### **Ascension Heights Subdivision Project**

Prepared for: County of San Mateo Planning and Building Department 455 County Center, 2<sup>nd</sup> Floor Redwood City, CA 94063



**Prepared by:** CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research

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### ASCENSION HEIGHTS SUBDIVISON PROJECT DRAFT **ENVIRONMENTAL IMPACT REPORT**

Prepared for:

County of San Mateo Planning and Building Department 455 County Center, 2<sup>nd</sup> Floor Redwood City, CA 94063

Prepared by:

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### A. INTRODUCTION TO THE DRAFT EIR

The subject of this Draft Environmental Impact Report (DEIR) is the proposed Ascension Heights Subdivision Project ("proposed project"). A detailed description of the proposed project is contained in Section III (Project Description) of this report.

Because the proposed project will require approval of certain discretionary actions by the County of San Mateo (the "County"), the proposed project is subject to the California Environmental Quality Act (CEQA), for which the County is the designated Lead Agency. The County Planning and Building Department administers the process by which environmental documents for private projects are prepared and reviewed. On the basis of these procedures, it was determined that the proposed project may have a significant effect on the environment, and that an Environmental Impact Report (EIR) should be prepared.

As described in Section 15121(a) and 15362 of the CEQA Guidelines, an EIR is an informational document that will inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to a project. The purpose of this EIR, therefore, is to focus the discussion on those potential effects on the environment of the proposed project which the lead agency has determined are or may be significant. In addition, feasible mitigation measures are recommended, when applicable, that could reduce significant impacts to insignificant levels.

This EIR was prepared in accordance with Section 15151 of the CEQA Guidelines which defines the standards for EIR adequacy:

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR would summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.

### **B.** ENVIRONMENTAL REVIEW PROCESS

Pursuant to CEQA Guidelines §15063, an Initial Study was prepared for the proposed project, which concluded that the proposed project could result in potentially significant environmental impacts, and an EIR would be required. A Notice of Preparation (NOP) of an EIR for the proposed project was prepared and circulated to the State Clearinghouse and interested agencies and persons on October 10, 2003 for a 30-day review period. A copy of the Initial Study and NOP is included in Appendix A of this DEIR. Additionally, the County conducted a public scoping meeting on December 4, 2003 to allow interested parties, organizations and members of the public to present their views concerning the scope of the EIR.

Comment letters submitted to the County in response to the NOP, as well as comments from the public scoping meeting are included in Appendix B of this DEIR.

The DEIR will be circulated for review and comment by the public and other interested parties, agencies, and organizations for 45 days. A public hearing on the EIR may be held during the 45-day review period, and public hearings on the proposed project will be held after the review period and the preparation of the Final EIR (FEIR). Notice of the time and location will be published prior to the public hearing date. All comments or questions about the DEIR should be addressed to:

County of San Mateo, Planning and Building Department Attn: James A. Castañeda, Project Planner 455 County Center, 2nd Floor (PLN122) Redwood City, CA 94063-1662

Following public review, a FEIR will be prepared in response to comments received during the public review period. The FEIR will be available for public review prior to its certification by the County.

### C. ORGANIZATION OF THE DRAFT EIR

This DEIR is organized into seven sections as follows:

<u>Section I (Introduction)</u>: This section provides an introduction to the DEIR, briefly describes the environmental review process, and describes the organization of the DEIR.

<u>Section II (Summary)</u>: This section provides a summary of the project description; lists the environmental issues that are addressed in the DEIR; summarizes the alternatives to the proposed project; lists the areas of known controversy based on issues raised in responses received during the NOP process; and summarizes the environmental impacts and mitigation measures.

<u>Section III (Project Description)</u>: The project description includes an overview of the study area's environmental setting including a description of existing and surrounding land uses and a list of related projects proposed in the project area, and a complete description of the proposed project including: project location, project characteristics, project objectives, and required discretionary actions.

<u>Section IV (Environmental Impact Analysis)</u>: This section is the primary focus of this DEIR. Each environmental issue contains a discussion of existing conditions for the project area, an assessment and discussion of the significance of impacts associated with the proposed project, proposed mitigation measures, cumulative impacts, and level of impact significance after mitigation.

<u>Section V (General Impact Categories)</u>: This section provides a description of the environmental impacts that were found to be less than significant and therefore were not analyzed in detail in the DEIR, a summary of significant and unavoidable impacts, a discussion of the potential growth inducement of the proposed project, and a discussion of the significant irreversible changes to the environment.

<u>Section VI (Alternatives to the Proposed Project)</u>: This section includes an analysis of a range of reasonable alternatives to the proposed project. The range of alternatives selected is based on their ability to feasibly attain most of the basic objectives of the project and that would avoid or substantially lessen any of the significant effects of the project.

<u>Section VII (Preparers of the EIR and Persons Consulted)</u>: This section presents a list of County and other agencies and consultant team members that contributed to the preparation of the DEIR.

### II. SUMMARY

### A. INTRODUCTION

The purpose of this Summary is to provide the reader with a clear and simple description of the Ascension Heights Subdivision project ("proposed project") and its potential environmental impacts. Section 15123 of the CEQA Guidelines requires that the summary identify each significant effect and recommended mitigation measures and alternatives that would minimize or avoid potential significant impacts. The summary is also required to identify areas of controversy known to the Lead Agency (San Mateo County), including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate significant effects. This section focuses on the major areas of the proposed project that are important to decision-makers and uses non-technical language to promote understanding.

### B. SUMMARY OF THE PROPOSED PROJECT

The project site is located at the eastern corner of Bel Aire Road and Ascension Drive, within the unincorporated San Mateo Highlands area of San Mateo County (refer to Figures III-1 and III-3). The site is surrounded by single-family homes, including: the Baywood Park neighborhood located to the northeast; the Enchanted Hills neighborhood to the southeast and southwest; and the Starlite Heights neighborhood to the northwest. The College of San Mateo is located less than 0.25 miles northeast of the project site off of Parrott Drive.

