chess Hotel Project; Chess/Hatch Drive Office Project; Bayside Towers III Project; Visa V Project; Marina Project*. November 5, 2012.

TABLE V.I-4 EMID WATER SUPPLY AND DEMAND PROJECTIONS PLUS PROJECT (ACRE FEET/YEAR)

	2015	2020	2025	2030
Normal Year Supply	6,608	6,608	6,608	6,608
EMID Water Demand	5,373	5,497	5,579	5,635
Proposed 15-Acres Project Demand	88	88	88	88
Other Major Project Demand	565	565	565	565
Remaining Supply	582	458	376	320

Source: Estero Municipal Improvement District, 2012.

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 5 of a 5-year drought starting in 2030 to approximately 5,030 acre feet. The anticipated supply that year, taking into account a 20 percent reduction in water deliveries from the SFPUC, would be 5,286 acre feet. 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 256 acre feet.

Therefore, the water demand associated with the project and all foreseeable 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.

Because the proposed project would represent an increase in water demand that would be within the anticipated range for the City, it would not lead to insufficient water supplies in existing entitlements and resources, or require new or expanded entitlements. Therefore, the proposed project would result in a less-than-significant impact upon potable water supply.

(6) Wastewater Treatment

As described above, the WWTP's maximum daily wet weather capacity is 39.3 MGD and its maximum daily dry weather capacity is 22.0 MGD. The WWTP's average daily flow is approximately 15.7 MGD (approximately 71 percent of

total plant dry weather capacity). EMID is allocated approximately 27 percent of the WWTP's total daily flow capacity, or 4.3 MGD. The City's average daily flow as of 2012 was 2.30 MGD (approximately 53 percent of allocated daily flow capacity). The approximate net increase of approximately .08 MGD as a result of the proposed project would increase the City's average daily flow to 2.38 MGD. Because the proposed project would allow EMID to remain well below its allocated daily flow capacity at the WWTP, it would result in a less-than-significant impact on wastewater treatment and disposal, and no new wastewater facilities would be required to serve the project.[37]

(7) Solid Waste

The proposed project would be served by landfills with the capacity to handle solid wastes generated by the operational phases of the proposed project. As required by AB 939, the California Integrated Waste Management Act, a minimum of 50 percent of the City's waste must be recycled. Per the City's construction and demolition ordinance, the construction contractor would be required to recycle a minimum of half of all demolition and construction debris to meet City requirements. Chapter 15.44 (Ordinance 593) of the Foster City Municipal Code requires construction contractors to take their construction and demolition debris to a facility that processes construction and demolition materials for recycling. Most of these facilities yield recycling rates in excess of 80 percent. The typical residual that would go to the landfill is 10 to 15 percent of the debris.

This would not substantially decrease the available capacity at the Ox Mountain Sanitary Landfill. As previously described, the CIWMB estimates an average waste generation rate of 10.5 pounds per employee per day for commercial uses and 5 pounds per multi-family residential unit per day. The proposed project would result in the addition of an estimated 70 retail employees, 75 office employees, 20 employees at the assisted living component of the project, and 3 employees of the affordable housing component, for a total of 168 new employees that would together produce about 1,764 pounds of waste per day.[38] The 414 new residential units/beds would together generate about 2,070 pounds of waste per day. Therefore, within the project site there would be an estimated addition of 3,834 pounds per day of solid waste. This represents less than 0.1 percent of the total daily permitted throughput for the Shoreway Environmental Center, which is permitted for a daily throughput of 3,000 tons of solid waste and recyclables. The amount of solid waste generated by operation of the proposed project would not exceed

[37] LSA Associates, Gilead Sciences Integrated Corporate Campus Master Plan, Subsequent Environmental Impact Report, Public Review Draft, December 2012.

[38] Foster City Community Partners, 2012. Personal communication with Urban Planning Partners. December 17.

the landfill capacity and thus development of the proposed project would have a less-than-significant impact on landfill capacity. In addition, Allied Waste Management currently provides recycling services to the project site. These services contribute to a reduction in solid waste generated by proposed development. The design and location of on-site recycling bins serving new development would be subject to City review and approval prior to issuance of building permits.

(8) Electricity, Gas, and Telecommunications

Development of the proposed project would occur in a location that currently has electricity, gas, telephone, cable, and internet services. As such, the proposed project would have a less-than-significant impact on electricity, gas, telecommunications, cable, and internet services.

c. Significant Public Services, Utilities and Recreation Impacts

The proposed project would result in significant impacts to public services or utilities.

Impact UTL-1: Implementation of the proposed project could result in wastewater generation that exceeds the collection system's capacity. (S)

The proposed project would be served by existing sewer lines beneath the project site. Because the proposed project is in the schematic stage, detailed plans for new lateral connections to the existing sewer lines have not yet been developed. As described above, wastewater collection infrastructure currently serving the project site consists of a 20-inch force main located beneath E. Hillsdale Boulevard, which follows the canal connected to the Foster City Lagoon. Smaller sewer lines run within the project site beneath Civic Center Drive, Shell Boulevard, and Foster City Boulevard. To address any potential impact to the existing sanitary sewer infrastructure resulting from the project and to ensure that the infrastructure will have sufficient capacity to accommodate project wastewater flows, the following mitigation measures shall be implemented.

Mitigation Measure UTL-1: The following two-part mitigation measures shall be implemented:

UTL-1a: Prior to the issuance of a site development permit/use permit, 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.

UTL-1b: The applicant shall prepare pre-construction survey reports prior to the issuance of a site development permit/use permit and post-construction survey reports prior to issuance of occupancy permits on the existing wastewater collection and force mains, to be submitted to the Foster City Public Works Department for review.

Implementation of this two-part mitigation measure will reduce the impact to the wastewater collection system to a less-than-significant level. (LTS)

Impact UTL-2: Implementation of the proposed project could result in stormwater generation that exceeds the collection system's capacity. (S)

The proposed project would be served by existing storm drain lines in the vicinity of the project site. Because the proposed project is in the schematic state, detailed plans for managing runoff from the project site have not yet been developed. To address any potential impact to the existing storm drain infrastructure resulting from the project and to ensure that the infrastructure will have sufficient capacity to accommodate project stormwater flows, the following mitigation measures shall be implemented.

Mitigation Measure UTL-2: Confirmation of the capacity of the City's surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements and connections to accommodate the proposed project. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. The City shall require the applicant to implement BMPs to reduce the peak stormwater runoff from the project site to the maximum extent practicable. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers. (LTS)

J. AESTHETICS AND SHADE AND SHADOW

Potential effects of the proposed project on aesthetic resources in the vicinity of the project site are evaluated in this section. Also considered in this section is the project's consistency with the policies of the Foster City General Plan relevant to aesthetics, as well as relevant requirements and standards set forth in the Foster City Zoning Code and Foster City Civic Center Urban Design Guidelines. The following analysis is based upon: 1) field surveys and photographs of the project site taken in February 2013; 2) data collected from and correspondence with City staff; 3) information provided by the project applicant's architect, and 4) visual simulations of the project site that depict "before" and "after" conditions. The visual simulations are intended to convey an impression of the location, scale and massing of the proposed project, and to demonstrate aesthetic outcomes associated with the development. These simulations are *conceptual and are intended to illustrate basic building mass.* The simulations do not illustrate architectural and site design details, such as building relief, colors and materials, artistic features, etc. Architectural detail is not considered in this evaluation; the City will consider the specifics of the design details, as well as building and landscaping materials, as part of its design review process for each Specific Development Plan, which will be required for each development phase. The shade and shadow effects of the project are also evaluated in this section.

1. Setting

The following passages describe visual character, including the visual character of the existing project site, the areas immediately surrounding project site, and the general project vicinity.

a. Local Context

As discussed in Section V.A., Land Use, of this EIR, Foster City is a "Planned Community" constructed and implemented on the basis of an organized program of development. The project site and surrounding community are generally characterized by a combination of newer low- and mid-rise residential, office, and commercial structures. Particularly unique to the project area is the convergence of several building types and land uses within a relatively small space. Public and institutional structures occupy the parcels immediately adjacent to the site. Residential development extends to the east and south, while Leo J. Ryan Memorial Park, the City's Recreational Center and the Foster City Lagoon occupy lands to the west of the project site. To the northwest of the site rise the 8-story Parkside Towers, the 8-story Visa Towers and the 22-story Metro Tower. Northwest of the site, on the northern corner of Foster City Boulevard and East Hillsdale Boulevard, is Triton Pointe project, a four-phased mixed-use project of which Phase A is currently under

construction. This project includes 48,000 square feet of non-residential space and 166 multi-family residential units with buildings up to 65 feet tall, contributing to the newer higher density character of the area. The visual character of this convergence is discussed more fully in the following sections.

(1) Existing Visual Character of the Project Site

The 15-acre project site is generally flat, undeveloped, and consists mainly of graveled and paved surfaces with intermittent patches of opportunistic non-native vegetation. Seasonal wetlands may occur within shallow topographical depressions on the eastern portion of the site. The site presently contains a temporary tent structure, situated on the northern central portion of the site. The tent structure is approximately 6,400 square feet. The structure was erected prior to 2007 and is generally used for equipment storage by the City. The visual character of the project site is presented in Photos 1 and 2.

(2) Views from the Project Site

Views from the project site represent those typical of Foster City, including residential, commercial, and institutional structures, as well as parks and waterways. While vistas are generally limited by surrounding development on adjacent parcels, a few specific visual amenities from the project site are noteworthy, as discussed below. A more thorough discussion of surrounding land uses is included in Section V.A, Land Use, of this report. The following subsections describe views from four directional perspectives.

(3) Views Towards the East

Views to the east of the project site, across Foster City Boulevard, as shown in Figure V.J-1 consist mainly of townhome and apartment building frontages. The apartments and townhomes along Foster City Boulevard vary in age and style, but are generally modern structures, ranging in height from 2 to 3 stories. This pattern of development extends along Foster City Boulevard, between East Hillsdale Boulevard and Balclutha Drive and generally obstructs views beyond these structures.

(1) Views Towards the South

Views to the south of the project site, as shown in Figure V.J-1, largely consist of the North Peninsula Jewish Campus (NPJC), which is comprised of several modern, barrel-roofed, mid-sized structures ranging from approximately 30 to 50 feet in height. Towards the southeastern corner of the site, a small portion of Boat Park is visible, with apartment and condominium complexes, such as The Admiralty, visible across Foster City Boulevard.

View from the Project Site towards the east, across Foster City Boulevard.

View from the Project Site towards the south.

Source: RRM Design Group, 2008

Figure V.J-1
The 15 Acres
Views East and South from the Project Site

View from the Project Site towards the west, across Shell Boulevard.

View from the Project Site towards the north, across Civic Center Drive.

Source: RRM Design Group, 2008

Figure V.J-2
The 15 Acres
Views West and North from the Project Site

View from the west towards the Project Site, across Shell Boulevard.

View from the north towards the Project Site, across the intersection of Foster City Boulevard and East Hillsdale Boulevard.

Source: RRM Design Group, 2008

Figure V.J-3
The 15 Acres
Views from the West and North towards the Project Site

View from the east towards the Project Site, across Foster City Boulevard.

View from the south towards the Project Site, across the Foster City Boulevard Bridge over Foster City Lagoon.

Source: RRM Design Group, 2008

Figure V.J-4
The 15 Acres
Views from the East and South towards the Project Site

(2) Views Towards the West

Views to the west of the project site, across Shell Boulevard, include the William E. Walker Recreational Center, a modern low-rise structure rising approximately 20 feet in height, as shown in Figure V.J-2. Also visible are the Recreational Center's parking lot and tennis courts to the southwest. Leo J. Ryan Memorial Park, an urban park adjacent to Foster City Lagoon, is located adjacent to the northwestern corner of the project site. The Park and Lagoon are visible from most vantage points within the project site. Farther to the west, on a clear day, the hills of San Mateo are visible on the horizon.

(3) Views Towards the North

Views to the north, across Civic Center Drive, consist mainly of the Foster City Civic Center Campus, as shown in Figure V.J.-2, which includes City Hall, the City Fire and Police Departments and other government offices, as well as the Foster City Public Library. The Civic Center Campus consists of three modern glass and steel structures, the tallest of which rises to approximately 45 feet. The Public Library is also a modern structure, constructed of glass and brick, and is approximately 30 feet tall. The Parkside Towers office and retail complex, consisting of two 8-story office towers and street-level commercial facilities, is visible from the site, across East Hillsdale Boulevard. Also visible farther to the north are the 8-story Visa Towers and the 22-story Metro Tower.

(4) Views To and Through the Project Site from Surrounding Areas

The project site is visible from only a few public vantage points in the immediate vicinity of the site. This is because the site is mostly undeveloped and possesses few defining landmarks that are visible from afar. In addition, Foster City's flat terrain combined with relatively dense development and vegetation generally limits public vistas from all but a few points within the City. In the absence of a defining landmark, the project site is most easily identified by locating recognizable features adjacent to the parcel, namely the NPJC, Civic Center Campus, Recreation Center, Leo Ryan Memorial Park, and Parkside Towers. Views to and across the project site from nearby public vantage points are described below.

(5) Views from the West

A view of the project site, from Leo J. Ryan Memorial Park, is shown in Figure V.J-3. As the image illustrates, the project site is framed by the Foster City Library on the left (north) and the NPJC on the right (south). As described, trees and landscaping partially block views of and through the site. Despite these visual obstructions, low-rise apartment and townhome development is

still visible on the far (east) side of the project site, across Foster City Boulevard.

(6) Views from the North

A view of the project site, from the intersection of Foster City Boulevard and East Hillsdale Boulevard is shown in Figure V.J-3. In this image, the project site is framed by the NPJC on the left (east) and the Civic Center Campus on the right (west). Views of and through the site from this orientation are largely obstructed by the Civic Center Campus and the landscaping throughout the City Hall Plaza.

(7) Views from the East

As discussed, Foster City's topography, combined with existing development patterns, limits views of the project site to a few public vantage points. This is particularly the case with views from the east. While the project site is generally not visible from public vantage points east of Foster City Boulevard, some views of the site are visible from the east. Figure V.J-4 shows the project site from the intersection of Admiralty Lane and Foster City Boulevard. From this orientation, the site's weedy vegetation, temporary tent structure and utility line towers are visible. Farther to the west, the William E. Walker Recreational Center and facilities are visible. On the western horizon, a silhouette of the San Mateo Hills is discernible.

(8) Views from the South

Views of the project site from the south are generally limited to public areas within the site's immediate proximity. However, as shown in Figure V.J-4, the project site can be identified from the Foster City Boulevard overpass (over Foster City Lagoon). From this vantage point, the project site is bounded by the NPJC on the left (west) and Foster City Boulevard on the right (east). The site's only discernible features from this perspective are the utility towers. Looking across the site, an arched roof within the Civic Center Campus is slightly visible, as is the four-story office building at the northwest corner of Foster City Boulevard and East Hillsdale Boulevard. As Figure V.J-4 illustrates, the Parkside Towers, Visa Towers, and Metro Tower are all visible from this vantage point. It is important to note that views from this perspective are limited to persons traveling north along Foster City Boulevard. Similarly, because it is an overpass, views from this perspective are expected to be brief in time, lasting only as long as the viewer is on the overpass.

b. Regulatory Context

Applicable regulatory provisions are discussed below. Included in this discussion are policies of the Foster City General Plan, standards of the Foster City

Civic Center Urban Design Guidelines, and regulations of the Foster City Zoning Code.

(1) Foster City General Plan

The Foster City General Plan contains the following goals and policies related to aesthetics and visual impacts.

- *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 and welfare of the community.
- *LUC-38 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-39 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.
- *H-B-4 Housing Design.* Assure excellence in project design consistent with existing community character (architecture, site planning amenities).

- *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-18 Access to Sunlight.* Consider the impact of new development on sunlight to existing public open spaces.
- *PC-s Landscape Setbacks.* Review during the City's plan review process for provision of landscape setbacks.
- *PC-n Architectural review.* Review all new development or improvement proposals through the 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.

(2) Foster City Civic Center Urban Design Guidelines

The Civic Center Urban Design Guidelines (Design Guidelines) were adopted in 1999 to guide development of the then 36-acre Foster City Civic Center parcel, which includes the project site. The plan area for the Design Guidelines is bounded by East Hillsdale Boulevard to the north, Foster City Boulevard to the east, the Foster's Landing residential development to the south, and Shell Boulevard to the west. The proposed project is entirely within the boundaries of the Design Guidelines plan area. The Design Guidelines provide conceptual guidance for development of the entire 36-acre area, including but not limited to, standards for open space, gateways, promenades, nodes, buffers, lighting, streetscapes and parking.

The Design Guidelines envisioned the Civic Center Campus, NPJC and the vision for the Episcopal School of the Peninsula (ESP). The ESP included educational facilities, a cultural arts center, gymnasium with indoor pool, an outdoor pool, soccer field and track, among other educational facilities. The Civic Center and NPJC parcels were ultimately developed as envisioned. However, the ESP parcel, which is the subject of the proposed project, was not. Nonetheless, the general vision and thematic elements of the guidelines are still applicable to the remaining undeveloped parcel, even if the proposed development program differs from that originally envisioned. A discussion of the three thematic elements of the Design Guidelines most relevant to this visual assessment include edges, gateways and promenades, as described below.

<u>Edges</u>

Edges refer to the aesthetics of the streets bounding the Civic Center parcel. The Design Guidelines call for streetscapes that reflect a 'civic' presence with

generously landscaped setbacks. The purpose of these edges is to provide visual continuity to the site's boundaries, provide consistency with the character of adjacent uses, and to provide screening and visual barriers to residential uses, where appropriate.

Gateways

The Design Guidelines call for four gateways, or formal points of entry into the site, each providing a shared access to two groupings of land uses. For example, the south gateway was envisioned as providing access to the NPJC and educational facilities, with the north gateway providing access to the educational facilities and government center. Consistent with its vision for visual continuity among edges, gateways were envisioned as being thematically related in design, reflecting a common civic identity.

Promenades

Promenades refer to linkages providing pedestrian, and in some cases vehicular, circulation throughout the campus. As emphasized in the Design Guidelines, promenades were included in the design to provide visual linkages to important features within the site, such as plazas, as well as views from the site to external features, such as the Leo J. Ryan Memorial Park on the waterfront.

(3) Foster City Municipal Code

The Foster City Municipal Code contains the following regulations related to aesthetics and visual impacts.

Chapter 17.58.010.B. Architectural Control and Supervision

Projects involving construction of new buildings are subject to architectural review by the City Planning Commission.[1] Chapter 17.58 of the Foster City Municipal Code 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,

[1] Foster City Municipal Code, Title 17 Zoning, Chapter 17.58.

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 17.68.080. General Performance Standards: 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)

c. Policy Consistency

The proposed project is generally consistent with Foster City's policies, guidelines and standards, as they pertain to visual resources. The proposed development does have the potential to increase glare from the sun's reflec-

tion off exterior building materials, and may contribute to nighttime lighting in the immediate vicinity of the project through grounds and building illumination during the evening hours. However, mitigation measures are provided below to ensure this potential is minimized to a less-than-significant level. A more detailed discussion of the project's relationship to the City's policies is provided in Chapter IV, Public Policy, of this report.

The proposed project would result in a mixed-use development on an infill site that is currently characterized by graveled and paved parking areas, as well as a temporary tent structure, intermittent patches of opportunistic weedy vegetation, and bare earth; in essence, a mostly vacant 15-acre lot. Development of the proposed project would bring visual continuity to the diverse land uses and structures surrounding the site, and result in a more visually inviting pedestrian-friendly environment than currently exists on the site.

The proposed project would undergo design review prior to final plan approval and building permit issuance. During this process, the project design could be subject to refinement to ensure compatibility with the architectural and urban design guidelines presented above. Based on preliminary plans, it is anticipated that there would be no major inconsistencies or conflicts between the proposed project's design and the requirements of the City.

2. Impacts and Mitigation Measures

Analyzed in this section are impacts to aesthetic resources that could result from development of the proposed project. The first part of this subsection outlines the criteria of significance, which establish the threshold for determining whether an impact is significant. The second part of this subsection concerns impacts associated with the proposed development. Mitigation measures are recommended, as appropriate.

a. Criteria of Significance

Implementation of the proposed project would have a significant impact on aesthetic resources or related shade and shadow if it would:

- Have a substantial adverse effect on a scenic vista or scenic resources; or
- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway; or
- Substantially degrade the existing visual character or quality of the site and its surroundings; or

- Cast a shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the areas.

The shadow impact threshold (bullet #4) reflects the intent of General Plan policies that seek to preserve access to sunlight on public open spaces, as described in the Regulatory Context section above. This criterion was developed based on similar thresholds used in comparable jurisdictions. The other four thresholds of significance are drawn from Appendix G of the CEQA Guidelines.

b. Less-than-Significant Aesthetic Resource Impacts

Discussed below are the less-than-significant visual resource and shadow impacts that could result from development of the proposed project.

As described in the Regulatory Context section above, the General Plan identifies several policies related to preserving views and sunlight access to public open space and the waterfront. Architectural standards further support the preservation of lagoons and waterways. Potential impacts to these views are analyzed below. Potential impacts on other views, such as views of the San Bruno hills, are also described for informational purposes.

(1) Scenic Vistas

Foster City is generally flat with limited scenic vistas from public vantage points. The City's topography, combined with the development patterns surrounding the project site, limit visual access to the site from all but a few public viewpoints. To assist with analysis of potential visual impact of the proposed development, eight public viewpoint locations were chosen in consultation with City Staff. Visual simulations of the proposed project were prepared for each of these viewpoints. Figure V.J-5 shows the viewpoint locations. Figures V.J-6a through V.J-13b show existing views towards the project site and simulations of the proposed project from each of the same eight perspectives. These perspectives were selected because they: 1) include key public view corridors in the vicinity of the project site; 2) provide the most representative views of the project site; and 3) show the proposed project in the context of existing development in the immediate vicinity of the project site. These simulations were prepared using computer software, and are based solely upon site layout and building height; the design, materials, colors, and landscaping schematics for the project are subject to the City's design review process. Each viewpoint depicted in these images is described and evaluated below. Figures of the existing condition and the simulations of

each viewpoint are presented consecutively starting at the end of part (1) Scenic Vistas.