The project applicant proposes to subdivide six legal parcels, which make up the project site, into 25 single-family lots. The lots would be located on both sides of a new 32-foot wide private main access road. Lot sizes would range from 10,120 square feet to 17,590 square feet (see Figure III-12). Each lot would be developed with one single-family house.

The proposed project includes approximately 98,102 square feet (approximately 17 percent of the total project site) of on-site private roadways, including the main access road (Lot "C" or "private street"), the Emergency Vehicle Access (EVA) road and the new water tank access road. The new private main access road would provide one access point, for both ingress and egress, at the northern end of the property. The EVA road would be constructed within the southeastern portion of the site, which would connect the proposed private main access road to an egress point on Ascension Drive. Further, the existing access road for the water tank and cell site (site is not part of the proposed project; refer to Figure III-3 and Figure III-12) would be abandoned and a new access road would be provided to the site via the proposed on-site private main access road. In addition to the proposed 25 single-family homes, the proposed project open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation area, trails and a tot lot. The tot lot and trails would be available for use by the general public.

Additionally, new utility lines (i.e., associated with the water supply, wastewater and storm drain systems) would need to be installed to accommodate the proposed project. All appropriate utility-related easements would be provided within the proposed on-site development.

Further, 2,821 square feet east of the tank and cell site would be dedicated to California Water Service Company (Cal Water; owner of the water tank).

### C. TOPICS OF KNOWN CONCERN

Based on a review of environmental issues by the County of San Mateo, this Draft EIR (DEIR) analyzes the following environmental impact areas:

- Aesthetics
- Air Quality
- Biological Resources
- Geology & Soils
- Hydrology and Water Quality
- Land Use & Planning
- Noise
- Public Services
  - Police
  - Fire Protection
  - Schools & Libraries
  - Recreation/Parks
- Transportation/Traffic
- Utilities & Service Systems
  - Sewer
  - Water
  - Solid Waste

### D. SUMMARY OF ALTERNATIVES TO THE PROPOSED PROJECT

This DEIR considers a range of alternatives to the proposed project to provide informed decision-making in accordance with Section 15126(d) of the CEQA Guidelines. The alternatives analyzed in this DEIR include: Alternative A (No Project/No Build); Alternative B (City of San Mateo Zoning (R1-B District)); Alternative C (Large-Lot); and Alternative D (15-Lot). For further discussion of these alternatives, refer to Section VI (Alternatives to the Proposed Project) of this DEIR. Based on the analysis in Section VI, Alternative C (Large Lot) was selected as the environmentally superior alternative.

### E. AREAS OF CONTROVERSY

Section 15123 of the CEQA Guidelines requires an EIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public, and issues to be resolved. Concerns raised at the public scoping meeting and in letters submitted to the San Mateo County Planning and Building Department in response to the Notice of Preparation (NOP) include the following:

- Health impacts during grading and hauling of soil off-site;
- Visual impacts;
- Slope stability impacts (on- and off-site);
- Traffic, parking, and access (project and cumulative impacts);
- Hydrology and water quality;
- Cumulative impacts;
- Public and private services impacts;
- Noise impacts;
- Air quality impacts;
- Mitigation measures to reduce impacts;
- Reasonable project alternatives;
- Impacts to utilities; and
- Biological resources impacts.

### F. ISSUES TO BE RESOLVED

This DEIR concludes that the proposed project would result in significant and unavoidable environmental impacts related to the following:

- Temporary construction emissions associated with grading; and
- Temporary noise increases associated with grading and soil haul trucks.

If the County decides to approve the proposed project, the County must prepare and adopt a Statement of Overriding Considerations for the significant and unavoidable environmental impacts identified above. However, the County may also decide to approve one of the development alternatives to the proposed project, which have been specifically crafted to eliminate or avoid the significant impacts of the proposed project. Such a decision can be based on the information contained in this DEIR and other factors not related to the CEQA process (i.e., fiscal viability of the project, planning goals of the County, etc.).

### G. SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table II-1 summarizes the various environmental impacts and mitigation measures associated with the construction and operation of the proposed project. Mitigation measures are included and required for

significant environmental impacts, as well as recommended for various less-than-significant impacts to further reduce any adverse impacts. The level of impact significance after mitigation is also identified in the table below.

County of San Mateo

June 2009

# Table II-1 Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
AESTHETICS		
Impact AES-1: Substantially Damage Scenic Resources, Including, but not Limited to Trees, Rock Outcroppings, or Historic Buildings within a State Scenic Highway	Mitigation Measure AES-1	
The proposed project would result in a significant aesthetics impact if it would substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a State Scenic Highway. The project site is located approximately 0.8 miles from I-280, which is an officially-designated State Scenic Highway from Santa Clara which is an officially-designated State Scenic Highway from Santa Clara county to the northern city limits of the City of San Bruno. There are no rock outcroppings or historical structures located within the project site. Portions of the project site are visible from three County-designated scenic roads, including Polhemus Road, I-280 (from San Francisco to San Bruno), and SR 92 (Half Moon Bay Road and J. Arthur Young Freeway), and one State-designated scenic road, I-280 (from Santa Clara County to the northern City of San Bruno city limits). Additionally, of the County-designated important natural landscapes and attractive man-made development features provided in the General Plan, two are located on portions of the project site and include unique vegetative communities (i.e., large trees) and natural scenery in an urban setting. Implementation of the proposed project would result in considerable grading of the site, removal of the existing drainage structure and trees and sensitive vegetation communities (i.e., Coast Live Oak Woodland), repair of areas of erosion and, the development of 25 single-family homes with associated on-site roadways (main private road and EVA road) and landscaping on the project site. The removal of oak woodland represents a loss of approximately 85 percent of the total 3.3 acres of this community on the site. Mitigation thas been included in the DEIR to reduce inneats to a	<ul> <li>In addition to the required site Conservation Easements, Tree Replacement Program and Tree Mitigation and Monitoring Plan (refer to Section IV.C. Biological Resources; Mitigation Measures BIO-2a, 2b and 2c), off-site visual impacts shall be considered during the development of the designated Tree Replacement Program and Tree Mitigation and Monitoring Plan, where landscaping shall be designed by the Applicant's arborist in coordination with the County Community Development Director to buffer on-site development (i.e., residential and roadway uses), as well as to assist with screening of the light and glare of the proposed lights from off-site surrounding viewsheds. Depending on the time of day and year, the new non-deciduous trees could result in temporary shadows in the immediate downhill project vicinity as the trees and vegetation mature.</li> <li>To the extent feasible, trees and shrubs shall be selected to aid in the screening of structures from off-site. Native landscaping species shall be used in the landscaping plan. However, non-native, fast growing trees and shrubs could be used within building areas to promote interim screening.</li> <li>To the extent possible, environmental conditions shall be maintained to ustain native species. Particular attention shall be given to utilize veric landscaping and to retain or plant native landscape buffers at key visual access points.</li> </ul>	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
less-than-significant level, including Conservation Easements, Tree Mitigation and Monitoring Plan and Tree Replacement Program. Post-project conditions would be noticeable from portions of the County- and State-designated roadways provided above. However, the segment distance in which the project site and proposed development is visible from these roadways would be relatively short and would provide views of development similar to existing single-family residential uses surrounding the site. Views of the project site from the roadway segments constitute a very small portion of the field of view and would not affect the overall value of the views from the roadways. The final project design would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes and land the designated acconstructed to be compatible with or contribute to the appearance and visual character of the surrounding area. Further, much of the lower elevation of some grading to reduce erosion. Through portions of the site with her active urban development" and would contribute to the secnic roadways, specifically from Polhenus Road. As such, although portions of the site with natural scenery would be removed, these areas would be replaced with "attractive urban development". Overall, for the reasons stated above, the project would not have a substantial adverse effect on scenic resources. Thus, project impacts on	common areas anticipated to be landscaped shall be submitted for County review, prior to approval of the Final Map.	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact AES-3: Create a New Source of Substantial Light or Glare which would Adversely Affect Day or Nighttime Views in the Area	Mitigation Measure AES-3	
A significant impact may occur if a project introduces new sources of light or glare on the project site, which would be incompatible with the areas surrounding the project site or which pose a safety hazard, such as to motorists utilizing adjacent streets. There are currently no sources of light and glare on the project site as the project site is almost entirely undeveloped. Some increase in the illumination of the site would be unavoidable from the proposed project development. The proposed development would introduce evening light to the site through interior and exterior illumination of structures, associated light from buildings and vehicles would create an additional source of glare. Although the majority of illumination from this development would be directly visible by the surrounding adjacent developments, indirect views of a subtle glow from various off-site distant surrounding locations would be directly visible by the surrounding adjacent developments, indirect views of a subtle glow from various off-site distant surrounding locations would be interctly visible by the surrounding adjacent developments, indirect views of a subtle glow from various off-site distant surrounding locations would be directly visible by the surrounding adjacent developments, indirect views of a subtle glow from various off-site distant surrounding locations would be similar to the sources that already exist in the project area. Excessive illumination would be avoided and lighting would be shielded and placed so as to prevent glare and reflection or intrusion onto neighboring properties. The introduction of additional light and glare from the new development would be noticeable to viewers in the surrounding area, particularly by residents in the neighborhoods immediately surrounding the site and people driving along Ascension Drive and Bel Aire Road. Because much of the proposed development is situated on the upper elevations of the site, new light and glare sources would also be visible from distant roadways such as SR 92	<ul> <li>Reflective glass or other glaring materials shall be discouraged. The exterior of the proposed building shall be constructed of non-reflective materials such as, but not limited to: high-performance tinted non-reflective glass, metal panel, and pre-cast concrete or cast in-place or fabricated wall surfaces. The proposed materials will be reviewed and approved by the Community Development Director prior to approval of the Final Map.</li> <li>Where streetlights or outdoor area lighting is proposed, the lighting shall be of a low-intensity variety. Residential lighting would be kept to a minimum to meet safety standards, reduce light and glare. Lighting paths, entranceways, and outdoor living areas shall be directed downward to reduce nuisance to adjacent properties. Selection of specific lighting standards for the development would be based on minimizing ambient light.</li> <li>In addition to Mitigation Measure AES-1, tree planting shall be required along the internal roadways and within the project site where effective at softening the effects of light and glare from cars and structures.</li> </ul>	Less than Significant

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Level of Significance After Mitigation				Significant and Unavoidable
Mitigation Measures			Mitigation Measure AQ-1	<ul> <li><i>Construction Phase</i></li> <li>Under BAAQMD CEQA Guidelines, implementation of the mitigation measures listed below is required during demolition, grading, and construction of the proposed project. These mitigation measures shall be implemented for all areas (both on-site and off-site) where construction activities would occur.</li> <li>1. Sprinkle water all active construction areas at least twice daily and more often when conditions warrant.</li> <li>2. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.</li> <li>3. Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.</li> <li>4. Sweep daily all paved access roads, parking areas, and staging areas at construction sites.</li> </ul>
Environmental Impact	The final project design would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes, as well as Bel Aire Lighting District standards, and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes, roadways streetlights, and associated lighting plans would be designed and constructed to be compatible with the surrounding area. Therefore, project impacts related to light and glare would be <i>less than significant</i> . Although impacts would be less than significant, mitigation is recommended to further reduce any adverse impacts.	AIR QUALITY	Impact AQ-1: Construction/Demolition Emissions	Emissions from the various phases of construction can vary considerably depending on the specific activities taking place, level of activity, soil conditions, and weather. Other sources of construction-related emissions include exhaust emissions from gasoline or diesel powered construction equipment, solvents in construction materials, and gases emitted from asphalt for a short period of time after paving occurs. At this time, the standard BAAQMD control measures have not been incorporated into the project, nor has the project applicant acknowledged that these measures would be implemented. Although the project's construction-related emissions could be temporary in duration, in the absence of control measures, construction-related emissions could be substantial. Project impacts on air quality during grading would be significant. Because the project would exceed the PM <sub>10</sub> and NO <sub>x</sub> BAAQMD operational thresholds during the grading period, short-term project impacts on air quality during construction would remain significant and