- **Viewpoint 1.** Figure V.J-6a depicts the project site as viewed from the intersection of Foster City Boulevard and Highway 92. The existing view from this location includes office complexes of 4 and 8 stories, a small portion of the Civic Center complex, and landscaped trees and shrubs along Foster City Boulevard and Metro Center Boulevard. The visual simulation of the proposed project, included in Figure V.J-6b, shows the assisted living and affordable buildings, at 95 and 85 feet tall, respectively, (not including roof screening and equipment on top of these buildings and set back from building edges), that are proposed as part of this project. The proposed assisted living building would front on the north side of Parkview Plaza and Civic Center Drive. The proposed affordable building is located in the northwest portion of the project site. No scenic views are visible from this perspective.

- **Viewpoint 2.** Figure V.J-7a represents a more close-up perspective of the project site, from the intersection of Foster City Boulevard and East Hillsdale Boulevard. The existing view from this vantage point includes the Civic Center Campus and City Hall Plaza in the foreground. Towards the south (left) the NPJC Campus and parking lots are also visible.

  Between the two complexes, just above the horizon, a silhouette of the San Mateo Hills is barely visible. Existing trees on the corner of Foster City Boulevard and East Hillsdale Boulevard, along with trees in the Civic Center Parking lot, obstruct almost all of the San Mateo Hills from this view point. The visual simulation, included in Figure V.J-7b, shows the GB-2 building, partially obstructed by the Civic Center Campus, as well as the assisted living, retail, and affordable buildings, of the proposed project. As the existing photo shows, views of the San Mateo Hills from this view point are already limited and the simulation demonstrates that the proposed project would not substantially further obstruct the views of the San Mateo Hills.

- **Viewpoint 3.** Figure V.J-8a depicts the northward view of the project site, from Foster City Boulevard adjacent to the northeast corner of the NPJC parking lot. Visible are the two 8-story Parkside Towers and the 22-story Metro Tower. The existing view from this perspective also includes the landscaped median along Foster City Boulevard. The visual simulation, Figure V.J-8b, depicts the proposed project's affordable, retail, and assisted living buildings fronting Foster City Boulevard. No scenic vistas or resources are visible from this perspective and as the simulation illustrates, the proposed development is comparable to the scale of the other structures currently visible from this viewpoint.

- **Viewpoint 4.** Figure V.J-9a depicts the northward view of the project site, from the Foster City Boulevard Bridge over Foster City Lagoon. The existing view from this perspective includes Boat Park and Foster's Landing residential development in the foreground (left). The project site can be identified by the arched roof of a building within the NPJC. Also discernible is the Metro Center Campus and four-story office structure opposite East Hillsdale Boulevard. Visible on the horizon are the two 8-story Parkside Towers and the 22-story Metro Tower. The visual simulation, illustrated in Figure V.J-9b, depicts the proposed project's assisted living and affordable buildings, as well as the proposed GB-1, GA-4, and GA-3 for sale housing buildings fronting Balclutha Drive. No scenic vistas or resources are visible from this perspective, and as the simulation illustrates, the proposed development is comparable to the scale of other structures currently visible.
- **Viewpoint 5.** Figure V.J-10a shows the project site as viewed from across Shell Boulevard, looking northwest. The existing view from this perspective includes the landscaped sidewalks and median of Shell Boulevard, a small portion of the NPJC and parking area, as well as the easternmost Parkside Tower. The visual simulation, shown in Figure V.J-10b, depicts the proposed GA-1 and GA-2 for sale housing buildings along Shell Boulevard with the assisted living building barely visible from behind these structures. No scenic views are visible from this perspective.
- **Viewpoint 6.** Figure V.J-11a depicts the project site from The Vibe (Teen Center) Parking Lot, looking north across Shell Boulevard. Existing views of the project site from this perspective are limited by the trees along Shell Boulevard. The project site can be identified by the presence of the NPJC, which is partially visible to the east of the project site (right side in Figure V.J-11a). The proposed CA-1 and GA-1 for sale housing buildings are clearly visible in the visual simulation, with the assisted living building slightly visible behind. No scenic vistas or resources are visible from this location.
- **Viewpoint 7.** Figure V.J-12a represents the project site, as viewed from Leo J. Ryan Memorial Park, looking northeast. Existing views of the project site show the area bounded by the Foster City Public Library to the north (left) and the NPJC to the south (right). Views of the project site are partially obstructed by trees along Shell Boulevard. Residential structures along Foster City Boulevard are visible along the opposite edge of the project site. The project site is clearly discernible in the visual simulation, shown in Figure V.J-12b. In the visual simulation, the CA-4, CA-3, and CA-1 for sale housing buildings are visible, with the assisted living building barely visible from behind. The NPJC and residential structures lining Fos-

ter City Boulevard are no longer visible. However, no scenic resources or vistas are visible from this perspective.

- **Viewpoint 8.** Figure V.J-13a represents the view towards the project site, from the pedestrian promenade along East Hillside Boulevard. Visible in the existing view are the trees forming the northwestern boundary of Leo J. Ryan Memorial Park, Central Lake, the gazebo at the end of the pier, the amphitheater, and the Foster City Recreation Center. As shown in the simulation, Figure V.J-13b, these features will still be visible with the proposed project. As the site is located behind these features, the tops of the for sale housing buildings located along Shell Boulevard will be visible but will not block any views of the lake or park visible from the pedestrian promenade.

The generally uniform topography of Foster City combined with relatively dense development throughout, limits scenic vistas to all but a few public viewpoints. The discussion and simulations presented are intended to demonstrate the effect of the proposed development from a representative range of viewpoints throughout the City. Similarly, these viewpoints capture the existing character and scale of the City and illustrate the effect of the proposed development. As the discussion reveals, scenic vistas are not visible from most vantage points in the vicinity of the project site. As the simulations reveal, where the existing buildings are visible, the project's scale is compatible with the scale of existing structures. For these reasons, development of the proposed project would have a less-than-significant impact on scenic vistas.

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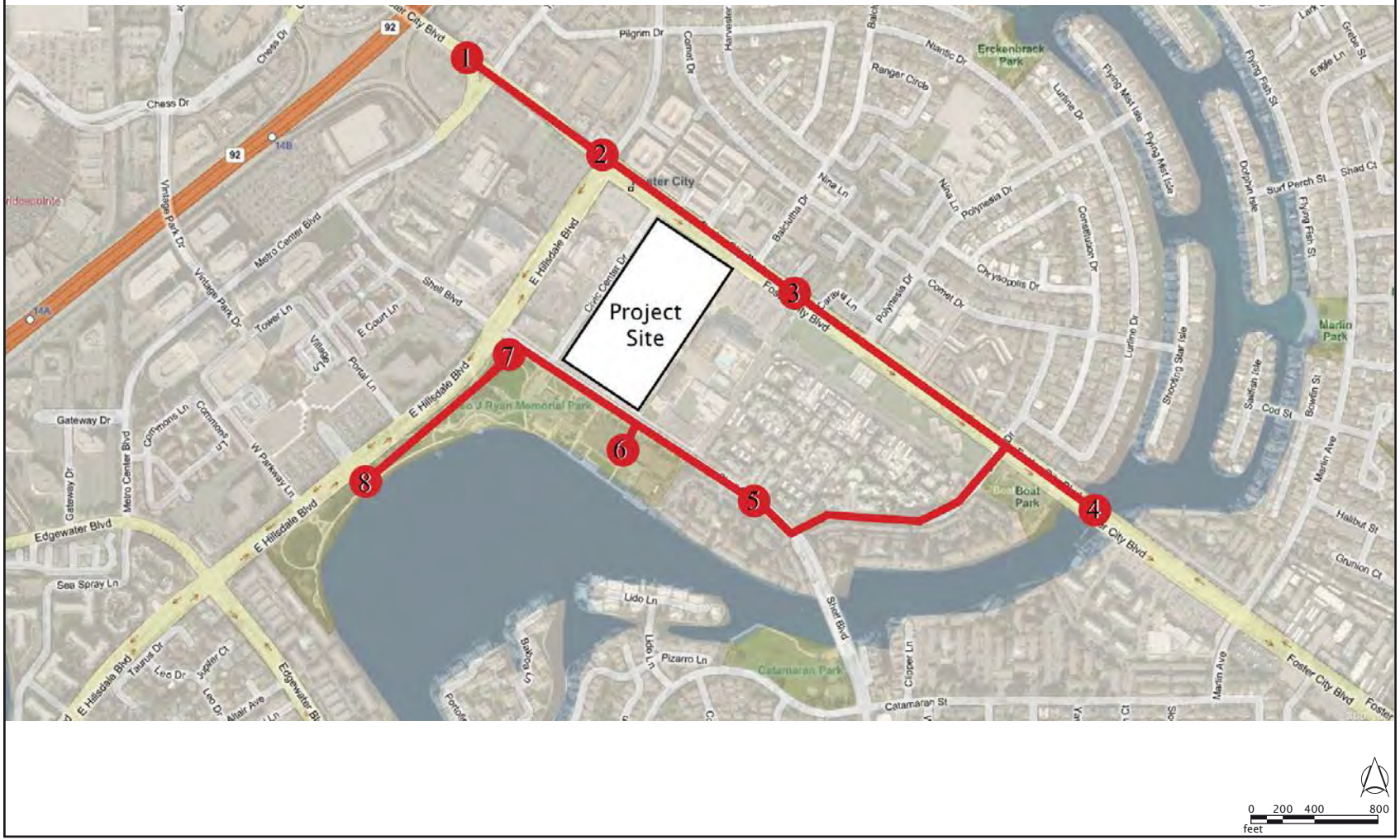


Source: RRM Design Group, 2013

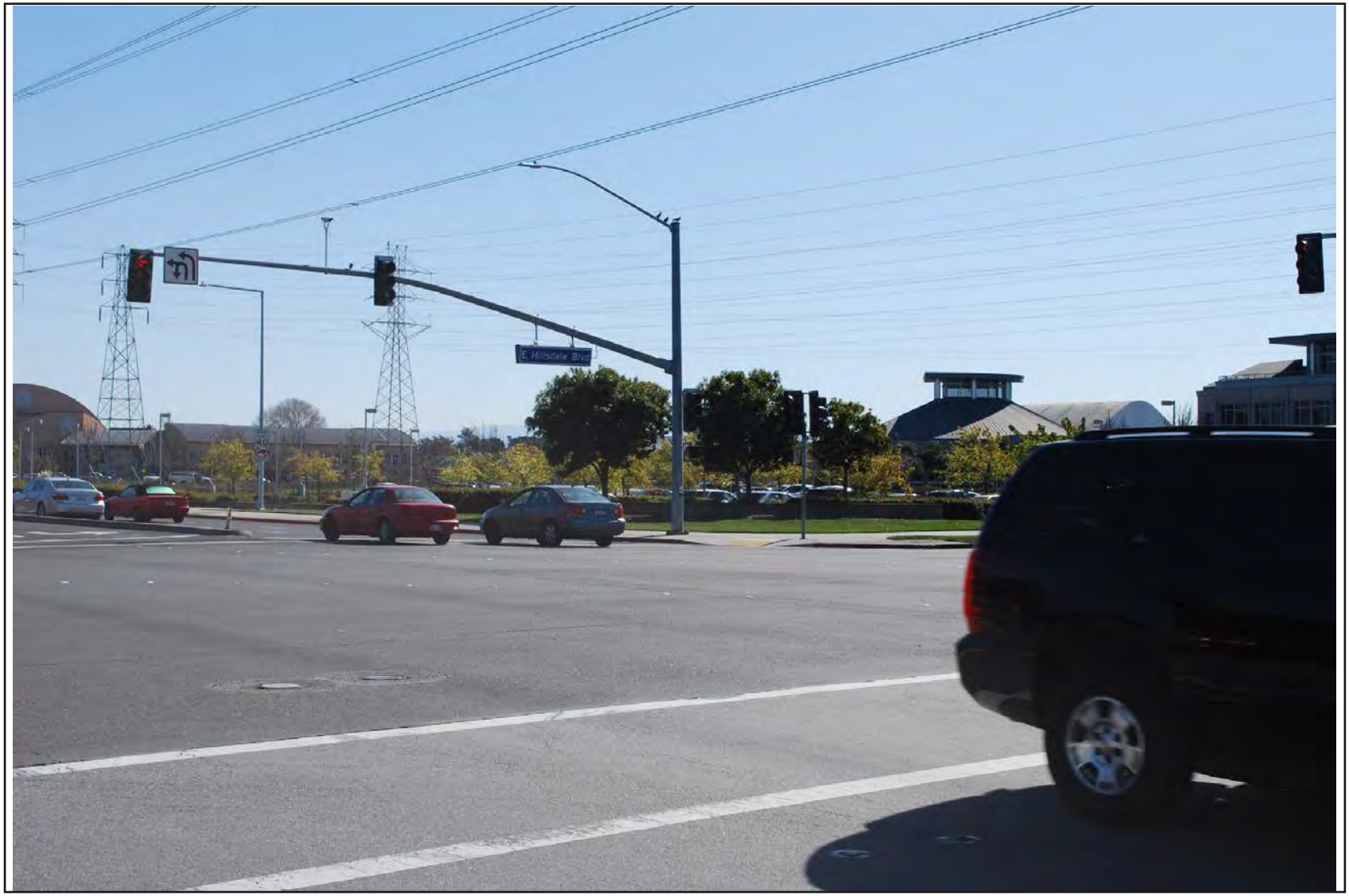
Figure V.J-5
The 15 Acres
Visual Simulation Viewpoints Orientation Map

Source: RRM Design Group, 2013

Figure V.J-6a
The 15 Acres
Existing View from Viewpoint 1

Source: RRM Design Group, 2013

Figure V.J-6b
The 15 Acres
Visual Simulation from Viewpoint 1



Source: RRM Design Group, 2013

Figure V.J-7a
The 15 Acres
Existing View from Viewpoint 2

Source: RRM Design Group, 2013

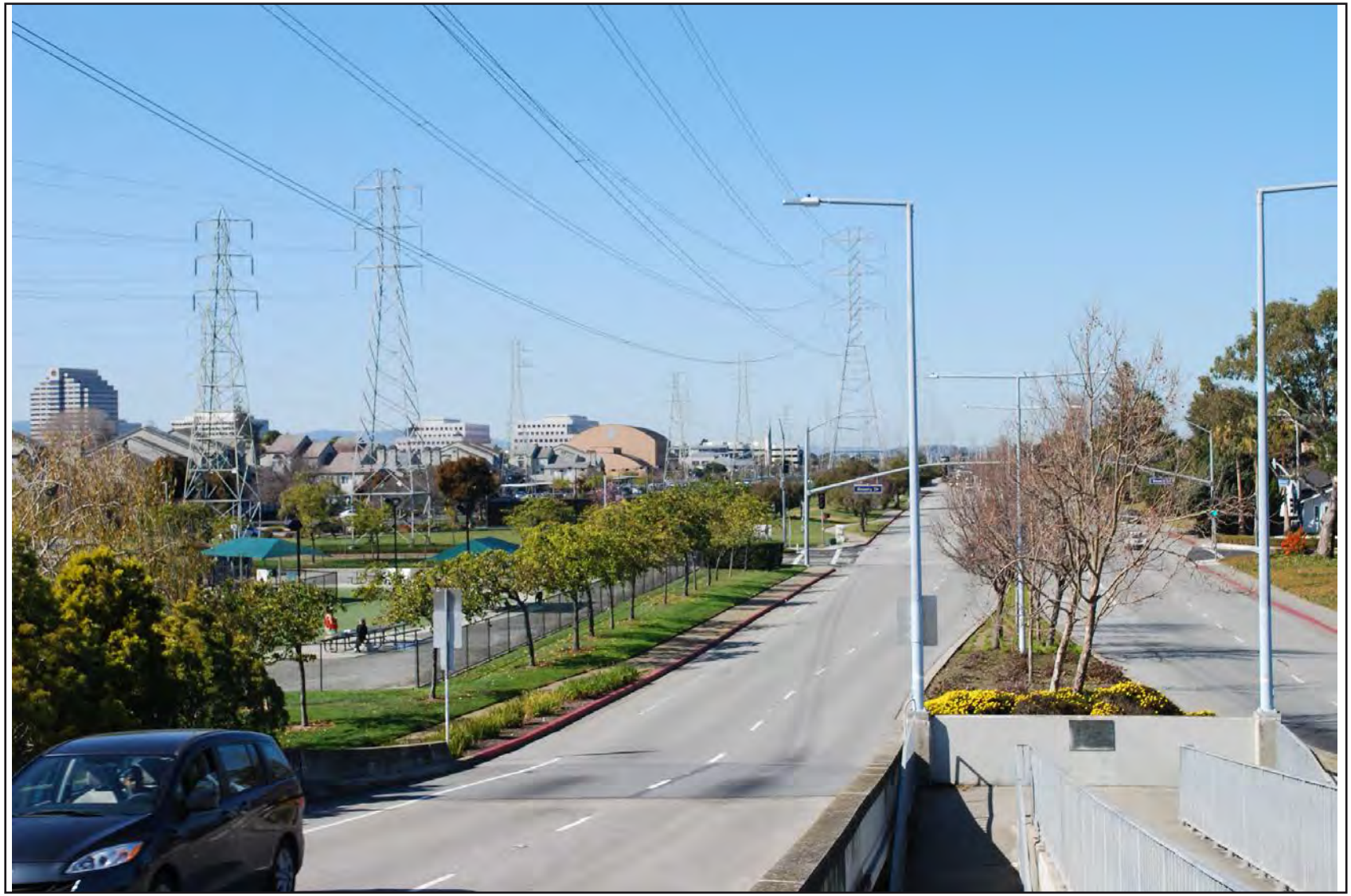
Figure V.J-7b
The 15 Acres
Visual Simulation from Viewpoint 2

Source: RRM Design Group, 2013

Figure V.J-8a
The 15 Acres
Existing View from Viewpoint 3

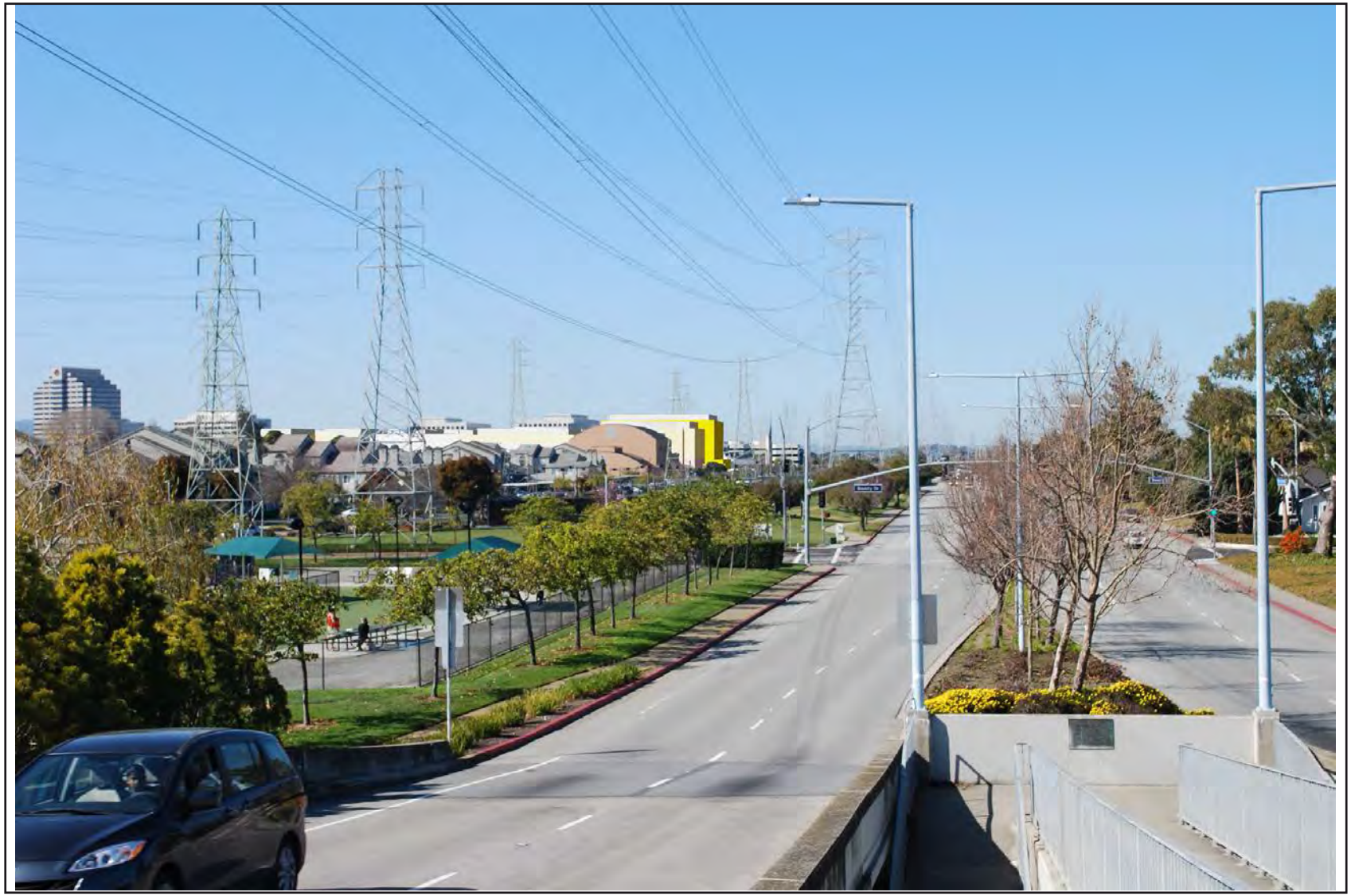
Source: RRM Design Group, 2013

Figure V.J-8b
The 15 Acres
Visual Simulation from Viewpoint 3



Source: RRM Design Group, 2013

Figure V.J-9a
The 15 Acres
Existing View from Viewpoint 4



Source: RRM Design Group, 2013

Figure V.J-9b
The 15 Acres
Visual Simulation from Viewpoint 4

Source: RRM Design Group, 2013

Figure V.J-10a
The 15 Acres
Existing View from Viewpoint 5

Source: RRM Design Group, 2013

Figure V.J-10b
The 15 Acres
Visual Simulation from Viewpoint 5

Source: RRM Design Group, 2013

Figure V.J-11a
The 15 Acres
Existing View from Viewpoint 6

Source: RRM Design Group, 2013

Figure V.J-11b
The 15 Acres
Visual Simulation from Viewpoint 6

Source: RRM Design Group, 2013

Figure V.J-12a
The 15 Acres
Existing View from Viewpoint 7

Source: RRM Design Group, 2013

Figure V.J-12b
The 15 Acres
Visual Simulation from Viewpoint 7

Source: RRM Design Group, 2013

Figure V.J-13a
The 15 Acres
Existing View from Viewpoint 8

Source: RRM Design Group, 2013

Figure V.J-13b
The 15 Acres
Visual Simulation from Viewpoint 8

(2) Scenic Resources within a State Scenic Highway.