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
unavoidable.	<ol> <li>Sweep streets daily if visible soil material is carried onto adjacent public streets.</li> <li>Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas.</li> <li>Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).</li> </ol>	
	<ol> <li>Limit traffic speeds on unpaved roads to 15 miles per hour.</li> <li>Install sandbags or other erosion control measures to prevent silt runoff to public roadways.</li> <li>Replant vegetation in disturbed areas as quickly as possible.</li> <li>Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.</li> </ol>	
	<ul> <li>12. Suspend grading activities when winds exceed 25 miles per hour and visible dust clouds cannot be prevented from extending beyond active construction areas. Given wind conditions at the site, winds exceeding 25 miles per hour can be expected from time to time, so periods of suspended construction activity can be expected.</li> <li>13. Limit the area subject to excavation, grading and other</li> </ul>	
	<i>Grading Equipment Exhaust Mitigations</i> <i>Grading Equipment Exhaust Mitigations</i> Construction equipment generates diesel exhaust, which is a known TAC that poses both a health and nuisance impact to nearby receptors. NO <sub>x</sub> from equipment exhaust contributes to regional O <sub>3</sub> formation. Though not required under the BAAQMD CEQA Guidelines, the control measures listed below should be implemented during the grading phase of the project	Significant and Unavoidable

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	to minimize diesel TAC and NO <sub>x</sub> emissions.	
	1. Opacity is often an excellent indicator of exhaust particulate emissions from off-road diesel powered equipment. The project	
	shall ensure that emissions from all construction diesel powered	
	equipment used on the project site do not exceed 40 percent onacity for more than three minutes in any one hour Any	
	equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately.	
	2. Where possible, to control TACs and PM <sub>10</sub> , use reformulated or	
	alternative diesel fuels. For equipment with engines built in 1994	
	or later, consider using bou or B100 rule, (su percent or 100 percent biodiesel fuel). B100 reduces TAC emissions by	
	approximately 80 percent to 90 percent. In pre-1994 engines, use	
	B-20 tuel, (a mixture of 20 percent biodiesel and 80 percent fossil	
	CARB low-sulfur fuel (less than 15 ppmw). Other fuels include	
	synthetic diesel fuel and aqueous diesel fuel.	
	3. If a certified unit is available for an individual piece of equipment,	
	the contractor shall utilize an oxidation catalyst or catalytic	
	particulate filter on all diesel powered equipment rated above 50	
	horsepower. These systems require CARB low-sultur diesel fuel.	
	Commercial tossil diesel tuel is available with near-zero sultur	
	levels. Biodiesel is also CARB certified as low-sultur (near-zero	
	4. Where possible, the contractor shall use Purinox additive or	
	equivalent. Depending on equipment, this reduces emissions of both NO <sub>x</sub> and PM <sub>10</sub> by 20 percent to 40 percent.	
	5 The contractor chall install temporary electrical carvice whenever	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	<ul> <li>possible to avoid need for independently powered equipment (e.g., compressors).</li> <li>6. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were on-site.</li> <li>7. Properly tune and maintain equipment for low emissions.</li> <li>8. The County shall designate a Disturbance Coordinator responsible for ensuring that mitigation measures to reduce air quality impacts from construction are properly implemented. The Disturbance Coordinator shall be responsible for notifying adjacent land uses of construction activities and schedule and shall provide a written list of the aforementioned dust control measures. The list shall identify a contact person that will respond to any complaints. A log shall be kept of all complaints and the actions taken to remedy any valid complaint as well as the response period.</li> </ul>	
BIOLOGICAL RESOURCES		
Impact BIO-1: Have a Substantial Adverse Effect, either Directly or through Habitat Modifications, on any Species Identified as a Candidate, Sensitive, or Special-Status Species	Mitigation Measure B10-1	
<i>Special-Status Plant Species</i> The Non-Native Annual Grassland within the project site has a low to medium potential to support three special-status plants that typically bloom in early spring (February to April): caper-fruited tropidocarpum, Hillsborough chocolate lily, and fragrant fritillary. Because these species were not yet identifiable during surveys conducted in mid May 2003 and	<i>Mitigation Measure BIO-la</i> To avoid substantial adverse affects to special-status plants as a result of project construction, a focused survey shall be conducted in late February or March to determine the presence or absence of special-status plants within the project site. The surveys shall be conducted by a qualified biologist and will follow survey protocols acknowledged by the CNPS.	Less than Significant
Ascension Heights Subdivision Project Draft Environmental Impact Report		II. Summary Page II-11

Level of Significance After Mitigation	sses ield sgy; and eral with i of the the the ired, and site ing, site the the the the the the the the the t
Mitigation Measures	CDFG, and USFWS. A qualified biologist is an individual who possesses the following qualifications: (1) experience conducting floristic field surveys; (2) knowledge of plant taxonomy and plant community ecology; (3) familiarity with the plants of the area, including rare, threatened, and endangered species; (4) familiarity with the appropriate state and federal statutes related to plants and plant collecting; and (5) experience with analyzing impacts of development on native plant species communities. Following the completion of the surveys, a survey results report shall be prepared and provided to the County. This report shall be a condition of project approvals and shall include, but shall not be limited to, the following: (1) a description of the survey methods; (2) a discussion of the survey results; and (3) a map showing the development area and the location of any special-status plants encountered. If no special-status plants are encountered in the development area, no further mitigation would be required, unless additional measures are required by the resource and regulatory agencies as a condition of their permit approvals. However, if special-status plant species are encountered, a Mitigation would be required, by the qualified biologist and shall include measures such as revising the proposed development plans to allow for avoidance and protection of the on-site population, providing permanent protection of an existing on- or off-site population will be avoided, and figation at a 2:1 acreage ratio, or transplanting the individuals (or, if annuals, collecting and storing seeds) to permanent protection of the population for avoidance and protection if the population will be avoided, and following project construction if the population will be avoided, and following project construction if the population will be avoided, including a mechanism to ensure permanent protection of the population from development (e.g., conservation easement) and/or, if applicable, measures in the anaism to ensure permanent pr
Environmental Impact	late June 2008, their presence or absence on-site has not yet been confirmed, and therefore the project has the potential to affect these species if present. If populations of these species are present, vegetation clearing and grubbing, grading, and construction could adversely affect the population(s), resulting in a <i>potentially significant</i> impact.