State Route 92 (SR 92) is the only State highway in the vicinity of the project site. Sections of SR 92 are eligible for designation within the California Scenic Highway system. Eligibility for scenic highway designation does not, however, apply to portions of SR 92 within the vicinity of the project site.[2] The proposed project would not result in the damage of trees, rock outcroppings, or historic buildings, nor would it substantially damage resources within a State scenic highway. As a result, construction of the proposed project would have no impact on scenic resources viewed from a State scenic highway.

(3) Visual Character

Development of the proposed project would change the visual character of the project site and its surroundings. However, these changes would not be incompatible with the character of the surrounding area. Most of the 15-acre parcel is presently vacant, characterized only by intermittent patches of gravel, vegetation, bare earth, and a temporary tent structure.

Under the proposed development plan, the existing parking lot and temporary tent structure would be replaced by 18 buildings ranging in height from 25 to 95 feet (not including roof screening and equipment), surrounding a public plaza, with ground-level retail included in four buildings. The scale of these structures would be compatible with those of nearby properties, such as the Parkside Towers and Visa buildings, but notably smaller than the Metro Tower. These surrounding buildings have a range of heights, from two- and three-story apartments to the 50-foot community center at NPJC.

The proposed project site design is compatible with adjacent land uses. The proposed buildings on the east side of the project along the parking lot, which runs parallel to Foster City Boulevard, are the tallest of the proposed project. These include, from north to south: the assisted living building, with retail on the ground floor, up to 95 feet in height; a retail/commercial building up to 80 feet in height; another retail building up to 25 feet in height; and the affordable housing component, with retail on the ground floor, up to 85 feet in height. The remaining buildings would all be up to 65 feet tall, and would provide market-rate for-sale housing for seniors. These proposed heights represent maximum building envelopes, which could include varied heights and parapets less than the maximum height of 65 feet. Buildings would additionally include up to ten feet of roof screening and equipment set

[2] California Department of Transportation, 2013. California Scenic Highway Program. Website: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys3.htm. Accessed March 6, 2013.

back from building edges. Buildings of this scale are comparable to those currently surrounding the project site.

The proposed mixed-use project would bring continuity between the existing Civic Center Campus and NPJC. The proposed project's density and the newly created linkage between the commercial and residential developments along Shell Boulevard and Foster City Boulevard would help create a livelier and more inviting pedestrian environment. Landscaping would strengthen connections to adjacent land uses and would support the aesthetic of a pedestrian-scale urban neighborhood with an accessible network of streets, paseos, gardens, and public spaces. Key design elements would include large setbacks along Shell Boulevard to screen the project residents from traffic and to create a usable space with the inclusions of benches, seating areas, and landscaping. Landscaping would also be used to create well-defined gateways of ingress and egress and pedestrian pathways throughout the site and to adjacent properties.

The proposed project would be subject to the Foster City Design Review process, which ensures that proposed projects meet all guidelines, standards and objectives related to building design and aesthetics, prior to final approval. Also evaluated in this process is a proposed design's compatibility or appropriateness for its surroundings. Design review also includes assessment of the compatibility of the development project with surrounding properties, in terms of colors, materials, architectural details, façade lengths, and roof forms. The process helps ensure that the project would not "substantially degrade the existing visual character or quality of the site or surroundings."

For these reasons, the proposed project would have a less-than-significant impact on the visual character of the project site.

(4) Shade and Shadow Impacts

Development of the proposed project would result in the addition of 18 new buildings on the project site of size and mass similar to those in the project's vicinity. A shadow analysis (see figures V.J-14 through V.J-25) was prepared to determine extent of shade and shadow-related impacts resulting from the proposed project. As Figures V.J-14 through V.J-25 illustrate, the 18 proposed buildings would create new shade and shadow effects on buildings, homes, and public spaces in the vicinity of the project area.

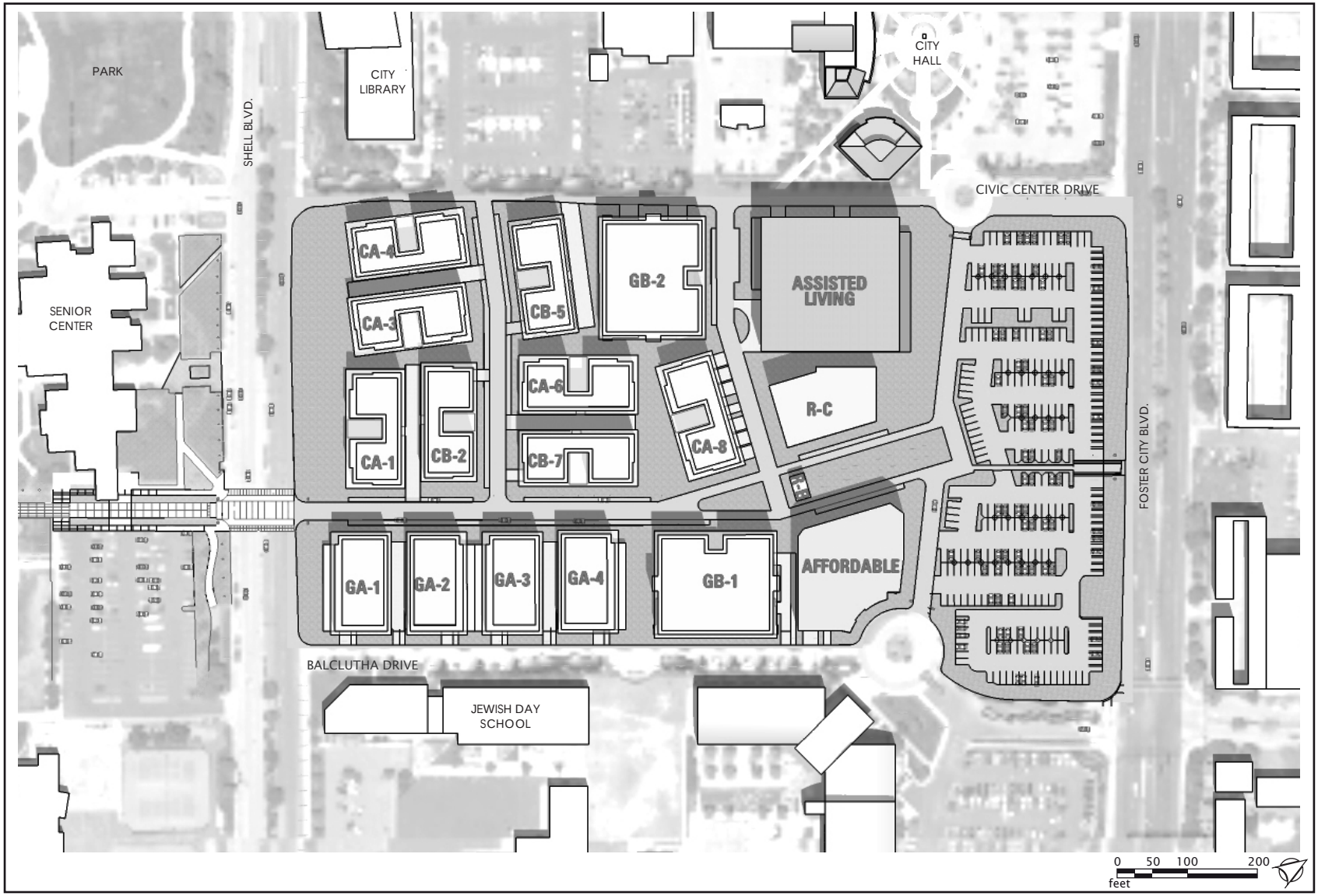
Figures V.J-14 through V.J-17 depict the shade and shadow effects of the proposed project on the summer solstice on June 21. The figures represent shadow projections at two-hour increments throughout the day from 10:00

a.m. to 4:00 p.m. The summer solstice shadows represented in these figures move clockwise throughout the day and are largely confined to the project site. At 10:00 a.m., the portion of Civic Center Drive adjacent to the assisted living building would be in shadow, but would no longer be so by 12:00 p.m.

Shade and shadow effects during the days of March 21 and September 21 are represented in Figures V.J-18 through V.J-21. These spring and fall equinox shadows are longer than those of the summer solstice; yet remain largely confined to the project site. Noteworthy are assisted living building shadows that extend north across Civic Center Drive and into the Civic Center Campus parking lot before 2:00 p.m. At 10:00 a.m., shadows extend onto the public library landscaped area and the portion of City Hall plaza fronting Civic Center Drive. Also noteworthy is the afternoon shadow produced by the affordable housing building and the for-sale housing buildings on the eastern edge of the project site, which would be cast onto most of Balclutha Drive towards the NPJC.

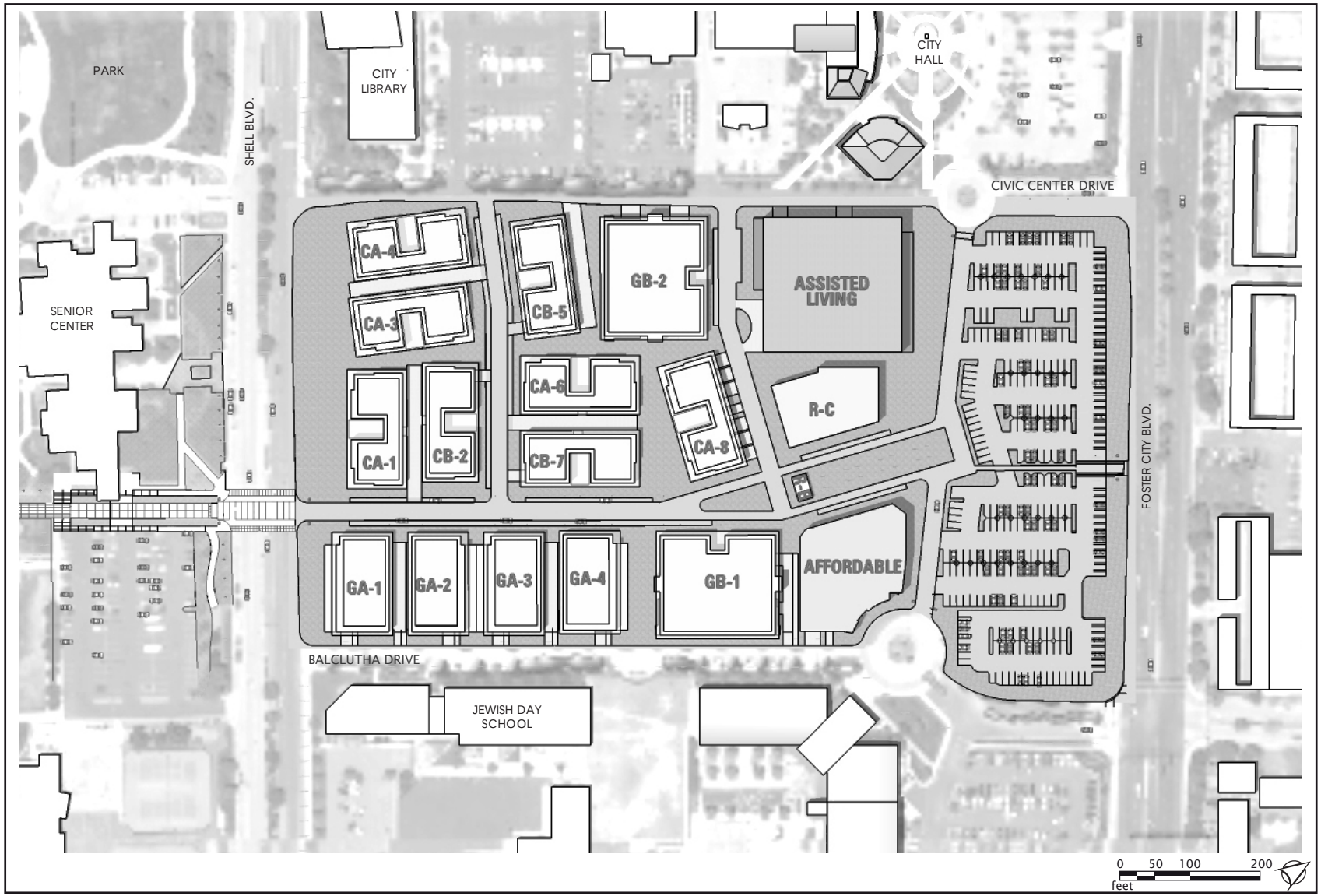
Shadows cast during the winter solstice, December 21, are included in Figures V.J-22 through V.J-25. The sun is lowest on the horizon during this day, causing the most pronounced shadows of the year. Noteworthy on this day are the morning shadows cast by the assisted living building and other buildings on the western edge of the project site, across Civic Center Drive, shading portions of the Civic Center Campus structures, landscaped areas, plaza, and parking lot. Also noteworthy are the shadows cast by the assisted living and affordable housing buildings in the afternoon hours. The majority of these shadows would be cast on the parking lot within the project site; however some shadow would extend across Foster City Boulevard and briefly shade portions of the Admiralty Condominium Complex and adjacent properties.

General Plan Policy PC-18 specifies that new development consider its impact on sunlight onto existing public open space. Leo J. Ryan Memorial Park, located one block west of the project site, is the closest public open space. The analysis found no shade impacts on this park. Across Civic Center Drive, the public library site includes a lawn, landscaping, and mechanical/refuse area on the south side of the building facing the proposed project, but does not include active or usable open space. The City Hall site provides a usable public plaza with seating. Both of these spaces would be shaded by the proposed project at various times of year, as shown on the 10:00 a.m. figures during the fall, winter, and spring equinoxes and the 12:00 p.m. figure during the winter equinox scenario.



Source: RRM Design Group, 2013

Figure V.J-14
The 15 Acres
Shadow Patterns: June 21, 10:00 a.m.

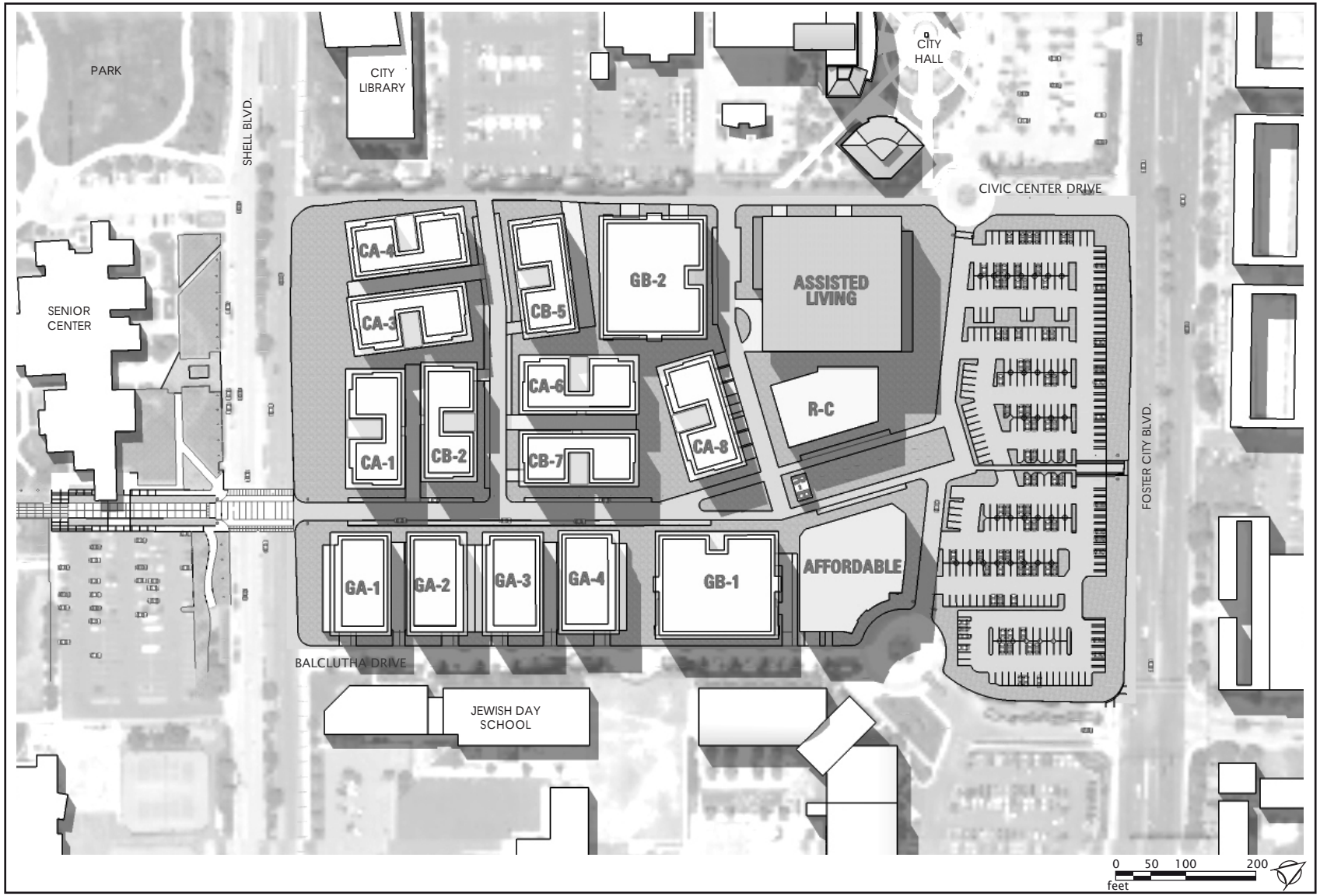


Source: RRM Design Group, 2013

Figure V.J-15
The 15 Acres
Shadow Patterns: June 21, 12:00 p.m.

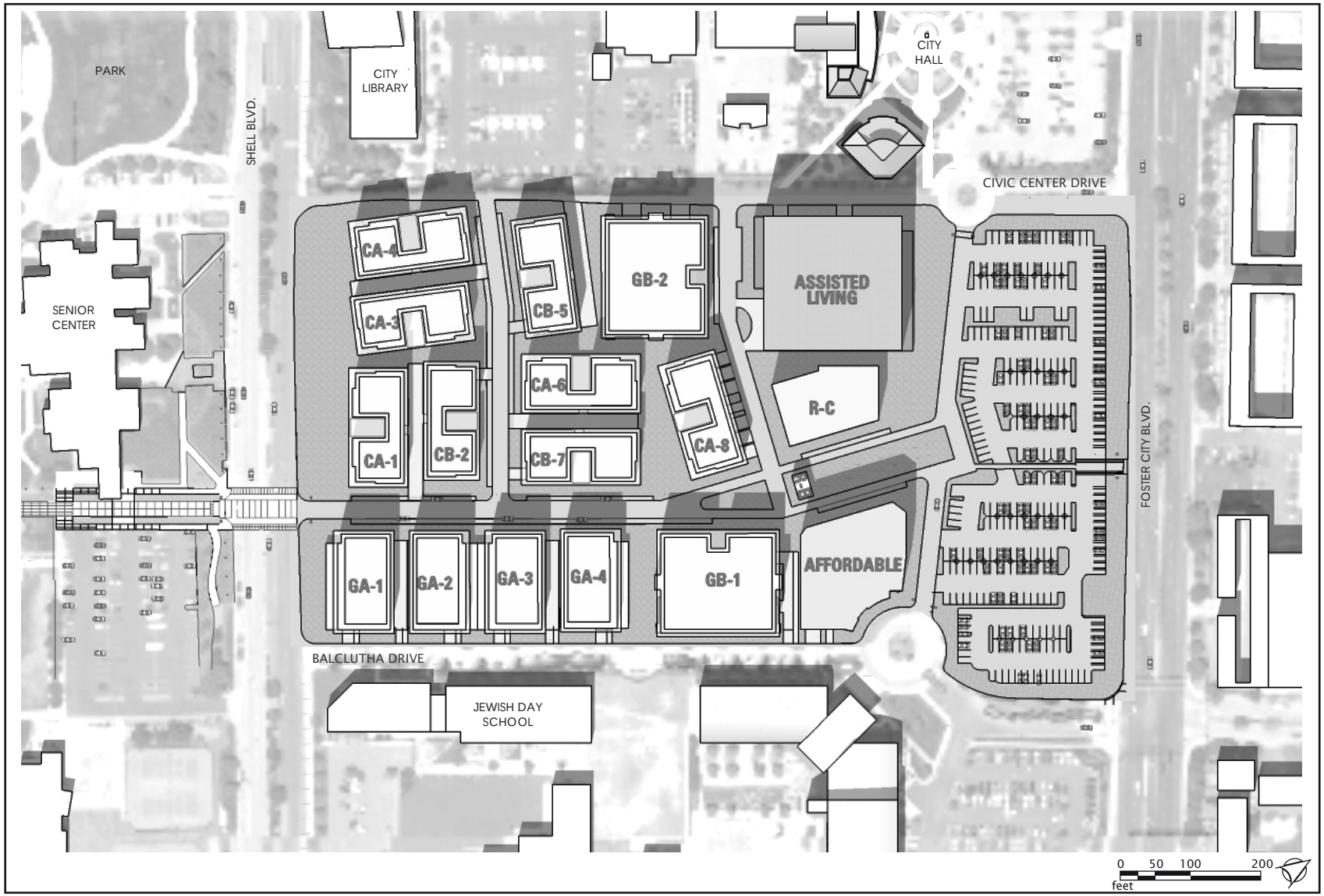
Source: RRM Design Group, 2013

Figure V.J-16
The 15 Acres
Shadow Patterns: June 21, 2:00 p.m.



Source: RRM Design Group, 2013

Figure V.J-17
The 15 Acres
Shadow Patterns: June 21, 4:00 p.m.

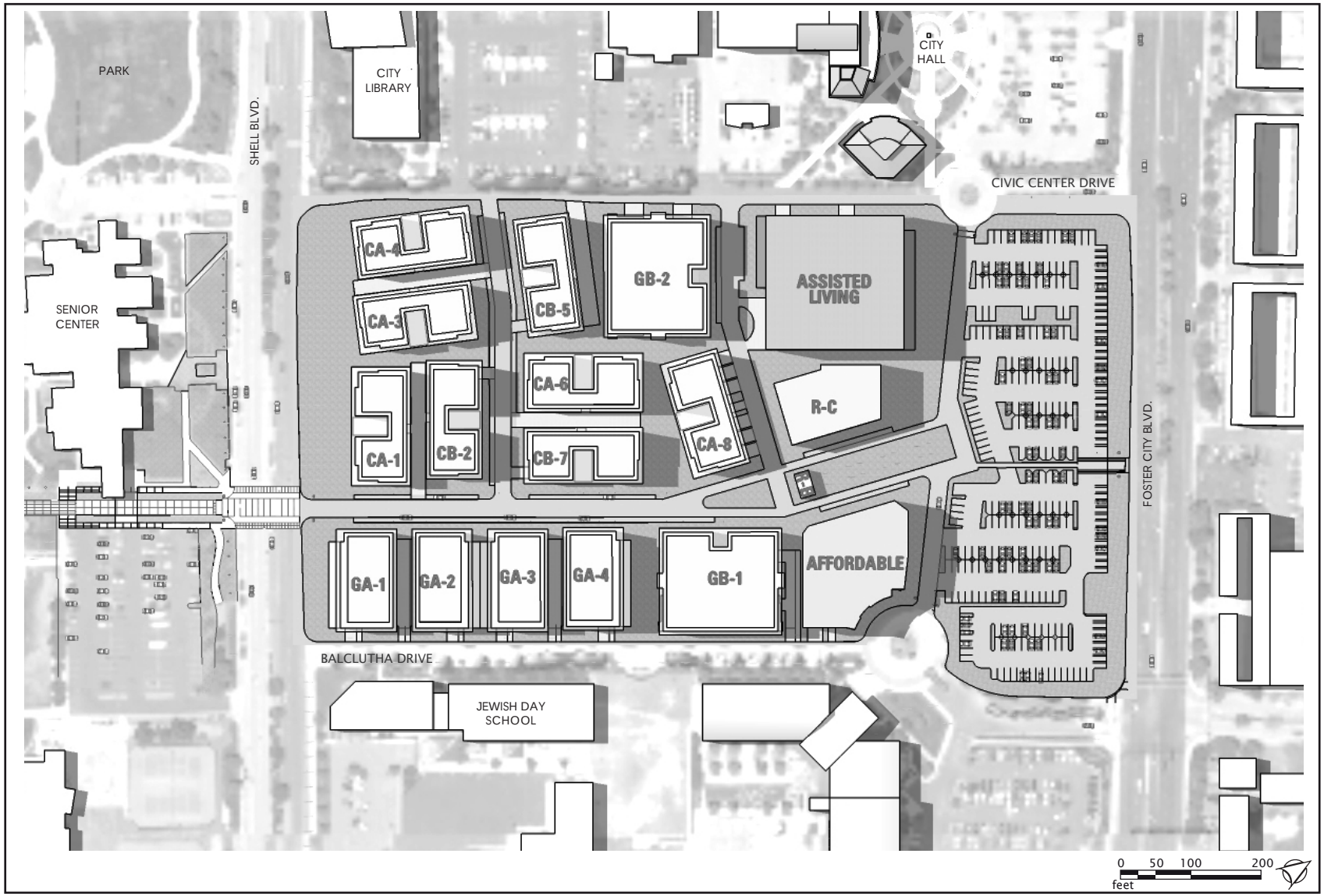


Source: RRM Design Group, 2013

Figure V.J-18
The 15 Acres
Shadow Patterns: March 21 and September 21, 10:00 a.m.

Source: RRM Design Group, 2013

Figure V.J-19
The 15 Acres
Shadow Patterns: March 21 and September 21, 12:00 p.m.

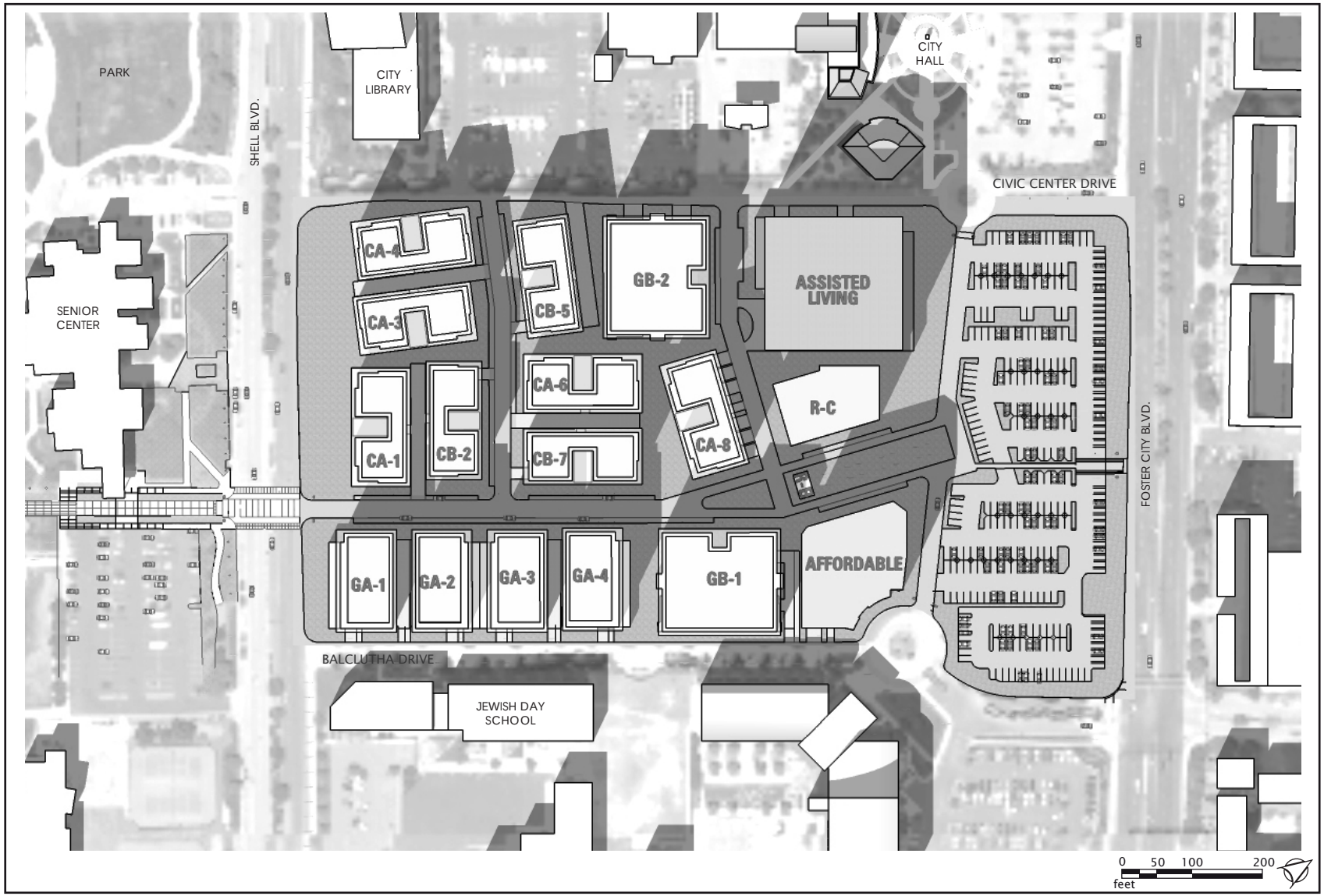


Source: RRM Design Group, 2013

Figure V.J-20
The 15 Acres
Shadow Patterns: March 21 and September 21, 2:00 p.m.

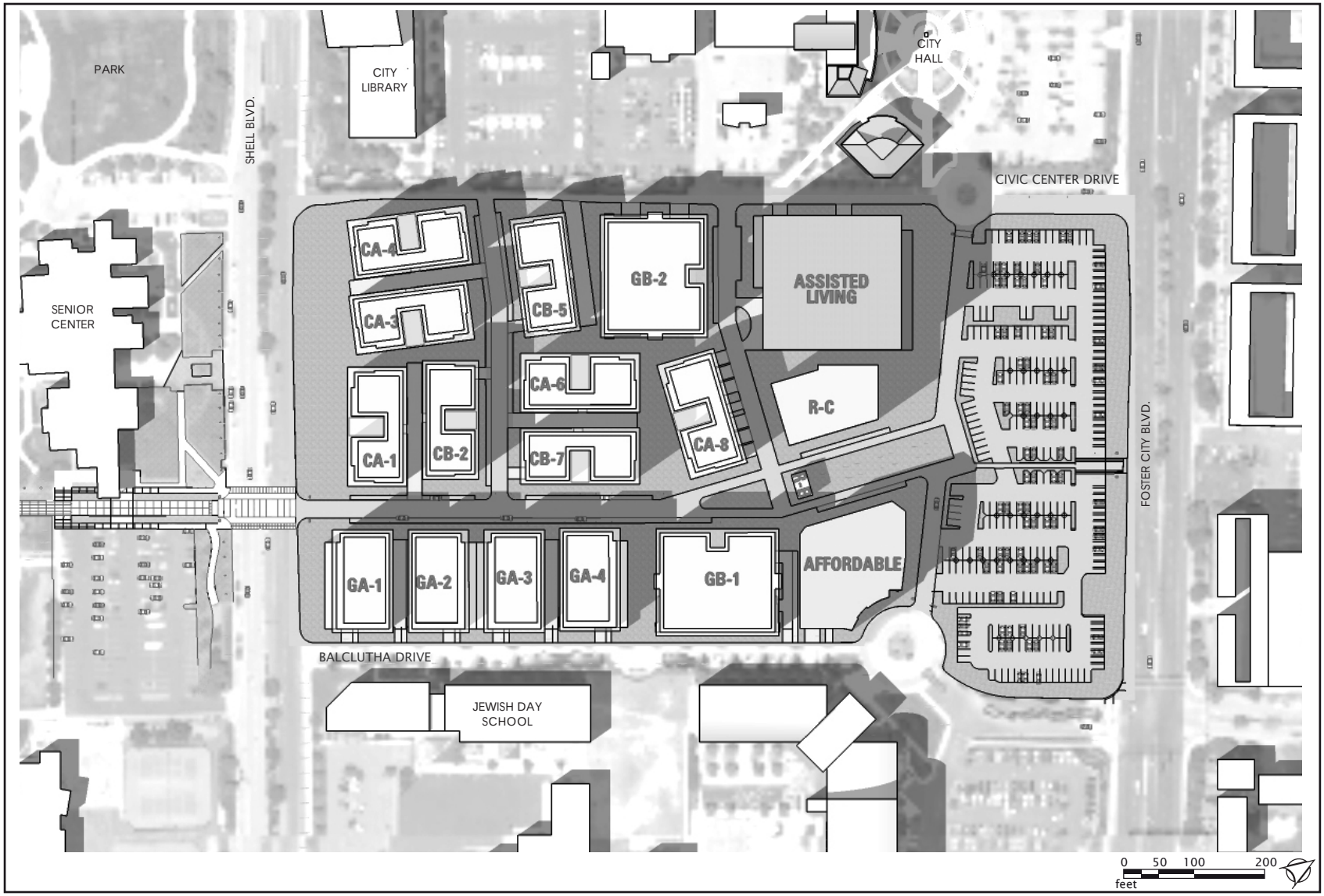
Source: RRM Design Group, 2013

Figure V.J-21
The 15 Acres
Shadow Patterns: March 21 and September 21, 4:00 p.m.



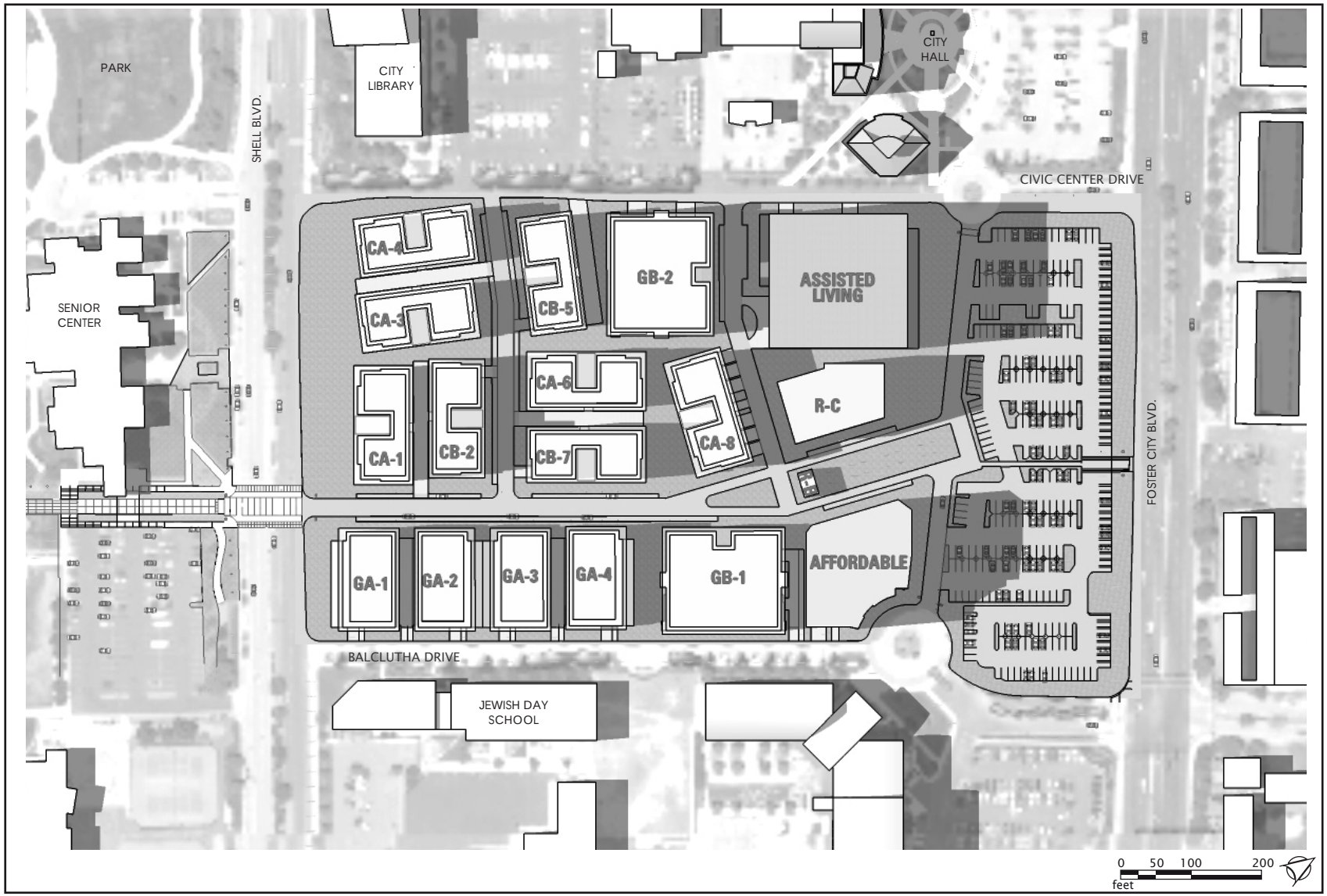
Source: RRM Design Group, 2013

Figure V.J-22
The 15 Acres
Shadow Patterns: December 21, 10:00 a.m.



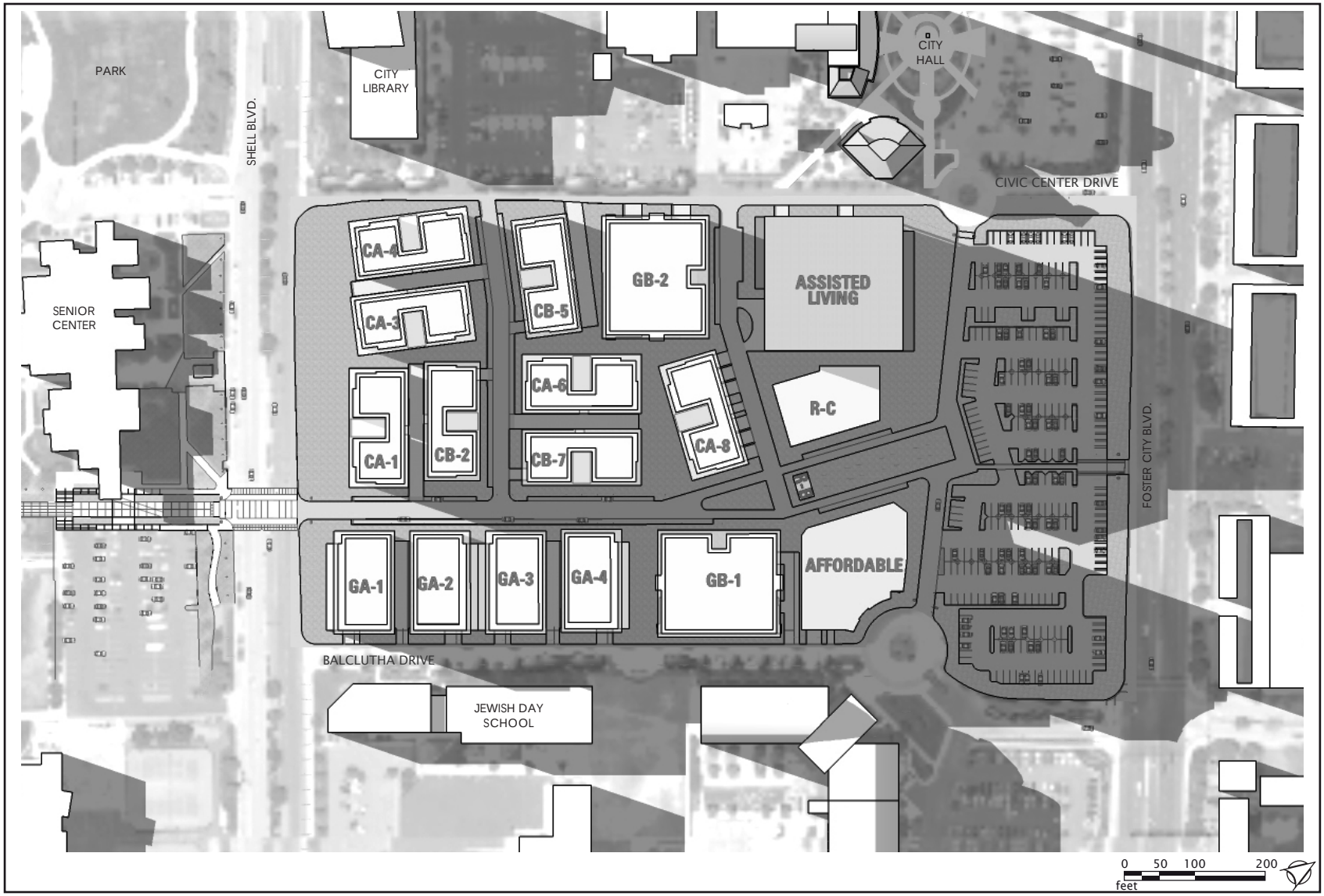
Source: RRM Design Group, 2013

Figure V.J-23
The 15 Acres
Shadow Patterns: December 21, 12:00 p.m.



Source: RRM Design Group, 2013

Figure V.J-24
The 15 Acres
Shadow Patterns: December 21, 2:00 p.m.



Source: RRM Design Group, 2013

Figure V.J-25
The 15 Acres
Shadow Patterns: December 21, 4:00 p.m.

The threshold of significance for a significant shadow impact requires that the proposed development's shadow "substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space." The open spaces adjacent to the public library and City Hall would experience morning shadows from the proposed project. However, these spaces would have access to sunlight during the majority of the day and year, and during the midday and afternoon hours when community members are more likely to use these facilities. For these reasons, shadows created by development of the proposed project would be considered less than significant.

c. Significant Visual Quality Impacts

Discussed below are the potentially significant visual resource impacts that could result from development of the proposed project.

Impact AES-1: The proposed project would create additional sources of glare in the vicinity of the project site. (S)

The project site currently contains no light-emitting or reflective structures. The proposed project consists of 18 buildings, including structures of up to 95 feet in height. As discussed above, these buildings will be visible from various points throughout the City. During daylight hours, the public could experience some degree of glare due to sunlight reflecting off the façades of these structures. In the evening hours, the lights used to illuminate the campus and structures would add new sources of light within the project vicinity and to the nighttime skyline.

> Mitigation Measure AES-1: In order to reduce the potential light- and glare-related impacts to a less-than-significant level, the following mitigation measures shall be incorporated into the project:
>
> > AES-1a: During the Design Review process, the City shall review the reflective properties of exterior building materials selected for the proposed structures. Prior to Final Development Plan approval, City staff shall ensure that the use of exterior reflective materials is minimized and that any proposed reflective materials minimize day and nighttime glare.
> >
> > AES-1b: A lighting plan shall be prepared for each new building on the project site and submitted to the City for review as part of the Final Development Plan. 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. Prior to issuance of a build-

ing permit, the City shall ensure that all development plans for the proposed project conform to the performance standards provided under Section 17.68.080 of the Zoning Code.