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	population on- or off-site.	
Special-Status Wildlife Species	Mitigation Measure BIO-Ib	Less than Significant
<u>Invertebrates</u> A small population (15 to 20 plants) of one of the larvae host plants (summer lupine) for the endangered Mission blue butterfly (MBB) was found in one location on the steep west facing slope above Ascension Drive. In addition, one of the food plants (blue dicks) for the adult MBB was found throughout the site. A site survey was conducted at a time of the year the adult MBBs would be out and flying, although none were observed during the survey. However, according to the USFWS, the presence of the WBB is assumed if the larvae host plants are found and if the project site is within the range of the butterfly. Development components of the proposed project may result in the removal of a few individual larvae host plants associated with the MBB. The proposed plant palete that would be used to landscape this area has not yet been identified; however, the project applicant has indicated that native vegetation would be utilized. As such, it is possible that the project construction. However, according to the USFWS, removal of the existing population of lupine would constitute a <i>potentially significant</i> impact to the MBB.	<ul> <li>The project applicant shall redesign the portion of the proposed project that would be developed in proximity to the existing population of summer lupine to avoid removal of the plant species. Prior to finalizing project site plans, the Applicant shall provide a detailed map of summer lupine occurrences within the project site. This map will be reviewed in order to determine if any changes to the project design are necessary to avoid removal of the butterfly host plant. Such changes to be considered shall include, but are limited to, any one or combination of the following:</li> <li>Move all or a portion of the southwestern lot lines for Lots 22 and 23 to not include the summer lupine.</li> <li>Relocate the proposed drainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location that would avoid removal of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location that would avoid removal of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location of the summer lupine.</li> <li>Relocate the proposed trainage infrastructure that would cross through the location that would avoid removal of the summer lupine.</li> <li>Relocate the proposed Emergency Vehicle Access (EVA) road to avoid removal of the summer lupine.</li> <li>The project applicant shall include MBB larval host plant species of lupine in the conservation esement on the projec</li></ul>	

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Level of Significance After Mitigation		Less than Significant
Mitigation Measures	possible that USFWS will need to issue an incidental take authorization and/or require additional mitigation such as a financial contribution to an existing habitat conservation plan for the MBB, placing a conservation easement over preserved portions of the project site where the lupine is being avoided, or some other conservation plan to protect the viability of the species and its habitat.	<ul> <li><i>Mitigation Measure BIO-1c</i></li> <li>To avoid impacting nesting birds and/or raptors, <u>one</u> of the following must be implemented:</li> <li>Conduct vegetation removal and other ground disturbance activities associated with construction during September through March, when birds are not nesting;</li> <li>OR</li> <li>Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season. A qualified wildlife biologist shall conduct a pre-construction raptor survey no more than 30 days prior to initiation of grading to provide confirmation on presence or absence of active nests in the vicinity (at least 300 feet around the project site). If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the CDFG and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 25 feet is required by CDFG for songbird nests, and 200 to 500 feet for raptor nests, depending on the species and location. The perimeter of the nests setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel restricted from</li> </ul>
Environmental Impact		<u>Birds</u> Two special-status bird species have a "medium" potential to nest on-site, including Coopers hawk and white-tailed kite; in addition, several non special-status migratory species have a medium potential to nest in trees and shrubs on and adjacent to the project site. Bird nests with eggs or young are protected under the MBTA and the California Fish and Game Code. Construction activities including vegetation removal, noise and vibration have a potential to result in direct (i.e., death or physical harm) and indirect (i.e., nest abandonment) impacts to nesting birds; these impacts would be considered <i>potentially significant</i> .

Level of Significance After Mitigation	0.5	Less than Significant		Less than Significant
Mitigation Measures	the area. A survey report by the qualified biologist verifying that the young have fledged shall be submitted to the County prior to initiation of grading in the nest-setback zone.	<i>Mittigation Measure BIO-Id</i> To avoid impacting breeding or hibernating bats, tree and snag removal shall occur in September and October, after the bat breeding season and before the bat hibernation season. If snag and tree removal is to take place outside of this time frame, a pre-construction bat survey shall be conducted. If no roosting bats are found during the survey, no further mitigation would be required. If bats are detected, a 50-foot buffer exclusion zone shall be established around each occupied snag or tree until the roosting activities have ceased.	Mitigation Measure BIO-2	<i>Mitigation Measure BIO-2a</i> Prior to project implementation, the project Applicant shall retain a certified arborist or other qualified professional (approved by the County of San Mateo) to prepare an application for a Significant and/or Heritage Tree Removal Permit. The arborist shall verify and update tree survey data collected in August 2003 in order to confirm the accuracy of tree's size (circumference), tree health, and other pertinent data collected within the project site. Based on the updated tree survey data and an overlay of current project elevelopment plans on the map of existing trees for the project site, the Applicant's arborist shall provide a map and census of trees to be removed by the proposed project that will accompany the tree removal application. The Applicant's arborist shall also prepare a Tree Replacement Plan and determine the appropriate tree replacement ratio in coordination
Environmental Impact		<u>Mammals</u> Potentially suitable roost habitat is present for two special-status bat species (pallid bat and fringed myotis) on the project site and includes any mature (greater than 25-inch DBH) tree stand and any large snags or felled trees. Removal of roost habitat during the bat hibernation or maternity season has potential to result in harm, death, displacement and/or disruption of bats and/or nursery colony roosts; this impact would be <i>potentially significant</i> .	Impact BIO-2: Have a Substantial Adverse Effect on any Riparian Habitat or other Sensitive Natural Community	<i>Tree Removal</i> The proposed project would result in the removal of 37 trees. All of the large pine trees on the project site would remain in place. The tree report determined that the 37 trees proposed to be removed did not qualify to be Heritage Trees as defined by the County of San Mateo Heritage Tree Ordinance. As such, implementation of the proposed project would not result in direct impacts to heritage trees. However, some of these trees may be defined as Significant Trees, as the circumference of several trees may exceed 38 inches; impacts to these trees from the proposed development due to removal or damage may be considered a <b><i>potentially significant</i></b> impact.