Implementation of these mitigation measures would reduce this impact to a less-than-significant level. (LTS)

K. WIND

This section evaluates the significance of wind impacts resulting from the proposed project. Wind impacts were qualitatively evaluated based on a review of the massing of the proposed project and building wind aerodynamics, as well as information from wind tunnel studies previously conducted for the earlier Mirabella at San Francisco Bay and Parkview Plaza project once proposed for the project site. Mitigation is recommended to reduce significant wind impacts to less-than-significant levels.

1. Setting

An overview of the site's existing physical conditions and local regulations relevant to wind is provided below.

a. Existing Conditions

The fundamentals of building wind aerodynamics and the existing wind environment are described below.

(1) Fundamental Building Wind Aerodynamics

As a general rule, buildings create severe distortions of the wind field[1] as buildings act as obstacles to wind flow. The deceleration of wind on the upwind side of a structure creates an area of increased atmospheric pressure, while an area of decreased atmospheric pressure develops on the downwind side. At ground level "corner streams," or accelerated jets of wind that extend along the sides of a building, are created. The crowding of streamlines over the top of the structure results in accelerated windspeed over the structure. On the downwind side of a building, there is a turbulent wake zone where recirculating counter-flows occur.[2]

The strength of the "corner stream" ground-level wind acceleration a building creates is controlled by three factors: exposure, massing, and orientation. Exposure is a measure of the extent that the building extends above surrounding structures into the wind stream. A building that is surrounded by taller structures or terrain is not likely to cause adverse wind accelerations at ground level, while a small building can cause a wind impact if it is freestanding and exposed.

[1] A wind field is a set of vectors that describe wind speed and direction conditions over a particular modeling domain at a particular hour.

[2] In meteorology wind direction indicates the direction from which air is approaching. A west wind moves from west towards the east. The upwind side of a building is the side facing into the wind, the downwind side faces away from the wind.

Massing is important in determining wind impact because it controls how much wind is intercepted by the structure and whether building-generated wind accelerations occur above-ground or at ground level. In general, slab-shaped monolithic buildings have the greatest potential for wind problems. Buildings that have an unusual shape or utilize setbacks have a lesser effect. A general rule is that the more complex the building is geometrically, the less likely it is that there will be a wind impact at ground level.

Orientation determines how much wind is intercepted by the structure, a factor that directly determines wind acceleration. In general, buildings that are oriented with their wide axis across the prevailing wind direction will have a greater wind impact at ground-level than a building oriented with its long axis along the prevailing wind direction.

(2) Existing Wind Environment

Foster City is located near the middle of the San Francisco Peninsula that extends from northwest of San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the peninsula, with elevations exceeding 2,000 feet at the southern end and decreasing to 500 feet in South San Francisco.

Winds in this area are primarily influenced by topography. Westerly through northwesterly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula.

The day to day variation in winds at Foster City is determined not only by the large scale pressure patterns, but also by the interaction of local topography with the temperature inversion that is characteristic of the Bay Area in the summer months. A temperature inversion is a layer of the atmosphere where the normal decline in temperature with height is “inverted,” that is, temperature increases with height. Such inversions are found in the Bay Area at the top of the marine layer, i.e., the layer of cooler air brought in from off the Pacific Ocean.

During the summer months wind strength and direction in Foster City is dependent on the height of the temperature inversion. When the temperature inversion is low, the marine layer is shallow and marine winds from Pacific Ocean are blocked by intervening hills, resulting in light winds. When the inversion is higher, wind flow over the Santa Cruz Mountains and through the gaps in the mountains produces strong afternoon winds.

The closest source of long-term wind data for the project site is the San Mateo Sewage Treatment Plant, located 1.5 miles northwest of the project site. The predominant wind directions are northwest through southwest.

Winds from these directions are not only most frequent, but are the strongest on average. Northwest through southwest winds occur 62 percent of the time.

The project site has limited shelter from prevailing winds. The northern corner of the site has the least shelter as parking areas are located upwind. The southern half of the site has greater shelter due to the presence of Civic Center buildings which are generally two to three stories in height.

b. Regulatory Setting

The City does not have any specific polices or regulations that relate to wind. However, due to the City's climate and wind environment, the City does regularly consider the wind effects associated with proposed projects.

2. Impacts and Mitigation Measures

This section discusses potential impacts related to wind that could result from implementation of the project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies mitigation measures, as appropriate. The impact analysis is based on the project height and setback exhibits dated January 25, 2013.

a. Significance Criteria

CEQA does not list any specific criterion for the evaluation of wind effects of a project. Neither the State nor the City of Foster City has established criteria or standards for wind. However, as wind affects human comfort, and wind temperature and sunlight are climatic factors which influence comfort, these two factors are used in the wind analysis.

For this analysis, the project is considered to have a potentially significant wind impact if the exposure, orientation and massing of the structure can be expected to substantially increase ground-level winds in pedestrian corridors or public spaces near the project site. Since the ambient wind (undisturbed by buildings) in Foster City seldom exceeds 36 mph, a project must substantially increase winds for this threshold to be exceeded.

Outdoor comfort at the proposed project has been evaluated qualitatively considering only wind and sunlight. During periods of rain, all outdoor space is assumed uncomfortable regardless of other variables.

There are no standards or criterion for usability of outdoor space, so usability has been considered qualitatively by considering the appropriateness of

proposed outdoor uses given the pattern of winds forecast coupled with the potential for sunlight.

b. Less-Than-Significant Wind Impacts

A discussion of the less-than-significant impacts of the proposed project is provided below.

The project as currently described would consist of 18 buildings covering the southwestern two-thirds of the site. Most structures would be no more than 65 feet. The Assisted Living, Affordable Housing and Retail C buildings would be up to 95, 85, and 80 feet in height, respectively. Structures were assumed to include roof screening and equipment, which would add additional height set back from building edges.

Only structures along the upwind perimeter of the site would be exposed to prevailing winds (along Civic Center Drive and Shell Boulevard). The remainder of the site buildings would be sheltered by upwind project structures of similar height. Therefore wind impacts would only be expected to occur along the Civic Center Drive and Shell Boulevard frontage of the site.

Buildings fronting either Civic Center Drive or Shell Boulevard that are a maximum of 65 feet or less tall would have little potential to generate adverse wind impacts due to their limited height and their massing and/or orientation.

The current plans include arrangement of the buildings around interior courtyards as well as a pocket park and town square. These outdoor spaces and new pedestrian spaces along streets created by the project are generally sheltered from prevailing winds by the buildings within the project and are landscaped. These public spaces should have a high usability as open space due to the availability of sunlight and shelter from the prevailing wind.

c. Significant Wind Impacts

A discussion of significant impacts of the proposed project is provided below.

Impact WIND-1: The assisted living structure has an exposure and potential height and massing that could, depending on the building's design, substantially increase ground-level winds. (S)

The one structure that would appear to have potential to generate substantial wind accelerations would be the assisted living structure at the north corner of the project site. At up to 95 feet in height, this structure is the most ex-

posed structure within the site. The design as currently shown has the long axis across the prevailing wind so it would have an exposed, continuous building face oriented into the important wind directions. Depending on the final design of the structure and landscaping near the building, it could have a significant impact on winds along Civic Center Drive near the corners of the building.

The Affordable Housing and Retail C buildings would be the next tallest structures within the proposed development with heights of 85 and 80 feet, respectively. While these two buildings are taller than most within the project, they are sheltered from prevailing winds by taller assisted living structure and other buildings. The exposure, orientation and massing of these two structures would not be expected to substantially increase ground-level winds in pedestrian corridors or public spaces near the project site.

Mitigation Measure WIND-1: Final design of the assisted living structure shall employ the following design guidelines to reduce wind impacts to a less-than-significant level:

- The Civic Center Drive face of the building shall be articulated and modulated through the use of architectural devices such as surface articulation, variation of planes, wall surfaces and heights, as well as the placement of step backs, cutouts and other features.
- The Civic Center Drive frontage along the building and areas near the corner of the building shall utilize properly located landscaping to mitigate winds for pedestrians. Porous materials (vegetation, hedges, screens, latticework, perforated or expanded metal) offer superior wind shelter compared to a solid surface.
- Avoid “breezeways” or notches at the upwind corners of the building. (LTS)

L. GLOBAL CLIMATE CHANGE

Increasing public awareness and general scientific consensus that global climate change[1] is occurring have placed a new focus on the California Environmental Quality Act (CEQA) as a potential means to address a project's greenhouse gas (GHG) emissions. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects considered for approval. According to a letter from California's Office of the Attorney General[2] and other State guidance, global climate change can be considered an "effect on the environment" and an individual project's incremental contribution to global climate change can have a cumulatively considerable impact.

Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global climate change.

Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in GHGs and (b) global growth is continuing to contribute large amounts of GHGs across the world. No individual project would result in a significant impact on global climate change, or an environmental impact resulting from global climate change. Therefore, this section addresses climate change primarily as a cumulative impact.

This section begins by providing general background information on climate change and meteorology. It then discusses the regulatory framework for global climate change, provides data on the existing global climate setting, and evaluates potential global climate-related emissions associated with the proposed project. Modeled project emissions are estimated based on the land uses proposed as part of the project, vehicle data, and project trip generation, among other variables. The section then evaluates whether the pro-

[1] According to the U.S. EPA, climate change refers to any significant change in the measures of climate lasting for an extended period of time, including major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer. Website: http://www.epa.gov/climatechange/basics/

[2] State of California, Department of Justice, 2008. Comment letter to the City of Concord re "Concord Community Reuse Plan Draft Environmental Impact Report – SCH #2007052094". August 8.

ject could cause a cumulatively considerable contribution to climate change by conflicting with the implementation of GHG reduction measures under Assembly Bill (AB) 32 or other State regulations. The information and analysis provided in this section relies primarily on the Climate Action Team 2006 Final Report, Intergovernmental Panel on Climate Change (IPCC) Assessment Reports, various California Air Resources Board (CARB) staff reports and other related global climate change documents that provide background information on the impacts of GHGs.

1. Setting

The following discussion provides an overview of global climate change, its causes, and its potential effects. The regulatory framework relating to global climate change is also summarized.

a. Global Climate Change

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[3]

GHGs are present in the atmosphere naturally, are released by natural sources, and are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to global climate change as follows:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydroflourocarbons (HFCs)

[3] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

- Perflourocarbons (PFCs)
- Sulfur Hexaflouride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While man-made GHGs include naturally-occurring GHGs such as CO_2, CH_4, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this EIR, the term "GHGs" will refer collectively to the above gases only.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is calculated by several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of a GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_{2e}). Table V.L-1 shows the GWPs and atmospheric lifetime for each type of GHG. For example, sulfur hexaflouride is 22,800 times more potent at contributing to global warming than carbon dioxide.

The following discussion summarizes the characteristics of the six GHGs.

Carbon Dioxide (CO_2).
In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2

TABLE V.L-1 GLOBAL WARMING POTENTIALS

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

Methane (CH_4). Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California.

Nitrous Oxide (N_2O). Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF_6). HFCs are primarily used as substitutes for ozone-

depleting substances regulated under the Montreal Protocol.[4] PFCs and SF_6 are emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

The latest projections, based on state-of-the art climate models, indicate that temperatures in California are expected to rise 3 to 10.5°F by the end of the century.[5] Because GHGs persist for a long time in the atmosphere (see Table V.L-1), accumulate over time, and are generally well-mixed, their impact on the atmosphere cannot be tied to a specific point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation and reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., from deforestation, reforestation, urbanization, and desertification).

The impact of human activities on global climate change is readily apparent in the observational record. For example, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, and polar ice, and ice sheets in both the Arctic and Antarctic regions.

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO_2, CH_4 and N_2O,

[4] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to project the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

[5] California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

from before the start of industrialization (around 1750) to over 650,000 years ago. For that period, it was found that CO_2 concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from around 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration of 280 ppm to 396 ppm in 2013.[6]

The primary effect of global climate change has been a rise in the average global tropospheric[7] temperature of 0.2˚C per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming could occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include, but not be limited to:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;
- Decline of the Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

Emissions Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs and, thereby, accounts for the amount

[6] Website: http://co2now.org/. Accessed: March 5, 2013.

[7] The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

of GHGs emitted to or removed from the atmosphere over a specific period of time by a particular source is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on United States, California, and local human-generated GHG emission inventories.

U.S. Emissions. In 2010, the U.S. emitted about 1,633.2 million metric tons (MMT) of CO_{2e} with each individual at home releasing approximately 4 metric tons (MT) per year. Of the four major sectors nationwide – residential, commercial, industrial and transportation – transportation accounts for the highest amount of greenhouse gas emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2009, total U.S. greenhouse gas emissions rose by 7.3 percent, but emissions decreased from 2008 to 2009 by 6.1 percent. This decrease was primarily due to: (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas decreased significantly. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent.

State of California Emissions. According to CARB emission inventory estimates, California's gross greenhouse gas emissions decreased 1.5 percent, from 463.6 MMT[8] of CO_{2e} emissions in 2000 to 456.8 million in 2009, with a maximum of 488.8 million in 2007.[9] During the same period, California's population grew by 9.1 percent, from 33.9 to 37.2 million people and greenhouse gas emissions per person decreased from 13.7 to 12.4 MT of CO_{2e} per person. The year 2009 saw a 5.8 percent decrease in Statewide greenhouse gas emissions, driven by a noticeable drop in on-road transportation, cement production, and electricity. The year 2009 also reflects the full effects of the economic recession and higher fuel prices. As the economy recovers, greenhouse gas emissions are likely to rise again without other mitigation actions.

The California EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO_{2e}) were as follows:

- Carbon dioxide (CO_2) accounted for 83.3 percent;
- Methane (CH_4) accounted for 6.4 percent;

[8] A metric ton is equivalent to approximately 1.1 tons.

[9] California Air Resources Board, 2011. *Trends in California GHG Emissions for 2000 to 2009 by Category as Defined in the Scoping Plan.* December. Website: www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-09_trends.pdf (accessed February 2013).

- Nitrous oxide (N_2O) accounted for 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF_6) accounted for 3.5 percent.[10]

California has the fourth lowest per-capita carbon dioxide emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's greenhouse gas emissions rate of growth by more than half of what it would have been otherwise.[11]

CARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program. CARB's current GHG emission inventory covers the years 1990-2004 and is based on state-wide fuel use, processing, and activity data. The emission inventory estimates are based on the actual amount of all fuels combusted in the state, which accounts for over 85 percent of the GHG emissions within California.

CARB staff has projected 2020 unregulated GHG emissions, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions. CARB staff estimates the State-wide 2020 unregulated GHG emissions will be 596 MMT of CO_{2e}.[12]

GHG emissions in 2020 from the transportation sector as a whole are expected to increase to 225.4 MMT of CO_{2e}q (up from 179.3 MMT of CO_{2e} average during the 2002-2004 period).The industrial sector consists of large stationary sources of GHG emissions and includes oil and gas production and refining facilities, cement plants, and large manufacturing facilities. Emissions for this sector are forecast to grow to 100.5 MMT of CO_{2e} by 2020, an increase of approximately 5 percent from the average emissions level of 2002-2004 (95.9 MMT of CO_{2e}). The commercial and residential sectors are expected to contribute 46.7 MMT of CO_{2e} (up from up from 41.0 MMT of CO_{2e} average during the 2002-2004 period), or about 8 percent of the total State-wide GHG emissions in 2020.

[10] California Environmental Protection Agency, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. March.

[11] California Energy Commission, 2007. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF*, Sacramento, CA. December 22, 2006, and January 23, 2007, update to that report.

[12] California Air Resources Board, 2008. *Climate Change Scoping Plan: A Framework for Change*. December.

Bay Area Emissions. The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates greenhouse gas emissions produced in the San Francisco Bay Area in 2007.[13] The inventory, which was published February 2010, updates the BAAQMD's previous greenhouse gas emission inventory for base year 2002.

According to the BAAQMD, in 2007, 95.8 MMT of CO_{2e} of greenhouse gases were emitted by the nine-county San Francisco Bay Area. The transportation sector, including on-road motor vehicles, locomotives, ships and boats, and aircraft, and the industrial/commercial sector (excluding electricity and agriculture) are the largest sources of greenhouse gas emissions, each contributing about 36 percent of the region's total CO_{2e} emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with 16 percent of the total greenhouse gas emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 3 percent of greenhouse gas emissions. The contribution from residential fuel usage, primarily from space heating, cooking and water heating, contributed 7 percent of the total greenhouse gas emissions. Agriculture and farming activities was the smallest sector with 1 percent of the total greenhouse gas emissions in the Bay Area.

Foster City Emissions. A community-wide GHG emissions inventory was conducted for Foster City and indicated 2005 annual emissions of 245,754 MT of CO_{2e}, with 87,577 MT of CO_{2e} coming from the built environment (i.e., residential and commercial sectors), 151,873 MT of CO_{2e} from the transportation sector, and 6,304 MT of CO_{2e} from waste disposal.[14]

b. Regulatory Setting

The regulatory framework and other governmental activities addressing GHG emissions and global climate change are discussed in this section.

(1) Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the U.S. Supreme Court ruled that the U.S. EPA has the authority to regulate CO_2 emissions under the federal Clean

[13] Bay Area Air Quality Management District, 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions.* February.

[14] Foster City Ad Hoc Environmental Task Force, 2009. *Recommended Sustainability Action Plan.*

Air Act (CAA). There are currently no federal regulations that apply to GHG emissions from construction or operation of the project.

(2) State Regulations

California Environmental Quality Act (CEQA). CEQA applies to all discretionary projects undertaken or subject to approval by the State's public agencies.[15] CEQA states that it is the policy of the State of California to "ensure the long-term protection of the environment."[16] Under the provisions of CEQA, a public agency should assess the significance of impacts from the greenhouse gas emissions of a project based on the following factors[17]:

- The extent to which a project may increase or decrease greenhouse gas emissions as compared to the existing environmental conditions;
- Whether emissions resulting from the project exceed a threshold of significance that the public agency determines applies to the project; and
- The extent to which the project complies with regulations or requirements adopted to implement State, regional, or local plans for the reduction or mitigation of greenhouse gas emissions.

Title 24, Part 6 of the California Code of Regulations (1978). The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Assembly Bill 1493 (2002). AB 1493 required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks.

State of California Executive Order S-3-05 (2005). The Governor's Executive Order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels.

In June 2005, the Governor of California signed Executive Order S-3-05, which identified Cal/EPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. A "Climate Action Team," a multi-agency group of State agencies, was set up to implement Ex-

[15] CEQA Guidelines Section 15002(i).
[16] Public Resources Code Section 21001(d).
[17] CEQA Guidelines Section 15064.4(b).

ecutive Order S-3-05. Under this order, the State plans to reduce GHG emissions to 80 percent below 1990 levels by 2050. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

Assembly Bill 32, California Global Warming Solutions Act (2006). AB 32, the Global Warming Solutions Act of 2006, codifies the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, California Energy Commission (CEC), California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It required CARB and other State agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a State-wide GHG emissions limit. On December 6, 2007, CARB staff established 427 MMT of carbon dioxide equivalent ($MMTCO_{2e}$) as the total State-wide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative State-wide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_{2e}.[18] Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_{2e}. Thus, an estimated reduction of 80 million metric tons of CO_{2e} is necessary to reduce State-wide emissions to meet the AB 32 target by 2020.

[18] CARB's original 2020 BAU annual emissions forecast was 596 MMT of CO_{2e}, and was set based on the GHG inventory published by CARB covering the years 1990-2004.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008). California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 would develop emissions-reduction goals that regions can apply in planning activities. SB 375 provides incentives for local governments and developers to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations (e.g. ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Executive Order S-13-08 (2008). This Executive Order directed California agencies to assess and reduce the vulnerability of future construction projects to impacts associated with sea-level rise.

(3) Regional Regulations

Bay Area Air Quality Management District. BAAQMD is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD regulates greenhouse gas emissions through the following plans, programs, and guidelines.

Regional Clean Air Plans. BAAQMD and other air districts prepare clean air plans in accordance with the State and federal Clean Air Acts. The Bay Area 2010 Clean Air Plan (CAP) is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The most recent CAP also includes measures designed to reduce greenhouse gas emissions.

BAAQMD Climate Protection Program. The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin.

The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of greenhouse gas and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines. The BAAQMD adopted revised CEQA Air Quality Guidelines on June 2, 2010 and then adopted a modified version of the Guidelines in May, 2011. The BAAQMD CEQA Air Quality Guidelines include thresholds of significance for greenhouse gas emissions.[19] Under the latest CEQA Air Quality Guidelines, a local government may prepare a qualified greenhouse gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified greenhouse gas Reduction Strategy and General Plan that addresses the project's greenhouse gas emissions, it can be presumed that the project will not have significant greenhouse gas emissions under CEQA.[20] The BAAQMD also developed a quantitative threshold for project level analyses based on estimated greenhouse gas emissions as well as per capita metrics.

(4) Local Policies

While the Foster City General Plan does not include policies that specifically address global climate change, the following goals and policies listed in Table V.L-2 would tend to reduce GHG emissions. Foster City is currently in the process of a General Plan Update. In addition, the Foster City Recommended Sustainability Action Plan was published in 2009 and, once adopted, will implement GHG reduction measures on a community-wide scale through goals and recommendations within the following sectors: energy, solid waste, air quality/transportation, and water.

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[19] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the 2011 BAAQMD CEQA Air Quality Guidelines. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. In view of the court's order, the BAAQMD is no longer recommending that the thresholds of significance be used as a generally applicable measure of a project's significant air quality impacts. However, scientific information supporting the thresholds was documented in BAAQMD's proposed thresholds of significance analysis and was not challenged or overturned in this decision. This analysis considers the science informing the thresholds as being supported by substantial evidence. Accordingly, this report uses the thresholds and methodologies from BAAQMD's May 2011 CEQA Air Quality Guidelines to determine whether there would be any project impacts.