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	with the County Community Development Director.	
Indirect Effects to Preserved Trees	Mitigation Measure BIO-2b	Less than Significant
It is possible that remaining Significant or Heritage trees on the project site and the County-protected trees located outside of the project boundaries, but within proximity to the limits of grading, could sustain detrimental	Prior to commencement of construction activities, a certified arborist or other County-approved professional shall review the final project plans to determine the potential for damage to occur to any trees that are not	
could affect these remaining trees could include, but are not limited to, the	proposed for removal. If the aroonst determines that any submittant and/or Heritage tree would be adversely affected by the project either through	
compaction of soil around a tree, the severing of roots during trenching of utility lines, the placement of fill or cut slopes at the base of a tree,	immediate damage or through damage that affects the long-term health of the tree eventually causing disease or death, the project applicant shall	
inappropriate trimming of limbs to allow equipment access, accidental	replace these identified trees on or near the project site in compliance with	
damage to a tree by heavy equipment or by felling other trees, or improper landscape management. Any of these activities could result in the eventual	the County's tree replacement requirements; the appropriate tree replacement ratio will be determined in coordination with the County	
loss of a tree over time. Thus, the project's potential indirect impacts to	Community Development Director. The following measures shall be implemented to avoid and/or minimize for notential indirect impacts to	
brown war and a brown as high war.	preserved trees before, during, and following construction activities.	
	Pre-Construction	
	• <u>Fencing</u> : Protective fencing at least 3 feet high with signs and flagging	
	shall be erected around all preserved trees located adjacent to memory variation clearing and muching arging or other	
	construction activities. The protective fence shall be installed at a	
	minimum of 5 feet beyond the tree canopy dripline. The intent of	
	protection fencing is to prevent inadvertent limb/vegetation damage,	
	root damage and/or compaction by construction equipment. The	
	protective tencing shall be depicted on all construction plans and maps	
	provided to contractors and labered creatly to promote the year included placement of the fence in the field shall be approved by a qualified	
	biologist prior to initiation of construction activities. The contractor	
	shall maintain the fence to keep it upright, taut and aligned at all	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	times. Fencing shall be removed only after all construction activities are completed.	
	• <u>Pre-Construction Meeting</u> : A pre-construction meeting shall be held between all site contractors and a registered consulting arborist and/or a qualified biologist. All site contractors and their employees shall provide written acknowledgement of their receiving sensitive natural	
	community protection training. This training shall include, but shall not be limited to, the following information: (1) the location and marking of protected sensitive natural communities; (2) the necessity	
	of preventing damage to these sensitive natural communities; and (3) a discussion of work practices that shall accomplish the purpose of mitigation measures.	
	During Construction	
	• <u>Fence Monitoring</u> : The protective fence shall be monitored weekly during construction activities to ensure that the fencing remains intact and functional, and that no encroachment has occurred into the protected natural community; any repairs to the fence or encroachment correction shall be conducted immediately.	
	• Equipment Operation and Storage: Contractors shall avoid using heavy equipment around the sensitive natural communities. Operating heavy machinery around the root zones of trees would increase soil compaction, which decreases soil aeration and, subsequently, reduces	
	water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the protected zones, unless where specifically approved in writing and under the supervision of a registered consulting arborist and/or a qualified biologist.	
	<u>Materials Storage and Disposal</u> : Contractors shall not store or discard any construction materials within the fenced protected zones, and shall	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	remove all foreign debris within these areas. However, the contractors shall leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrient supply. In addition, contractors shall avoid draining or leakage of equipment fluids near retained trees. Fluids such as pasoline discel oils bydraulics brake and	
	transmission fluids, paint, paint thinners, outs, nyuratures, oraxe and transmission fluids, paint, paint thinners, and glycol (anti-freeze) shall be disposed of properly. The contractors shall ensure that equipment be parked at least 50 feet, and that equipment/vehicle refueling occur at least 100 feet, from fenced tree protection zones to avoid the possibility of leakage of equipment fluids into the soil.	
	• <u>Grade Changes</u> : Contractors shall ensure that grade changes, including adding fill, shall not be permitted within the fenced protected zone without special written authorization and under supervision by a registered consulting arborist and/or a qualified biologist. Lowering the grade within the fenced protected zones could	
	necessitate cutting main support and feeder roots, thus jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade could compact the soil further, and decrease both water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the	
	fenced protected zone shall not create conditions that allow water to pond.	
	• Irrencting: Except where spectricarly approved in writing beforehand, all trenching shall be outside of the fenced tree protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is	
	necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	impacts. A registered consulting arborist shall ensure that all pruning cuts shall be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may ultimately result in tree mortality. Use of both root pruning and Air-Spade equipment shall be accompanied only by hand tools to remove soil from trench locations. The trench shall be made no deeper than necessary.	Househitz
	• <u>Erosion Control</u> : Appropriate erosion control best management practices (BMPs) shall be implemented to protect preserved protected trees during and after project construction. Erosion control materials shall be certified as weed free.	
	• <u>Inspection</u> : A registered consulting arborist shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the project. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the registered consulting arborist following each inspection.	
	<ul> <li><u>Post-Construction</u></li> <li><u>Mulch</u>: The contractors shall ensure that the natural duff layer under all trees adjacent to construction activities shall be maintained. This would stabilize soil temperatures in root zones, conserve soil moisture, and reduce erosion. The contractors shall ensure that the mulch be kept clear of the trunk base to avoid creating conditions</li> </ul>	
	pathogens. Should it be necessary to add organic mulch beneath retained oak trees, packaged or commercial oak leaf mulch shall not be used as it may contain root fungus. Also, the use of redwood chips shall be avoided as certain inhibitive chemicals may be present in the	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	<ul> <li>wood. Other wood chips and crushed walnut shells can be used, but the best mulch that provides a source of nutrients for the tree is its own leaf litter. Any added organic mulch added by the contractors shall be applied to a maximum depth of 4 inches where possible.</li> <li><u>Watering Adjacent Plant Material</u>: All installed landscaping plants near the protected tree zones shall require moderate to low levels of water. The surrounding plants shall be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet, nor should drainage allow ponding of water. Irrigation spray shall not hit the trunk of any tree. The contractors shall maintain a 30-inch dry-zone around all tree. The contractors shall maintain a 30-inch dry-zone around all tree trunks. An above ground pop-up sprays.</li> <li><u>Monitoring</u>: A registered consulting arborist shall inspect the trees provide micro-spray irrigation system shall be used in lieu of typical underground pop-up sprays.</li> <li><u>Monitoring</u>: A registered consulting arborist shall inspect the trees preserved on the site adjacent to construction activities for a period of two years following the completion of construction. Monitoring visits shall be completed quarterly, totaling eight visits. Following each monitoring visit, a report summarizing site conditions, observations, tree health, and recommendations for promoting tree health, shall be unded any tree dying during the two-year monitoring visit. County. Additionally, any tree mortality shall be replaced at a minimum 2:1 ratio on-site in coordination with the County.</li> </ul>	
Loss of Oak Woodland Community The proposed project construction has potential to adversely affect oak woodlands, which are considered sensitive natural communities under the PRC §21083.4. The proposed project would result in the removal of	<i>Mitigation Measure BIO-2c</i> Mitigation for the approximately 2.8 acres of Coast Live Oak Woodland that would be removed by project construction shall be accomplished through <u>one</u> or <u>a combination of</u> the following mitigation options:	Less than Significant