[20] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

TABLE V.L-2 GENERAL PLAN GOALS AND POLICIES THAT WOULD REDUCE GHG EMISSIONS

Goal 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 and welfare of the community.
Goal LUC-H	*Encourage Mixed Use projects.* Encourage mixed use projects, with the residential portion of mixed use projects built at the maximum allowed densities to reduce trips to, from and within the City.
Goal 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.
Goal 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 Level of Service 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.
Policy LUC-6	*Planned Development Zoning.* The Planned Development zoning designation may be applied to any designated multi-family, commercial or industrial site to allow a mixed-use project, subject to the following standards: …(c) advertising or identification signs are limited in size and number, and regulated by a project-specific sign program; (d) any residences located in the development can be protected by landscaping, open spaces, and other design features from the noise and traffic generated by commercial establishments; (e) off-street parking for residents, employees, and customers is provides in accordance with the Municipal Code; and (f) an adequate amount of open space for use by any residents of the project is provided. Such an open space area should be protected to provide a private area for residents.
Policy LUC-18	*Mixed Use Residential/Commercial Projects.* The City will encourage the housing production by allowing mixed use residential/commercial projects to be built with the residential portion of mixed use projects built at the maximum allowed densities to reduce trips to and from and within the City. In allowing higher residential densities for mixed use projects, the project must comply with the goals and policies of the General Plan, including Policies LUC-15 and LUC-16.
Policy 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 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; and (d) Developer payment of pro rata fair share of traffic improvement costs for new developments.
Policy 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.

Policy LUC-54	*Coordination with SamTrans.* The City shall work with SamTrans in defining new routes and improving the public transit and transportation system.
Policy 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 by one space for every eight bicycle parking spaces provided, per Chapter 17.62 of the Municipal Code.
Policy H-A-4-a	*Air Quality Impacts.* When site-specific development is proposed and/or a Rezoning application is processed, potential air quality impacts from project traffic shall be studied, and mitigation measures to ensure compliance with the Bay Area Air Quality Management District standards in effect at the time shall be recommended if necessary.
Policy H-B-3	*Encourage Energy Conservation in Housing*. Encourage adoption of energy conservation measures and promote energy conservation programs that provide assistance for energy conservation improvements.
Policy H-B-3-a	*Energy Conservation Assistance.* The City will use Community Development Block Grant funds or other funds, as available, to assist lower-income residents to weatherize their homes to make other energy-conservation home repairs.
Policy H-B-3-b	*Increased Energy Conservation.* The City will continue to enforce Title 24 Energy requirements and will review its development ordinances to determine if zoning, building, subdivision and others discourage the use of energy conservation measures (placement of solar panels, energy conserving architectural designs, building orientation, etc.).
Goal PC-C	*Maintain and Improve the City's Pedway and Bikeway System.* Maintain and improve the pedway system that surrounds that city and the walkway system that provides safe access to parks, schools and other streets.
Goal PC-F	*Provide Adequate Open Space to Serve Existing and New Development.* Assure the provision of adequate open space to serve existing and new development and preserve existing open spaces with public access easements within private commercial developments.
Goal PC-G	*Protect and Conserve Natural Resources.* Protect and conserve wildlife habitat, energy resources, land resources, air quality, and the quality and quantity of water resources.
Policy PC-9	*Bikepath System.* Develop a Foster City bikepath system to connect major work, shopping, school, civic and recreational destinations throughout the city.
Policy PC-11	*Pedway and Bikeway System Maintenance and Improvement.* Continue to maintain, expand and improve the existing walkway and pedway system.
Policy PC-28	*Air Quality.* Reduce the impact of development on local air quality.
Policy PC-29	*Energy Conservation.* Promote energy conservation in new and existing development.

Source: City of Foster City General Plan, 1993.

2. Impacts and Mitigation Measures

This section evaluates the potential for the project to have a cumulatively considerable contribution to global climate change. Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the project's emission of GHGs. Mitigation measures are proposed as appropriate.

a. Criteria of Significance

The BAAQMD CEQA Air Quality Guidelines contain methodology and thresholds of significance for evaluating greenhouse gas (GHG) emissions from land use type projects. The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of AB 32 scoping plan measures that would reduce regional emissions. BAAQMD provides guidance to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. It can be assumed that projects that do not exceed BAAQMD thresholds are also in compliance with AB 32 goals, since these goals are the basis of the significance thresholds developed by BAAQMD.[21]

For land use projects, the BAAQMD thresholds for evaluating GHG emissions are in compliance with a qualified GHG reduction strategy; or a bright-line emissions threshold of 1,100 MT of CO_{2e} per year or an emission efficiency metric of 4.6 MT of CO_{2e} (carbon dioxide equivalency) per year per service population (or per capita).[22] Service population is the sum of full time workers. There are no other quantified thresholds adopted by other agencies or the City to evaluate GHG emissions from land use projects. Projects that have emissions below 1,100 MT of CO_{2e} per year, or an emission efficiency metric of 4.6 MT of CO_{2e} per year per capita or less, are considered to have less than significant GHG emissions. For example, the screening size for retirement communities is 94 dwelling units. Although the City has policies and actions to reduce GHG emissions, the City has not adopted a qualified GHG reduction strategy. The project size exceeds the screening size listed by BAAQMD as having less than significant GHG emissions. Therefore, a refined analysis that includes modeling of GHG emissions from the project was conducted.

[21] Bay Area Air Quality Management District 2009. CEQA Air Quality Guidelines Update – Thresholds of Significance. May.

[22] Bay Area Air Quality Management District, 2011. *BAAQMD CEQA Air Quality Guidelines*. May.

b. Less-than-Significant Climate Change Impacts

Less-than-significant impacts of the proposed project are described below.

The adopted AB 32 Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems. The project would be subject to all applicable permit and planning requirements in place or adopted by the City of Foster City or State of California (e.g., 2010 Title 24 California Building standards); therefore, the proposed project would not conflict with plans or policies related to the reduction of GHG emissions.

c. Significant Climate Change Impacts

Significant impacts of the proposed project are described below.

Impact GCC-1: Implementation of the project would generate greenhouse gas emissions that could exceed BAAQMD thresholds. (S)

Project-Related Emissions Methodology. The California Emissions Estimator Model Version 2011.1.1 (CalEEMod) was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size, trip generation rate and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by the BAAQMD. Unless otherwise noted below, the CalEEMod model defaults for San Mateo County were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod input and output worksheets are included in Appendix D.

Year of Analysis

The model uses mobile emission factors from the California Air Resources Board's EMFAC2007 model and adjusts these based on the effect of new regulations to reduce GHG emissions. These regulations include the Pavley Rule that increases fleet efficiency (reducing fuel consumption) and the low carbon fuel standard. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. The year 2020 was analyzed since this the first milestone year indicated in AB 32.

Land Use Descriptions

The "Retirement Community" (262 dwelling units), the "Congregate Care (assisted living)" (152 dwelling units), "General Office Building" (30,000 s.f.), "Strip Mall" – neighborhood retail (16,400 s.f.), "High Turnover" (12,000 s.f.), and "Quality Restaurant" (11,600 s.f.) were input to CalEEMod.

Trip Generation Rates
CalEEMod allows the user to enter specific trip generation rates. Fehr & Peers provided the trip generation rate for the project by land use type, which was entered into the model. Pass-by and internalization trips for retail were accounted for by Fehr & Peers. These reductions were accounted for in CalEEMod.

Area Sources
The model assumed no wood-burning stoves or fireplaces.

Energy
Default rates for energy consumption were assumed in the model. Emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric utility's (PG&E) projected 2020 CO_2 intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641.35 pounds of CO_2 per megawatt of electricity produced. The derived 2020 rate for PG&E was estimated at 289.85 pounds of CO_2 per megawatt of electricity delivered.

Other CalEEMod Inputs
Default model assumptions for GHG emissions associated with area sources, solid waste generation and water/wastewater use were applied to the project. According to CalEEMod, the emissions from energy use (electricity, natural gas) from the Retirement Community land use is off by three decimal places, so users are recommended to make the proper adjustment (i.e., divide by 1,000) from the emissions output to obtain the proper result.[23]

Per Capita Computations
The service population was estimated at 553 future residents and 168 employees, for a total of 721.

Construction Emissions. Construction of the entire project was assumed to occur over an approximate 38-month period starting in Spring of 2014 and ending in Summer of 2017, with approximately 18 months of grading and infrastructure, 20 months of building construction, and a small peri-

[23] California Emission Estimator Model, User's Tips, June 2011.

od to demolish the existing building on-site. Approximately 55,000 cubic yards (CY) of import fill would be required during grading of the project site. The model also accounted for the demolition of the approximately 5,625 square foot (s.f.) building on-site. 850 parking lot spaces are planned for construction.

GHG emissions associated with construction were computed to be 714, 1,123, 1,219 and 331 MT CO_{2e} for 2014, 2015, 2016 and 2017, respectively.[24] These are the emissions from on-site operation of construction equipment, hauling truck trips, vendor truck trips, and worker trips. The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions. The District recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. As detailed in Mitigation Measure GCC-1, best management practices that would be incorporated into construction of the proposed project include: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials. Since there are no significance thresholds established for GHG emissions resulting from construction activities, and the construction contractor would implement BAAQMD-recommended best management practices, this impact would be considered less than significant.

Operational Emissions. The CalEEMod model, along with the project vehicle trip generation rates, were used to predict annual emissions associated with operation of the fully-developed site under the proposed project. As shown in Table V.L-3, in 2020 the per capita emissions rate of 5.0 MT of CO_{2e}/yr/capita would exceed the BAAQMD threshold of 4.6 MT CO_{2e}/yr/capita. However, implementation of Mitigation Measure GCC-1 would reduce GHG emissions through energy-efficiency measures, a TDM program for future workers, water conservation strategies and solid waste reduction measures. Implementation of GCC-1 would reduce total project emissions by approximately 349 MT CO_{2e}/yr. After implementation of Mitigation Measure GCC-1, 2020 project per capita emissions are predicted to be 4.6 MT CO_{2e}/yr/capita, which would be equal to the BAAQMD threshold. As a result, this impact would be considered less than significant with mitigation.

[24] Based on an average of 4 calendar years, the per annum construction emissions would be approximately 848 metric tons.

TABLE V.L-3 ANNUAL PROJECT GHG EMISSIONS IN METRIC TONS

Source Category	2020 Unmitigated Emissions	2020 Mitigated Emissions
Area	5.18	5.18
Energy Consumption	1,069.68	984.99
Mobile	2,273.73	2,037.74
Solid Waste Generation	208.22	187.40
Water Usage	75.45	67.90
Total Annual Emissions	3,632.26	3,283.21
Per Capita Emissions*	5.0 MT CO_2e/year/capita	4.6 MT CO_2e/year/capita
BAAQMD Threshold	*4.6 MT CO_2e/year/capita*	

* Based on a service population of 721

Mitigation Measure GCC-1: To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the project:

Construction and Building Materials

- Use locally produced and/or manufactured building materials of at least 10 percent for construction of the project;
- Recycle or reuse at least 50 percent of construction waste or demolition materials;
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas; and
- Use "Green Building Materials," such as those materials which are resource efficient, and recycled and manufactured in an environmentally friendly way, including low Volatile Organic Compound (VOC) materials.

Energy Efficiency Measures

- Design all project buildings according to 2010 California Building Code's Title 24 Part 6 energy standards, including but not limited to any combination of the following:
  - Increase insulation such that heat transfer and thermal bridging is minimized;
  - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and

- Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances or other applicable electrical equipment.
- Install efficient lighting and lighting control systems;
- Install light colored "cool" roofs and cool pavements;
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems; and
- Install solar powered or light emitting diodes (LED) outdoor lighting systems.

Water Conservation and Efficiency Measures

- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include the following, plus other innovative measures that might be appropriate:
  - Create water-efficient landscapes within the development;
  - Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls;
  - Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water;
  - Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets, dual-flush toilets and waterless urinals; and
  - Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.

Solid Waste Measures

- Reuse and recycle construction waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard); and
- Provide employee education about reducing waste and available recycling services.

With implementation of those elements of this multi-part mitigation measure that are feasible for development on the project site, the project's contribution to cumulative GHG emissions would be reduced to a less-than-significant level. (LTS)

M. CULTURAL AND PALEONTOLOGICAL RESOURCES

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional, historical, or cultural value. In planning, these values are identified through a process of significance assessment guided by CEQA[1] and the regulations that implement CEQA (CEQA Guidelines).[2] Cultural resources can include a wide variety of resources, such as archaeological deposits, historical railroad tracks, and buildings of architectural significance. Generally, for a cultural resource to be considered a historical resource under CEQA it must be 50 years or older.[3]

Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. These resources may also include plant imprints, petrified wood, and animal tracks.

This section describes the baseline conditions for cultural and paleontological resources in the project site; identifies potentially significant project-related impacts to such resources; and provides mitigation measures to avoid, reduce, or offset significant impacts.

1. Setting

This section presents the existing conditions for cultural and paleontological resources in the project site. The following subsections provide: (a) the regulatory setting; (b) methods of the analysis; and (c) an overview of the area's cultural and paleontological background.

a. Methodology

Background research for this cultural resources analysis consisted of a records search, literature review, and a fossil locality search. This research was conducted to identify cultural resources and paleontological resources in and adjacent to the project site. The results were also used to understand the archaeological, ethnographic, and historical setting of the project site.

(1) Records Search

A records search of the project site was conducted on October 22, 2012, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official State repository of cultural resources records and reports for San Mateo County.

[1] Public Resources Code Section 2100 et. seq.
[2] 14 California Code of Regulations ("CCR") Section 1500 et. seq.
[3] CCR Section 4852(d)(2)

As part of the records search, LSA reviewed the following State of California inventories for cultural resources in and adjacent to the project site:

- *California Inventory of Historic Resources*;[4]
- *California Historical Landmarks*;[5]
- *California Points of Historical Interest*;[6]
- *Five Views: An Ethnic Historic Site Survey for California*;[7]
- *Directory of Properties in the Historic Property Data File*.[8] The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.

(2) Literature Review

LSA reviewed prehistoric, ethnographic, and historical literature and maps for information about the project site. As part of the literature review LSA reviewed the following documents:

- *California Place Names: The Origin and Etymology of Current Geographical Names;*[9]
- *Historic Spots in California;*[10]
- *Handbook of North American Indians*, Volume 8: Costanoan;[11]
- *Handbook of the Indians of California*;[12]

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[4] California Department of Parks and Recreation, 1976. *California Inventory of Historic Resources*. California Department of Parks and Recreation, Sacramento.

[5] California Office of Historic Preservation, 1996. *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento.

[6] California Office of Historic Preservation, 1992. *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento.

[7] California Office of Historic Preservation 1988. *Five Views: An Ethnic Historic Site Survey for California*

[8] California Office of Historic Preservation, April 5, 2012. California Department of Parks and Recreation, Sacramento.

[9] Gudde, Erwin G.,1998. *California Place Names: The Origin and Etymology of Current Geographical Names*. Fourth edition, revised and enlarged by William Bright. University of California Press, Berkeley.

[10] Hoover, Mildred Brooke, Hero Eugene Rensch, Ethel Rensch, and William N. Abeloe, 1989. *Historic Spots in California,* Fourth edition, revised by Douglas E. Kyle. Stanford University Press, Stanford, California.

[11] Levy, Richard 1978. Costanoan. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

[12] Kroeber, Alfred L., 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C. Reprinted 1976 by Dover Publications, New York.

- *Historic Civil Engineering Landmarks of San Francisco and Northern California;*[13] and
- USGS and Army Corps of Engineers topographic quadrangles.[14]

(3) Fossil Locality Search

The fossil locality search submitted to the University of California Museum of Paleontology (UCMP) for the recent Gilead Sciences Corporate Campus Master Plan EIR in Foster City was reviewed for the proposed project. The fossil locality search radius for the Gilead Sciences Corporate Campus project site includes the proposed project. Dr. Pat Holroyd of the UCMP conducted the locality search on July 9, 2008, and identified no recorded fossils within the project site.

b. Cultural and Paleontological Setting

This section summarizes the prehistoric, ethnographic, and historical background of the project site and its vicinity. A brief description of the paleontological background follows.

(1) Prehistory and Ethnography

The area around Foster City was probably settled by native Californians between 12,000 and 6,000 years ago. Penutian peoples migrated into central California around 4,500 years ago and were firmly settled around San Francisco Bay by 1,500 years ago. The descendants of the native groups who lived between the Carquinez Strait and the Monterey area are the Ohlone, although they are often referred to by the name of their linguistic group, Costanoan.

Ethnographically, the *Lamchin* tribelet of Ohlone occupied the bayshore and adjacent interior valleys from present-day Belmont to Redwood City.[15] The Ohlone exploited marine and estuarine resources, as evidenced from archaeological materials recovered from prehistoric shell middens along the San Francisco bayshore. Although it is possible that the project site and vicinity were utilized to gather such resources, prehistorically the project site consisted of bay mud and tidal flats and would have been less suitable for habitation. Prehistoric archaeological sites in the general area are located inland

[13] American Society of Civil Engineers, 1976. *Historic Civil Engineering Landmarks of San Francisco and Northern California.* The History and Heritage Committee, San Francisco Section, San Francisco, California.

[14] U.S. Geological Survey and Corps 7.5' and 15' topographic quadrangles for *San Mateo, Calif.*, 1915, 1939, 1949, 1956, and 1968.

[15] Milliken, Randall, 1995:246-247. *A Time of Little Choice, The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810.* Ballena Press Anthropological Papers No. 43, Menlo Park, California.

from present-day Foster City, along the bayshore terrace near, but outside of, areas that were historically tidal marshland, such as the project site.

An Ohlone household consisted of about 15 individuals, with households grouping together to form villages, which in turn comprised tribelets. In the Foster City area, many Ohlone villages were located along waterways. Like many other Native American groups in California, the acorn was the Ohlone's dietary staple. Acorns were knocked from trees with poles, then leached to remove bitter tannins and eaten as mush or bread. The Ohlone used many other plant resources, including buckeye, California laurel, elderberries, strawberries, manzanita berries, goose berries, toyon berries, wild grapes, wild onion, cattail, amole, wild carrots, clover, and chuchupate. Animals hunted by the Ohlone and their neighbors included black-tailed deer, Roosevelt elk, antelope, and marine mammals. Smaller animals such as dog, skunk, raccoon, rabbit, squirrel, geese, ducks, salmon, sturgeon, and mollusks were also hunted, fished, or gathered. In addition to sustenance, the Bay Area's flora and fauna provided the Ohlone with raw materials for clothing, shelter, and boats.[16]

Intensive Hispanic exploration and settlement of the Bay Area began in the late 18th century and Ohlone culture was radically transformed when European settlers moved into northern California. These settlers established the mission system and exposed the Ohlone to diseases to which they had no immunity. Mission San Francisco was founded in 1776 and drew Ohlone from the entire Bay area, including the Lamchin tribelet. Following the secularization of the missions in 1834, native people in the Bay Area moved to ranchos, where they worked as manual laborers.[17]

(2) History

Historical maps show the project site was bay tidal marshland until about 1939.[18,19] In fact, levees were constructed around Brewer Island (present day Foster City) sometime around 1897 and the land was reclaimed at that time. Brewer Island was once a salt marsh that was diked and drained for use as a pasture for dairyman Frank M. Brewer. According to Gudde,[20] Foster City was named for T. Jack Foster, a developer who purchased Brewer Island in 1959

[16] Levy, Richard, 1977:462-492.Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Volume 8; William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

[17] Ibid.

[18] U.S. Corps of Engineers, 1939. California, San Mateo Quadrangle. 15-minute topographic quadrangle. U.S. Army Corps of Engineers, Washington, D.C.

[19] U.S. Geological Survey, 1915. California, San Mateo Sheet. 15-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

[20] Gudde, op. cit.,:136.

in order to construct a master-planned community. Filling of the island for residential use began in 1961, using dredged material from the San Bruno shoal in San Francisco Bay. The City was incorporated in 1971.

(3) Paleontological Setting

The project site is located on artificial fill and Holocene age (10,000 years ago to present) bay mud. Artificial fill consists of sediments that have been removed from one location and transported to another by humans. The artificial fill will not contain any significant paleontological resources in primary context because of its disturbed nature and unknown origin. Bay mud has been known to contain Holocene molluscan fossils,[21] but such fossils are not considered significant resources.

c. Regulatory Setting

The following describes the regulatory context for cultural and paleontological resources in Foster City.

(1) California Environmental Quality Act

CEQA applies to all discretionary projects undertaken or subject to approval by the State's public agencies.[22] CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this State with… historic environmental qualities…and preserve for future generations examples of the major periods of California history."[23] Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."[24]

CEQA Section 15064.5(a) defines a "historical resource" as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register;
- Listed in a local register of historical resources (as defined at Public Resources Code Section 5020.1(k));
- Identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code; or

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[21] Helley, E.J, K.R. La Joie, W.E. Spangle, and M.L. Blair 1979. Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive *Planning.* Geological Survey Professional Paper 943. U.S. Geological Survey and Department of Housing and Urban Development, Washington, D.C.

[22] CEQA Guidelines Section 15002(i).

[23] Public Resources Code Section 21001(b), (c).

[24] CEQA Guidelines Section 15064.5(b).

- Determined to be a historical resource by a project's lead agency (CCR Title 14(3) Section 15064.5(a)).

A historical resource consists of "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources."[25]

CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA planning process.[26,27] If feasible, adverse effects to the significance of historical resources must be avoided, or the effects mitigated.[28] The significance of an historical resource is impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for the California Register of Historical Resources. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required.[29]

If the cultural resource in question is an archaeological site, CEQA[30] requires that the lead agency first determine if the site is a historical resource as defined in CEQA Guidelines Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource.[31] If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with Public Resources Code Section 21083.2.[32] In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.[33] CEQA defines a "unique archaeological resource" as an ar-

[25] CEQA Guidelines Section 15064.5(a)(3).
[26] CEQA Guidelines Section 15064.5.
[27] Public Resources Code Section 21083.2.
[28] CEQA Guidelines Section 15064.5(b)(4).
[29] CEQA Guidelines Section 15065(a).
[30] CEQA Guidelines Section 15064.5(c)(1).
[31] California Office of Historic Preservation, 2001a:8. California Environmental Quality Act (CEQA) and Historical Resources. Technical Assistance Series No. 1. California Department of Parks and Recreation, Sacramento.
[32] CEQA Guidelines Section 15064.5(c)(3).
[33] Bass, Ronald E., Albert I. Herson, and Kenneth M. Bogdan, 1999:105. *CEQA Deskbook: A Step-by-Step Guide on how to Comply with the California Environmental Quality Act*. Solano Press Books, Point Arena, California.

chaeological 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 one or more of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.[34]

Paleontological resources are addressed in the Public Resources Code, which states that "a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site…"[35] A criterion from the CEQA Guidelines Environmental Checklist, described later in this section, calls for the evaluation of a project's direct or indirect impacts on a paleontological resource or site.

If an impact to a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact.[36] Mitigation must avoid or substantially lessen the physical impact that the project will have on the resource. Generally, the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historical resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less-than-significant level.[37]

(2) California Register of Historical Resources

The California Register of Historical Resources (California Register) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources, and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change.[38] Any resource listed in, or eligible for listing in, the California Register is to be taken into consideration during the CEQA process.

[34] Public Resources Code Section 21083.2(g).
[35] Public Resources Code Section 5097.5
[36] CEQA Guidelines Section 15126.4 (a)(1).
[37] Public Resources Code Section 21002.1(b).
[38] Public Resources Code Section 5024.1(a).

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource may be significant under one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad pattern 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.

Age

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource.[39,40] The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.[41]

Integrity

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association."[42]

Eligibility

Resources that are significant, meet the age guidelines, and possess integrity will generally be considered eligible for listing in the California Register.

(3) Health and Safety Code. Health and Safety Code Section 7050.5 states that in the event of discovery or recognition of any human remains in

[39] Ibid
[40] CEQA Guidelines Section 4852 (d)(2).
[41] California Office of Historic Preservation, 1995. *Instructions for Recording Historical Resources.* Office of Historic Preservation, Sacramento.
[42] California Office of Historic Preservation, 2006:2. *A Comparison (for purposes of determining eligibility for the California Register).* Technical Assistance Series No. 6. California Department of Parks and Recreation, Sacramento.

any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

(4) Public Resources Code. Public Resources Code Section 5097.5 provides for the protection of cultural and paleontological resources. This section prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any public lands under the jurisdiction of State or local authorities.

d. Recorded Cultural and Paleontological Resources

This section describes the existing conditions for cultural resources in the project site, followed by those for paleontological resources. The cultural resources existing conditions consist of the results of the records search, literature review, and the fossil locality search.

(1) Records Search Results

A review of the NWIC database indicated that no previous cultural resources studies of the project site have been done. No cultural resources were identified by this study, and no significant cultural resources are recorded within a 0.25-mile radius of the project site.

(2) Literature Review Results

No prehistoric or ethnographic sites are reported in the project site. A review of historical aerial photographs and topographic maps show a power line constructed in the project site in the 1930s.[43] Residential and roadway construction did not occur in the vicinity of the project site until the 1960s.

(3) Fossil Locality Search Results

The UCMP fossil locality search identified no recorded paleontological resources within the project site.

[43] The easement for these power lines currently parallels Foster City Boulevard and will not be affected by the project. The project would not introduce a new visual impact that would affect the power lines.

2. Impacts and Mitigation Measures

The following section describes potentially significant project impacts to cultural and paleontological resources. Mitigation recommendations are made to avoid, minimize, or mitigate such impacts where feasible.

a. Criteria of Significance

The criteria below are derived from the CEQA Guidelines Environmental Checklist. Implementation of the proposed project would have a significant impact on cultural and/or paleontological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site; or
- Disturb any human remains, including those interred outside of formal cemeteries.

b. Less-Than-Significant Cultural and Paleontological Resources Impacts

The project site consisted of tidal marsh from the Holocene (10,000 years ago to present) until the late 19th century, and it is unlikely that it would have been used for prehistoric human habitation. There is a low possibility of encountering prehistoric archaeological deposits during project implementation.

No buildings or structures occur on the property until sometime after 1980.[44] Today the northwest portion of the project site is a paved parking lot with a temporary tent building adjacent to Civic Center Drive. The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.[45] The building and the structure in the project site are 28 years old or less, do not qualify as historical resources under CEQA, and do not warrant further consideration.

c. Significant Cultural and Paleontological Resources Impacts

[44] U.S. Geological Survey 1973, 1980. San Mateo, Calif. 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

[45] California Office of Historic Preservation 1995:2. *Instructions for Recording Historical Resources.* Office of Historic Preservation, Sacramento.

Impact CULT-1: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could adversely impact archaeological cultural resources. (S)

There is a low potential that ground-disturbing construction at the project site could encounter archaeological cultural resources. However, if such a resource were discovered during construction activities, construction activities could result in a substantial adverse change to the resource, which could result in a significant impact.

Mitigation Measure CULT-1: If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery shall cease and a qualified archaeologist will be contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any archaeological materials or human remains and associated materials. It is recommended that adverse effects to such deposits be avoided by project activities. If avoidance is not feasible, 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 materials at 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 project construction or actions that could adversely affect the deposit in question.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results 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 NWIC of the Historical Resources Information System.

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, pestles, 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.

Implementation of this mitigation measure will reduce this impact to a less-than-significant level. (LTS)

Impact CULT-2: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could adversely impact paleontological resources. (S)

There is a low potential that ground-disturbing construction at the project site will encounter paleontological resources. If such resources are encountered and damaged, however, such an effect may be considered a significant impact. Should such resources be encountered, implementation of the following mitigation measure would reduce this potential impact to a less-than-significant level. The project site is located on artificial fill and Holocene bay mud to an unknown depth. The artificial fill will not contain any paleontological resources in primary context. Bay mud has been known to contain Holocene aged molluscan fossils, but such fossils are not considered significant.

Mitigation Measure CULT-2: If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall cease and a qualified paleontologist will be contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. It is recommended that adverse effects to paleontological resources be avoided by project activities. If avoidance is not feasible, 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 must be avoided, or such effects must 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 in question.

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 should be submitted to the project proponent, the Foster City Community Development Department, and the paleontological curation facility.

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.

Implementation of this mitigation measure will reduce this impact to a less-than-significant level. (LTS)

Impact CULT-3: Ground-disturbing activities associated with site preparation and the construction of building foundations and underground utilities could disturb human remains, including those interred outside of formal cemeteries. (S)

Although not anticipated, human remains could be encountered and damaged or destroyed by project construction. Such an impact would be considered significant. Should such remains be encountered, implementation of the following mitigation measure would reduce this potential impact to a less-than-significant level. Construction of the proposed project would require soil excavation and grading for building foundations and utilities. There is no evidence of human remains at the project site, nor is there an expectation that such remains will be encountered.

Mitigation Measure CULT-3: If human remains are encountered, work within 25 feet of the discovery shall cease and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the find and consult with agencies as appropriate. The project proponent should 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 must 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 report should be submitted to the project proponent, the Foster City Community Development Department, the MLD, and the NWIC.

Implementation of this mitigation measure will reduce this impact to a less-than-significant level. (LTS)

VI. ALTERNATIVES

The CEQA Guidelines require the analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.[1] An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The proposed project and the project objectives are described in detail in Chapter III, Project Description, and the potential environmental effects of implementing the proposed project are analyzed in Chapter V, Settings, Impacts and Mitigation Measures. Impacts associated with the following environmental topics would be significant for the proposed project without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures recommended in this EIR are implemented:

- Transportation and Circulation
- Air Quality
- Global Climate Change
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Hazards and Public Safety
- Public Services, Utilities, and Recreation
- Aesthetics and Shade and Shadow
- Wind
- Cultural and Paleontological Resources

The following impacts are significant and unavoidable, and cannot be reduced to a less-than-significant level with implementation of mitigation measures. After mitigation, the project would result in the following significant unavoidable impacts:

[1] *CEQA Guidelines*, 1998, Section 15126.6.

- Construction noise.
- Incompatibility with a policy designed to avoid/mitigate an environmental impact related to construction noise.

The following discussion is provided to meet the requirement of the CEQA Guidelines and provide the public and decision makers with information that will help them understand the adverse impacts and benefits associated with three potential alternatives to the proposed project. A discussion of the environmentally superior alternative is also provided, as required by CEQA. The three alternatives are as follows:

- The **No Project/No Build alternative**, which assumes the 15 Acres project would not be developed. The existing 15-acre site would remain vacant and undeveloped with no new development on the project site.
- The **Reduced Commercial Space alternative,** which assumes a reduction in the total commercial space included in the project. Development under this alternative would include 30,000 total square feet of commercial space, rather than the 70,000 square feet proposed in the 15 Acres project. The number of residential units would remain the same as the proposed project.
- Th**e Reduced Density alternative,** which assumes a reduction in the total residential units and commercial space included in the project. Development under this alternative would include 331 residential units and 24,000 square feet of commercial space, rather than the 414 units and 70,000 square feet of commercial space proposed in the 15 Acres project.

In considering the range of alternatives to be analyzed in an EIR, the CEQA Guidelines state that an alternative site/location should be considered when feasible alternative locations are available and the "significant effects of the project would be avoided or substantially lessened by putting the project in another location." A feasible alternative location that would achieve the key project objective of redeveloping the City owned vacant site is not available. As such, an alternative site location is not considered.

As stated above and described in detail in Section V, Impacts and Mitigation Measures, implementation of the proposed project would result in two significant unavoidable impacts, both of which relate to construction noise: Impacts Noise-1 and Land-1.

Both of these impacts are temporary and could only be avoided by a project that would not involve major noise generating construction equipment and if the construction schedule were modified to complete the entire project within one construction season. The nature of building in Foster City and the size

and type of buildings necessary to achieve the project objectives necessitate use of pile driving and a construction period that will extend beyond one construction season, which will ultimately result in impacts to the surrounding land uses. As a result, a modified project such as that described below in connection with Alternatives C, Reduced Commercial Space Alternative, and D, Reduced Density Alternative, would not eliminate these impacts.

A. NO PROJECT/NO BUILD ALTERNATIVE

1. Principle Characteristics

The No Project/No Build alternative assumes that the project site would remain in its existing condition and would not be subject to development. There would be no structures constructed on the project site.

2. Relationship with Project Objectives

The No Project/No Build alternative would not achieve the project objectives. The project site would continue to remain vacant and underutilized, thereby failing to achieve the project objectives of creating a vibrant mixed-use city center and town square for Foster City. Furthermore, this alternative would not provide any senior housing, affordable housing, retail, or public recreational uses to the City, and therefore would not meet the project objectives.

3. Analysis of the No Project/No Build Alternative

The potential impacts of the No Project/No Build alternative are described in the following section.

(1) Land Use

Under the No Project/No Build alternative, there would not be any construction or the introduction of new land uses on the project site. This alternative would not result in the land use impact related to construction noise exceeding the City's established standards and policies which were, in part, designed to reduce environmental impacts. The positive land use impacts of carrying out land use direction contained in the Foster City General Plan would not occur under this alternative. This alternative would not result in any significant land use impacts.

(2) Transportation and Circulation

The No Project/No Build alternative would result in some changes to existing traffic conditions as there are several projects that have already been approved. The baseline conditions which are described in Section V.B.1.a of this EIR would occur under the No Project/No Build alternative. Intersections within the study area would operate at acceptable levels of services. Unlike the proposed project, the No Project alternative would not result in the potential

for construction that could interfere with circulation patterns. No significant impacts to transportation and circulation would result from implementation of the No Project alternative.

(3) Air Quality

This alternative would not change the existing air quality. Under this alternative, there would not be construction or an increase in vehicle trips that are associated with the proposed project. However, while this project would not contribute to regional emissions, San Mateo County would still be in nonattainment status for ozone.

(4) Noise

The No Project/No Build alternative would not result in noise impacts associated with the construction of the proposed project, thereby avoiding the project's significant unavoidable impact related to construction noise. Additionally, under this alternative there would be no new residential units exposed to traffic noise sources.

(5) Geology, Soils, and Seismicity

Under the No Project/No Build alternative, the uses envisioned in the proposed project would not be developed. The project site would still be susceptible to seismic ground shaking and differential compaction, as are identified under the proposed project. However, given that the project site would remain undeveloped, potential residents associated with the proposed project would not be exposed to potential seismic ground shaking.

(6) Hydrology and Water Quality

The No Project/No Build alternative would not result in the construction of any new structures, and the project sites would remain in its current state. This alternative would not result in an increased amount of runoff that could affect stormwater conveyance systems or degradation of water quality in receiving waters. As dewatering would not occur on the project site, construction workers and the public would not be exposed to potential contaminants in the soil and groundwater.

(7) Biological Resources

The No Project/No Build alternative would keep the project site in its existing conditions. Like the proposed project, no potential impacts to special status species or plants would occur under this alternative. As the project site would remain unchanged, there would be no impact to wildlife species that could be located onsite.

(8) Hazards and Hazardous Materials

Implementation of the No Project/No Build alternative would keep the site in its existing condition. As such, it would not create significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create a significant hazard to the public or the environment through reasonable foreseeable upset or accident conditions involving the release of hazardous materials into the environment. This alternative would not expose construction workers or the public to hazardous materials from contaminants in the soil during and following construction activities, or expose workers or the public to airborne toxics, (e.g., lead-based paint and asbestos) during demolition, but would forego the opportunities to improve conditions as provided by the project.

(9) Public Services, Utilities and Recreation

The No Project/No Build alternative would not result in any residential development on the project site. As such, there would be no increase demand for schools, libraries, parks, or utilities services.

(10) Aesthetics and Shade and Shadow

Under the No Project/No Build alternative, the project site would remain undeveloped. As no development would result under the No Project/No Build alternative, there would be no impacts related to light and glare. The visual character of the project site under this alternative would be the same as the current conditions.

(11) Wind

The No Project/No Build alternative would result in no new development on the project site, and therefore wind conditions on the site would remain the same. The absence of new buildings and structures on the site would mean that wind velocity, direction, temperature, etc. would not be impacted.

B. REDUCED COMMERCIAL SPACE ALTERNATIVE

1. Principle Characteristics

The Reduced Commercial Space alternative assumes a reduction in the total commercial space included in the project. Development under this alternative would include 30,000 total square feet of commercial space, rather than the 70,000 square feet proposed in the 15 Acres project. The number of residential units would remain the same as the proposed project.

2. Relationship with Project Objectives

The Reduced Commercial Space alternative would meet most of the project objectives. This alternative would develop City-owned vacant property with

housing, retail and cultural activity that activates the city center; provide for an on-site senior resident population that is able to participate in an amenity-rich city center; enhance the existing neighborhood and provide access points to the existing civic center complex; establish a town square that will accommodate City festivals and a weekly farmers market, and provide a venue for other outdoor events; and increase opportunities for small, resident-serving retail/restaurants to remain or locate in the City, by allowing mixed-use developments. However, the reduction of commercial space would not provide as much space for retail, restaurant, and office uses as anticipated by the proposed project, and this alternative may not draw comparable volumes of customers, retailers, and office-workers to utilize the new development as considered in the proposed project.

3. Analysis of the Reduced Commercial Space Alternative

The potential impacts of the Reduced Commercial Space Alternative are described in the following section.

a. Land Use

Under the Reduced Commercial Space alternative, there would be a corresponding reduction in construction and a similar introduction of new land uses on the project site. The positive land use impacts of carrying out land use direction of Foster City would occur, but to a lesser degree than with the proposed project. Development under this alternative would require use of pile driving and other intensive construction equipment, and would likely have a similar construction schedule to the proposed project. Like the proposed project, this alternative could require construction activity that would exceed established noise policies designed to avoid or mitigate an environmental effect, and therefore it would likely result in the same impacts as the proposed project.

b. Transportation and Circulation

The Reduced Commercial Space alternative would result in 226 PM peak hour trips (95 less peak hour trips than the proposed project). This alternative would result in fewer commercial trips and the same number of residential trips. Like the proposed project, this alternative would not result in significant transportation or circulation impacts. Additionally, as discussed in Section V.B, Transportation and Circulation, the Reduced Commercial Space alternative would be more able to supply adequate parking to meet demand than the proposed project.

c. Air Quality

This alternative would contribute to an increase in emissions affecting air quality due to construction activities and long-term project operations; how-

ever, to a lesser extent than the proposed project. Under this alternative, there would be construction activities and an increase in vehicle trips as compared with existing conditions. The reduction in development assumed under this alternative would decrease the emissions effecting air quality; however, this alternative would likely result in the same impacts as the proposed project.

d. Noise

The Reduced Commercial Space alternative would result in noise impacts associated with the construction of the project, similar to the impacts that would be the result of the proposed project. The reduction in development may result in a slight decrease in construction activity; however, it is likely that use of similar construction equipment over a similar timeframe would be needed to implement development under this alternative. This alternative would likely result in the same significant unavoidable construction noise impact as the proposed project. This alternative would thus result in the same impacts as the proposed project.

e. Geology, Soils, and Seismicity

Under the Reduced Commercial Space alternative, the project site would still be susceptible to seismic ground shaking and differential compaction, as are identified under the proposed project. However, as a result of the reduced commercial and office space under this alternative, fewer customers and employees would be exposed to potential seismic ground shaking. As with the proposed project, potential significant impacts in this topical area would be reduced to a less-than-significant level with implementation of mitigation measures contained in Section V.E, Geology, Soils, and Seismicity.

f. Hydrology and Water Quality

The Reduced Commercial Space alternative would result in the construction of new structures, but to a lesser extent than the proposed project. This alternative would result in an increased amount of impervious surfaces and runoff over existing conditions that could affect stormwater conveyance systems or degradation of water quality in receiving waters. Dewatering would occur on the project site and construction workers and the public would be exposed to potential contaminants in the soil and groundwater. Hydrology and storm drainage effects would be similar, but less extensive, as compared with the proposed project. With implementation of mitigation measures provided in Chapter IV.F, Hydrology and Water Quality, impacts with this alternative would be reduced to a less-than-significant level.

g. Biological Resources

The Reduced Commercial Space alternative would result in the construction of new structures, but to a lesser extent than the proposed project. Like the proposed project, this alternative would result in impacts to biological resources that would be less than significant with mitigation.

h. Hazards and Hazardous Materials

Implementation of the Reduced Commercial Space alternative would result in the construction of development with similar uses with reduced development intensity. Construction would occur under this alternative and could expose construction workers or the public to hazardous materials from contaminants in the soil during and following construction activities, or expose workers or the public to airborne toxics, (e.g., lead-based paint and asbestos) during demolition of structures (i.e., the temporary structure used for storage). Implementation of the mitigation measures outlined in Section IV. H, Hazards and Public Safety, would reduce the potential impacts to a less-than-significant level.

i. Public Services, Utilities and Recreation

Due to fewer employees, the Reduced Commercial Space alternative would result in a somewhat reduced demand for utilities, police, and fire protection as compared with the proposed project. As with the proposed project, implementation of this alternative would result in less-than-significant impacts.

j. Aesthetics and Shade and Shadow

The Reduced Commercial Space alternative would result in a less intense development on the site, which could include reduced building heights in some buildings. Like the proposed project, this alternative would change the visual character of the site from vacant land to mixed use development, cast shadows on adjacent properties, and introduce new sources of light and glare; however, like the proposed project, this alternative would be subject to design review, and the mitigations recommended in Section V.J, Aesthetics and Shade and Shadow. As with the proposed project, implementation of this alternative would result in less-than-significant impacts.

k. Wind

Implementation of the Reduced Commercial Space alternative would result in the construction of development with similar uses with reduced development intensity and could reduce building heights of some buildings that include commercial space. Although building height can modify wind patterns, it is anticipated that the reduction in height associated with reducing commercial space, as anticipated under this alternative, would not change the impacts anticipated by the proposed project.

l. Global Climate Change

The Reduced Commercial Space alternative would result in similar energy demands during construction, but less demand during operation because of the reduction in commercial space. Therefore, it would generate slightly lower volumes of greenhouse gases than the proposed project, and with implementation of the mitigation measures identified for the proposed project, would result in less-than-significant impacts related to global climate change.

m. Cultural and Paleontological Resources

The Reduced Commercial Space alternative would have the same potential impacts as the proposed project. Mitigation measures included in Section V.M, Cultural and Paleontological Resources, would apply under this alternative and the impacts would be less-than-significant.

C. REDUCED DENSITY ALTERNATIVE

1. Principle Characteristics

The Reduced Density alternative assumes a reduction in residential units by 20 percent from the proposed project and a reduction in commercial space by 20 percent below the Reduced Commercial Space alternative. Development under this alternative would include 331 residential units and 24,000 square feet of commercial space.

2. Relationship with Project Objectives

The Reduced Density alternative would meet many of the project objectives. The alternative would develop City-owned property that is currently vacant, and it would provide housing, retail and office space, and cultural activities. This development would help to activate the city center; provide housing for seniors on-site, affording them access to city center amenities; enhance and connect to the existing neighborhood; establish a town square that will accommodate public events; and increase opportunities for small resident-serving retail and restaurants. However, the reduction of residential and commercial space would not provide as much senior housing or commercial space as anticipated by the proposed project. This alternative therefore may not create the volume of residents, customers, retailers, and office-workers that are desired to live in, work in, and utilize the new development.