Level of Significance After Mitigation	hia be it tat. tat. it be eas seas st, vey try by by the by the by the the the the the the the the the the
Mitigation Measures	<ul> <li>Establish Oak Woodland Conservation Easement: Under California PRC §21083.4, mitigation for conversion of oak woodlands can be accomplished, in part, by conserving existing oak woodlands can be accomplished, in part, by conserving existing oak woodland habitat. For every acre of oak woodland type shall be protected off-site in perpetuity through a conservation easement or fee title dedication, to be approved by the County and CDFG, and implemented prior to project construction. The easement or fee title dedication, to be approved by the County and CDFG, and implemented prior to project construction. The easement or agreement would be protected under a permanent conservation easement or fee title dedication, to be approved by the County and CDFG, and implemented prior to project construction. The easement or agreement would be protected under a permanent conservation easement or agreement would be protected to project construction. The easement or agreement would be protected to protect the habitat, shall include a baseline report documenting the existing habitat conditions (i.e., a tree survey conducted by a registered professional forester or a certified arborish), shall include a habitat monitoring plan, shall include a habitat monitoring plan, shall include a noak woodland education program for project residents, shall designate the party responsible for all actions related to management and maintenance, and shall specify limitations and restrictions on land use (i.e., access, fencing, grazing, tree planting or pruning, response to catastrophic events such as woodlands can be accomplished, in part, by planting an appropriate number of trees, including maintaining the planting and replacing dead or diseased trees. Mitigation for conversion of oak woodlands can be accomplished, in part, by planting and replacing dead or diseased trees. Mitigation for conversion of oak woodlands can be accomplished, in part, by planting an appropriate number of trees, including maintaining the planting an appropria</li></ul>
Environmental Impact	approximately 2.8 acres of Coast Live Oak Woodland. The removal of this oak woodland represents a loss of approximately 85 percent of the total 3.3 acres of this community on the site. This is a substantial loss of oak woodland and is considered to be a <i>potentially significant</i> impact.

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	County Community Development Director (refer to Mitigation Measure BIO-2a). As part of the proposed project, conservation areas will be set aside that to accommodate replacement tree plantings.	
	These areas will be protected under a permanent conservation easement or fee title dedication, to be approved by the County and	
	or agreement shall specify that the oak woodland habitat is to remain in perpetuity, and shall specify the land management and maintenance	
	practices designed to protect the habitat. It shall also specify limitations and restrictions on land use (i.e., access, fencing, grazing,	
	tree planting or pruning, response to catastrophic events such as wildfire or pest invasion).	
	A Tree Mitigation and Monitoring Plan will be prepared by an arborist or other County-annioved professional showing the species size	
	spacing and location of plantings and the location and species of	
	County. The mitigation oaks shall be maintained for a period of no	
	less than seven years from the date of planting, and replaced if	
	be required for the first five years following planting; the trees should	
	be able to survive without irrigation for the last two years of the seven-vear maintenance period. During the seven-vear maintenance	
	period, dead or dying trees shall be replaced with trees of the same	
	species and size in order to achieve an 80 percent survival rate at the	
	achieved at the end of the seven-year period, all dead or dying trees at that time shall be replaced.	
	The Tree Mitigation and Monitoring Plan shall identify who is resnonsible for maintaining and replacing trees during the	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	maintenance period. The property owner or other party responsible for maintaining the replacement trees shall submit an annual report to	
	the County on or before July 1st of each year documenting the	
	condition of the trees and identifying which trees have been replaced or will need to be replaced. An agreement to maintain the	
	replacement trees in accordance with the Tree Mitigation and	
	Monitoring Plan shall be signed by the owner of the property on which the trees are located and by any other party who has been	
	designated as responsible for maintaining the replacement trees and by	
	the applicant if the trees are planted off the project site, and a security	
	shall be provided to the County in an amount sufficient for the County	
	to maintain and potentially replace the trees for a seven-year period if	
	of a letter of credit, certificate of deposit or other security as approved	
	by the County. The amount of the security shall be determined by an	
	estimate from a professional landscaper submitted by the property	
	owner or the applicant for the cost of maintaining the trees and	
	potentially replacing them over the seven-year maintenance period	
	pus 10 percent to auminister said maintenance and use repracement contract or in an amount established by the County after professional	
	consultation. During the seven-year maintenance period, if the	
	responsible party fails to maintain the replacement trees as required	
	herein, the County shall be authorized to use the security to fund	
	replacing dead or dying trees or maintenance of the trees. At the end	
	of the seven-year maintenance program, the certified arborist shall	
	conduct an inspection of the replacement trees. If the required 80	
	percent survival rate has not been achieved, all dead or dying trees	
	shall be replaced and any funds remaining in the security shall be forfeited If the remined 80 nercent survival rate has been achieved	