3. Analysis of the Reduced Density Alternative

The potential impacts of the Reduced Density alternative are described in the following section.

a. Land Use

Under the Reduced Density alternative, a similar introduction of new land uses on the project site would occur as with the proposed project. The positive land use impacts of carrying out the land use direction of Foster City would occur, however to a lesser degree than would occur with the proposed project. The Reduced Density alternative would result in a corresponding reduction in construction; however, development under this alternative would require the use of intensive construction equipment, as with the proposed project. Development under the Reduced Density alternative would likely have a similar construction schedule to the proposed project. Like the proposed project, this alternative could require construction activity that would exceed established noise policies designed to avoid or mitigate an environmental effect. Therefore, the Reduced Density alternative would likely result in the same land use impacts as the proposed project.

b. Transportation and Circulation

The Reduced Density alternative would result in fewer PM peak hour trips than either the proposed project or the Reduced Commercial Space alternative. This alternative would result in both fewer commercial trips and fewer residential trips. Like the proposed project, this alternative would not result in significant transportation or circulation impacts. Additionally, like the Reduced Commercial Space alternative, this alternative would be more able to supply adequate parking to meet demand than the proposed project.

c. Air Quality

The Reduced Density alternative would contribute to an increase in emissions affecting air quality due to construction activities and long-term project operations; however, the increase in emissions would likely be to a lesser extent than the proposed project. This alternative would result in construction activities, as well as an increase in vehicle trips as compared with existing conditions. The reduction in development assumed in this alternative would decrease the emissions effecting air quality; however this alternative would likely result in the same impacts as the proposed project.

d. Noise

The Reduced Density alternative would result in noise impacts similar to those that would result from the proposed project, especially noise impacts associated with project construction. The reduction in total development could slightly decrease construction activity as compared with the proposed project; however, it is likely that similar construction equipment would be used over a similar timeframe to develop under this alternative. This alterna-

tive, therefore, would likely result in the same significant unavoidable construction noise impact as the proposed project.

e. Geology, Soils, and Seismicity

Under this alternative, the project site would remain susceptible to seismic ground shaking and differential compaction, which potential impacts are identified under the proposed project. However, the reduced residential, commercial, and office space under this alternative would result in fewer residents, customers, and employees being exposed to potential seismic ground shaking. Like the proposed project, potential significant impacts related to geology, soils, and seismicity would be reduced to a less-than-significant level with implementation of mitigation measures contained in Section V.E, Geology, Soils, and Seismicity.

f. Hydrology and Water Quality

The Reduced Density alternative would result in the construction of new structures on the project site but to a lesser extent than would occur under the proposed project. The alternative would increase the amount of impervious surfaces and runoff on the project site as compared with existing conditions, which could affect stormwater conveyance systems or degrade water quality in receiving waters. Dewatering would occur on the project site, and construction workers and the public would be exposed to potential soil and groundwater contaminants. Hydrology and storm drainage effects would be similar compared with the proposed project, though less extensive due to the reduced scale of development. With implementation of mitigation measures provided in Chapter IV.F, Hydrology and Water Quality, impacts related to hydrology and water quality would be reduced to a less-than-significant level in the Reduced Density alternative.

g. Biological Resources

Development under this alternative would result in construction of new structures, though to a lesser extent than under the proposed project. Like the proposed project, the Reduced Density alternative would result in impacts to biological resources that would be less than significant with mitigation.

h. Hazards and Hazardous Materials

The Reduced Density alternative would result in the construction of a new development with similar uses, as compared with the proposed project, though with reduced intensity. The alternative would result in construction, which could expose construction workers or the public to hazardous materials from contaminated soil during and after construction activities. These activities could also expose workers or the public to airborne toxics during the demolition of the existing temporary structure. However, implementation of

the mitigation measures described in Section IV.H, Hazards and Public Safety, would reduce the potential impacts to a less-than-significant level, and development under this alternative would have impacts similar to the proposed project.

i. Public Services, Utilities, and Recreation

This alternative would develop fewer residential units and less commercial space than the proposed project. Therefore, due to fewer residents and employees, the Reduced Density alternative would result in a somewhat reduced demand for utilities, police, and fire protection as compared with the proposed project. Like the proposed project, implementation of this alternative would result in less-than-significant impacts related to public services, utilities, and recreation.

j. Aesthetics and Shade and Shadow

Development of the project site under the Reduced Density alternative would be less intense than under the proposed project. This could include reduced building heights in some buildings. Because the site is currently vacant land, this alternative would, like the proposed project, change the visual character of the site to a mixed-use development. Development under this alternative would cast new shadows on adjacent properties and would introduce new sources of light and glare. However, like the proposed project, any development under this alternative would be subject to design review. With implementation of the mitigations recommended in Section V.J, Aesthetics and Shade and Shadow, this alternative would result in less-than-significant impacts related to aesthetics and shade and shadow.

k. Wind

The Reduced Density alternative would result in the construction of buildings with similar uses, as compared with the proposed project, but with reduced intensity of development that could reduce building heights. While building height can modify wind patterns, the reduction in building heights that could be associated with this alternative would not change the impacts anticipated by the proposed project.

l. Global Climate Change

This alternative would result in similar energy demands during construction, as compared with the proposed project, but would reduce demand during operation due to the reduction in residential units and commercial space. As a result, development under this alternative would generate slightly lower volumes of greenhouse gases than the proposed project. With implementation of the mitigation measures identified for the proposed project, this al-

ternative would result in less-than-significant impacts related to global climate change.

m. Cultural and Paleontological Resources

The Reduced Density alternative would have the same potential impacts related to cultural and paleontological resources as compared with the proposed project. With implementation of the mitigation measures recommended in Section V.M, Cultural and Paleontological Resources, development under this alternative would have less-than-significant impacts to cultural and paleontological resources.

D. ENVIRONMENTALLY-SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR. Of the three alternatives analyzed above, the No Project/No Build alternative is considered the environmentally superior alternative in the strict sense that the environmental impacts associated with its implementation would be the least of all the scenarios examined (including the proposed project). While this alternative would be environmentally superior in the technical sense that contribution to these aforementioned impacts would not occur, this alternative would not meet the project objectives, nor offer the public and community benefits identified, such as redevelopment of the vacant City-owned property with a vibrant mixed-use city center and town square for Foster City.

In cases where the No Project/No Build alternative is the environmentally superior alternative, CEQA requires that the second most environmentally superior alternative be identified. The Reduced Density alternative would be considered the second most environmentally superior alternative. Comparison of the environmental impacts associated with each alternative as described above, indicates the Reduced Density alternative would generally represent the next-best alternative in terms of reducing impacts. While implementation of the Reduced Density alternative would result in slightly reduced environmental impacts, this alternative would still result in the significant unavoidable impacts related to construction noise as the proposed project.

VII. CEQA REQUIRED ASSESSMENT CONCLUSIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the 15 Acres project: effects found not to be significant; growth-inducing impacts; unavoidable significant environmental impacts; significant irreversible changes; and cumulative impacts.

A. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings among representatives of the City of Foster City departments involved in project planning and review and consultants for the City were held to preliminarily determine the scope of the EIR. In addition to these meetings, a Notice of Preparation (NOP) was circulated on October 30, 2012, and a public scoping sessions was held in conjunction with the Planning Commission meeting on November 15, 2012. Written comments received on the NOP and public comments received during the scoping meetings were considered in the preparation of the final scope for this document and in the evaluation of the proposed project.

The environmental topics analyzed in Chapter V, Setting, Impacts, and Mitigation Measures, include those topics upon which the project was determined during the scoping phase to have a significant effect and which generated the greatest potential controversy. By contrast, the following topics were excluded from detailed discussion in the EIR because it was determined during the scoping phase that project impacts on these resource areas would not be significant: Agricultural Resources, Mineral Resources, and Population, Employment and Housing. A brief description of the why these topics were found not to be significant is provided below.

1. Agricultural Resources

The project site is currently undeveloped and is located in an urban area. No agricultural uses or farmland are present within or adjacent to the project site. The site soils are primarily Bay Mud which are not valuable for agricultural uses. As a result, impacts to agricultural resources would not be significant.

2. Mineral Resources

No known mineral resources are located within or near the project site, nor has mineral extraction activities taken place within or around the project site

during recent history. For these reasons, impacts to mineral resources would not be significant.

3. Population and Housing

As stated in Chapter V, Setting, Impacts, and Mitigation Measures, implementation of the proposed project would result in an estimated residential population increase of 553 people. As the last publicly-owned vacant site, this site is appropriate for taking on a large portion of the City's residential growth. The site was identified in the City's Housing Element as one of the two sites available to meet the Regional Housing Needs Allocation. Moreover, these residents would be seniors, who are less likely to work during peak hours and drive vehicles. According to the Association of Bay Area Governments (ABAG), the population of Foster City is expected to grow from 30,567 residents in 2010 to 33,000 residents in 2030, an increase of 2,433 residents.[1] The proposed project's associated increase in population would account for approximately 23 percent of this increase.

This residential growth is within the anticipated population growth for Foster City and so is not considered "substantial". Accordingly, implementation of the proposed project would not induce substantial population growth. Further, since the site is undeveloped the project will not displace substantial numbers of existing housing or people and, thereby, necessitate the construction of replacement housing elsewhere.

B. GROWTH-INDUCING IMPACTS

This section summarizes the project's growth-inducing impacts on the surrounding community. Consistent with section 1512b.2(d) of the CEQA Guidelines, a project is considered growth-inducing if it could directly or indirectly foster economic or population growth or the construction of additional housing. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped. Typically, redevelopment projects on infill sites that are surrounded by existing urban uses are not considered growth-inducing because redevelopment by itself usually does not facilitate development intensification on adjacent sites.

[1] Association of Bay Area Governments, 2009. *Building Momentum: Projections and Priorities 2009.*

The proposed project would add approximately 414 residential units and approximately 553 new senior residents. The proposed project might also result in indirect population growth, which could result from both the new construction-related jobs generated by the proposed project and the approximately 168 new jobs that would be created by the construction, staffing or management of the assisted and independent living units, affordable housing, office space, and retail/restaurant space. These jobs represent an increase of just one percent over the 17,200 jobs currently in Foster City.[2] Although the creation of these jobs could cause new employees to move to Foster City, the population growth resulting from these jobs would not be substantial relative to the population growth projected to occur in Foster City.

The proposed project would be developed on an infill site in an existing urbanized area in Foster City, and as such would not require the extension of utilities and roads into exurban areas, and would not directly or indirectly lead to the development of greenfield sites on the Peninsula. The project would bring expanded utilities infrastructure into an area where a level of infrastructure currently exists to support less intense uses. Infrastructure improvements would be limited to providing service to the project site.

The provision of additional senior housing in Foster City would allow more elderly residents to live in an existing urbanized area and could reduce development pressures on farmland and open space in the greater Bay Area. In addition, as a relatively dense, mixed-use development, the proposed project could help reduce adverse impacts to the environment associated with automobile use. Therefore, the population growth that would occur as a result of project implementation would not be considered substantial or adverse.

C. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

Implementation of the proposed project would result in two significant unavoidable impacts that could not be avoided by implementation of mitigation measures, or reduced to a less-than-significant level:

- LAND-1, Inconsistency with established City policies and standards designed to reduce noise impacts; and
- NOISE-2, Construction noise that exceeds established thresholds for more than one construction season.

[2] California Employment Development Department. Monthly Labor Force Data for Cities and Census Designated Places (CDP), Annual Average 2012 – Revised.

Noise generated by construction activities on the site would cause a substantial short-term temporary increase in noise levels at sensitive land uses including: the library, police, and fire buildings located to the northwest across Civic Center Drive; at the North Peninsula Jewish Campus (NPJC) located to the east across Balclutha Drive from the project site; and at the William E. Walker Recreation Center which houses the senior center across Shell Boulevard to the southwest of the project site. Noise from construction activity would exceed the acceptable threshold for more than one construction season. Accordingly, Land Use Impact 1 and Noise Impact 2 would be significant and unavoidable.

D. SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project could result in significant irreversible changes to the physical environment. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is discussed below.

1. Changes in Land Use which Commit Future Generations

Implementation of the proposed project would commit future generations to development on currently vacant land within Foster City. The proposed project would convert land originally reserved for public and specified public utility purposes to a mix of residential, retail/commercial, and recreational uses. This would establish a mix of residential and retail/commercial uses on the project site and would commit future generations to the uses included in the proposed project. This change in land use would require a General Plan Amendment that would re-designate the project site as Civic Center Mixed Use (a new designation). The new designation would allow flexibility for future redevelopment after the useful life of the proposed project.

2. Irreversible Damage from Environmental Accidents

No significant irreversible environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to implementation of the proposed project. Furthermore, compliance with federal, State and local regulations, of the City of Foster City, and the implementation of mitigation measures identified in Section V.H, Hazards and Hazardous Materials, would reduce to a less-than-significant level the possibility that hazardous substances within the project site could cause significant environmental damage.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes the use of non-renewable energy sources, conversion of agricultural lands, and loss of access to mining reserves. Because the site has not been used for mineral extraction, loss of access to any minerals that historically occurred on-site would not be considered significant. Implementation of the proposed project would require electricity, natural gas, and possibly other forms of energy. However, the scale of such consumption for the proposed uses would be typical for a residential and commercial infill development of this size. The proposed project would incorporate energy-conserving features, as required by the Uniform Building Code and the California Energy Code (Title 24, Part 6). The California Department of Energy estimates that Title 24 reduces energy consumption by 25 and 30 percent, compared to previous building standards for residential and non-residential construction, respectively.[3]

Construction of the project itself, including the use of steel and concrete, among other materials, would also consume nonrenewable resources. However, the buildings and infrastructure constructed as part of the proposed project are expected to be long-lasting and construction methods are expected to be efficient. Implementation of Mitigation Measure GCC-1 would ensure that construction and building materials are resource-efficient and utilize recycled materials, and that construction waste is reused or recycled, in order to reduce the consumption of nonrenewable resources.

Additionally, the placement of the project on a site within the center of Foster City near City services and easily accessible to transit and regional roadways would facilitate the increased use of public transit and reduce the overall vehicle miles traveled, further reducing non-renewable energy consumption associated with the single-occupant vehicles and total vehicle miles traveled. The project would not convert land used for prime agriculture to residential and public uses, as no agricultural uses or farmland are present within or adjacent to the project site.

E. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts.” Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively considerable. Per Section 15065(a)(3) of the CEQA Guidelines, “cumulatively considerable” means that the incremental ef-

[3] California Energy Commission, 2012 Accomplishments.

fects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

1. Methodology

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of the projections in an adopted planning document, or a combination of the two. This EIR bases its cumulative analysis on the development assumptions of past present and reasonably foreseeable projects used to generate the cumulative traffic scenario in Section V.B., Transportation and Circulation. These assumptions include: a full utilization of vacant buildings, development of approved but not yet constructed projects; development of projects currently under review (including Gilead and Chess Drive projects); and development that is proposed under the 15 Acres project.

2. Cumulative Effects of the Proposed Projects

The following analysis examines the cumulative effects of the proposed project. The potential cumulative effects of the proposed project are summarized below for each of the topics that are analyzed in Chapter V of the EIR.

a. Land Use

In terms of cumulative impacts, land use compatibility can be divided into short-term and long-term impacts. Short-term impacts occur during construction and primarily would affect existing sensitive land uses, such as hospitals, schools, and residential development near the construction site. These impacts include the noise and dust generated by grading and excavation activities and the use of heavy machinery, and the use of hazardous materials such as solvents. These specific impacts are discussed in greater detail in Sections V.C, Air Quality; V.D, Noise; and V.H, Hazards and Public Safety, of this EIR.

As analyzed throughout Section V.A, Land Use, the proposed project would not result in a significant land use impact by potentially physically dividing an established community; or by conflicting with adjacent or nearby land uses. However, as mentioned above, the project would conflict with applicable land use plans, policies or regulations related to construction noise, which were adopted for the purpose of avoiding or mitigating an environmental effect. This impact is temporary as it relates to construction-period noise. (The plan area is not located in or near an area guided by a habitat conservation plan or natural community conservation plan.) The proposed project would

develop a currently undeveloped site with approximately 414 senior housing units, 70,000 square feet of commercial retail/restaurant space, and 1.3 acres of public open space. The proposed project would introduce several new uses to the site by way of a General Plan Amendment that would re-designate the project site as Civic Center Mixed Use, and by way of rezoning to Commercial Mix/Planned Development/Senior Housing Overlay. These uses would be compatible with the existing surrounding development pattern, which includes a variety of residential, civic, commercial retail, and recreational uses. As such, operation of the proposed project would not result in long-term land use impacts. Thus, the proposed project, when considered along with the cumulative projects, would not have a cumulatively considerable contribution to a significant land use impact.

b. Transportation and Circulation

Section V.B, Transportation and Circulation, includes a detailed analysis of the cumulative conditions related to transportation. Implementation of the proposed project would not have a cumulatively considerable contribution to transportation impacts. Please refer to that discussion to cumulative transportation impacts for more detail.

c. Air Quality

As discussed in Section V.C, Air Quality, the project would have a less-than-significant impact on long-term air quality. Short-term construction-related impacts were identified along with appropriate measures to mitigate those impacts to less-than-significant. Under BAAQMD CEQA Guidelines, the contribution to a cumulative air quality impact at projects that have less-than-significant incremental impacts is not cumulatively considerable. The project would not conflict with regional clean air planning efforts, since the project would provide senior housing in an area that is served by transit and service amenities that would reduce single occupant vehicle trips. Implementation of the proposed project would not make a cumulatively considerable contribution to a significant air quality impact.

d. Noise

As discussed in Section V.D, Noise, implementation of the proposed project would not result in cumulative noise impacts. Cumulative noise analysis for the proposed project considers both short-term construction related noise and longer-term operational and traffic related noise. Noise generated by construction activities on the site would cause a significant impact resulting from a substantial temporary increase in noise levels at certain sensitive properties surrounding the project site. However, when considered along with other projects in the City that may undergo construction simultaneously (see Section V.B, Transportation, Circulation, and Parking), this construction

noise would not be cumulatively significant given the distance that these sites are located from one another.

Longer-term noise from cumulative development in the area would primarily occur from motor vehicle traffic. As concluded in Section V.D, Noise, substantial cumulative traffic noise increases are not anticipated along area roadways. The project's contribution to cumulative traffic noise is not cumulatively considerable. A comparison of cumulative plus project and cumulative no-project shows that traffic noise increases attributable to the proposed project would be less than 1 dBA L_{dn}. Thus, the project would not make a cumulatively considerable contribution to any significant noise impacts.

e. Geology, Soils, and Seismicity

As described in Section V.E, development of the project in conjunction with other past, present, and reasonably foreseeable future development would increase the number of individuals that could be exposed to regional seismic risks in the seismically active San Francisco Bay Area. However, this does not contribute to a cumulative impact because any residual impact remaining after implementation of required mitigation would be confined to the project site. In addition, new structures could be built on areas of man-made fill, unstable soil, expansive soil and/or corrosive soil. However, these impacts are also confined to the project site and would not contribute to a cumulative impact. The proposed project would not make a cumulatively considerable contribution to significant impacts related to geology.

f. Hydrology and Water Quality

As described in Section V.F, Hydrology and Water Quality, implementation of the proposed project would result in less-than-significant impacts related to an increase in impervious surface area and an increase in the amount of storm water runoff generated on the project sites. Construction and operational impacts to storm water that would result from implementation of the proposed project would be minimized through implementation of Stormwater Pollution Prevention Plans (SWPPPs). The runoff from the project site, in combination with other sites, could exceed the capacity of conveyance structures. The project applicant must incorporate design features and show the project's ability to contain and convey storm water on the project site. Other current, pending or foreseeable projects in Foster City would be required to undergo the same water quality maintenance measures, and would not result in cumulative adverse impacts to water quality.

g. Biological Resources

As described in Section V.G, Biological Resources, the project would result in impacts on biological or wetland resources on the site that would be less

than significant with mitigation. Other development projects would be subject to similar mitigation measures, therefore the project would not result in a cumulatively considerable effect on biological resources.

h. Hazards and Public Safety

As discussed in Section V.H, Hazards and Public Safety, upsets and accidents involving hazardous materials releases, transport, and use during construction activities could result in adverse effects to public health or the environment. Also, development of the project site could expose construction workers and/or the public to petroleum hydrocarbon compounds in the soil and groundwater, potentially causing adverse health effects. Cumulative projects within the vicinity may result in similar adverse effects. However, the implementation of standard mitigation measures regulating construction practices and the requirements for individual site assessments and abatement activities, where necessary, would ensure that hazardous materials releases occurring during construction periods do not combine to create a cumulatively considerable effect.

As with other residential developments within the Foster City, the project would contribute to an increase in the generation of household hazardous wastes in the City. Given the residential and commercial uses allowed for the proposed projects, it is unlikely that the project would involve the use or storage of large quantities of hazardous materials or waste. Impacts related to hazards would result from construction or operation of the proposed project would be less-than-significant. The project would not make a cumulatively considerable contribution to any significant hazards impact.

i. Public Services, Utilities and Recreation

As discussed in Section V.J, Public Services, Utilities and Recreation, the project would have less-than-significant impacts on public services, utilities and recreation. Development of the proposed project and cumulative projects would result in a cumulative increase in the demand on public services, parks, and recreation facilities. This cumulative increase could result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives. However, future development would occur pursuant to General Plan policies and mitigation measures that reduce the potential impact on services to less-than-significant levels (including payment of the City's development impact fees and school fees). As a result, implementation of the project together with the impact of planned and future development would not result in cumulatively considerable contributions to any significant public service impacts.

Implementation of the proposed project would increase the demand on utility providers and infrastructures in the project area. Demand for potable water could increase to a point that would exceed the capacity of the existing water delivery infrastructure. However, as described in Section V.I, Public Services, Utilities and Recreation, this impact could be mitigated to a less-than-significant level. This less-than-significant impact will not make a cumulatively considerable contribution to significant public services impact.

j. Aesthetics and Shade and Shadow

As described in Section V.J, Aesthetics and Shade and Shadow, the project would result in significant impacts related to potential increase of light and glare; however, these impacts would be reduced to a less-that-significant level with implementation of the recommended mitigation measures. Following implementation of the mitigation measures, the project would not make a cumulatively considerable contribution to any aesthetics-related impacts.

k. Wind

As described in Section V.K, Wind, the project would result in significant wind impacts; however, implementation of the mitigation measures would reduce the wind impacts to a less-that-significant level. With implementation of the recommended mitigation measures, the wind impacts would not contribute to a cumulatively considerable impact.

l. Global Climate Change

Climate change is a global environmental problem and inherently a cumulative impact. As indicated in Section V.I, Global Climate Change, greenhouse gas emissions will be generated by the proposed project in the short – and long-term, and could interfere with the greenhouse gas emissions reduction goals of Assembly Bill 32 or other State regulations; however, greenhouse gases generated by the proposed project would be reduced to a less-than-significant level within implementation of Mitigation Measure GCC-1. With implementation of the recommended mitigation measures, the project would not contribute to a cumulatively considerable impact in this regard.

m. Cultural and Paleontological Resources

As described in Section V.M, Cultural and Paleontological Resources, the project would result in significant impacts related to project construction; however, these impacts would be reduced to a less-that-significant level with implementation of the recommended mitigation measures. Following implementation of the mitigation measures, the project would not make a cumulatively considerable contribution to any cultural resources-related impacts.

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