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II. Summary Page II-23

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Table II-1 (Continued)	ry of Environmental Impacts and Mitigation Measures
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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	any funds remaining in the security shall be released. <b>Contribute to Oak Woodlands Conservation Funding:</b> Contribute a fee to the California Wildlife Conservation Board's Oak Woodlands Conservation Fund or other mitigation fund established by the County using the following formula: [Fee = 1.0 x acres of impacted oak woodland x current land value]. All contributions to the state Oak Woodlands Conservation Fund or other mitigation fund shall specify that these moneys will be used to purchase mitigation oak woodlands in the County. An administration fee equal to 10 percent of the mitigation fee shall also be required to cover the County's costs associated with this option. The in-lieu fee shall be prorated for the development plans and collected at the time of project approval. The determination of appropriate fund contribution shall be approved by the County and CDFG, and shall be contributed, prior to the initiation of project construction.	
GEOLOGY/SOILS		
Impact GEO-2: Landslides & Soil Instabilities	Mitigation Measure GEO-2	
<i>Deep-Seated Landslide Hazards</i> It is expected that small localized areas of weak rock or sheared matrix material within the melange could be present at the project site. If slopes are not properly graded during site development, they could be subject to deep-seated failure where the localized "weak zones" extend beneath the sandstone. This concern is particularly relevant for the neighboring residences along the northeast project site boundary. The slope was previously cut steeply to create level back yards and proposed site grading includes placing fill in proximity to the cut slope. Therefore, project impacts related to deep-seated landslides would be <i>significant</i> .	• The applicant shall retain a qualified engineering geologist to observe all excavations for evidence of weak zones, adverse bedding and joints, within bedrock. Weak zones can be identified by: (1) adversely oriented bedding, joints or shears, or (2) the presence of sheared clayey material typical of the melange matrix. Any weak zones shall be evaluated to determine whether they present a potential zone for future landsliding based on planned final site grades and appropriate mitigation shall be included. Additionally, such zones shall be protected from groundwater derived from infiltrating rainfall, irrigation, and leaking pipes by installing appropriate subdrains and	Less than Significant

Environmental Impact		Mitigation Measures	Level of Significance After Mitigation
Shallow Landslide Hazards	slo	sloping surface grades.	
M&A concluded that a primary geotechnical consideration to increase the factor of safety with respect to shallow slope stability would involve the	• Wł	Where new fill slopes are planned on residential lots, the applicant shall retain a qualified engineering geologist to perform settlement	
proposed repair of existing erosional features and improvement of drainage	anc	and slope stability analyses to evaluate the static and seismic	
In these areas. It is anticipated that the proposed grading would remove most if not all of the remaining areas of active soil creep. Considering that	per pot	performance of the proposed sloped fill. Where encountered, the potential hazard posed by these conditions shall be evaluated from a	
relatively steep slope inclinations are planned for the new development, the	sta	standpoint of temporary and permanent slope stability. Also, the	
project site could become susceptible to debris-flow type failures. Unexpected changes in drainage from the proposed site development could	eng	engineering geologist shall provide technical input and review surface and subsurface drainage plans and specifications for compliance with	
result in concentrated storm water runoff onto the project site slopes. This	the	the geologist's recommendations.	
runoff would have the potential to trigger debris-flow type landslides that could endanger neighboring streets and properties. Additionally, localized	• All	All unnecessary fill utilized during site grading shall be removed off-	
minor "sliver" fills associated with the remnant construction roads could	SILE	site atter construction activities are completed.	
also be susceptible to creep and/or failure. Therefore, project impacts	•	The applicant shall retain a qualified engineering geologist to provide	
related to shallow landslide hazards would be <i>significant</i> .	Clec	tecnnical input and review of the surface and subsurface drainage	
Temporary Cut Slopes	Sys	systems for the purpose of reducing the potential for adverse impacts, such as shallow and deen-seated landslides, on and adjacent to site.	
It is conceivable that adverse bedding and/or joints would be encountered at	C	Common design issues that may required technical input include: (1)	
one or more locations at the project site. Any adverse bedding that exists	the	the location of surface and subsurface drainage alignments, especially	
would increase the potential for landsliding. The presence of adverse	wit	within filled slopes, (2) selection of water discharge locations, (3)	
bedding and joints would be primarily a concern during construction when them temporary outs into rook may expose unstable clabs or wedges of	sep	separation of surface and subsurface water collection pipes, (4)	
bedrock. Therefore, project impacts related to slope instabilities due to		location of pipe cleanouts, and (5) recommendations for controlling proundwater flow through trench backfill.	
adverse bedding in temporary cut slopes would be significant.	e E	The site storm water drainage system (including individual systems	
Hazards to Adjacent Properties	for	for each residence) shall include redundancies to prevent discharge of	
It should be recognized that while the project site bedrock conditions are	nne	uncontrolled runoff onto the site slopes in the event one or more	
2	COI	components of the storm water system becomes clogged or otherwise	
condutons beneath the neignooring properties are unitkely to be as favorable. Although, the project would include the removal/repair of the	pra gra	incapacitated. Concentrated fundit shall not be allowed to 110% over graded slopes or over areas of thick soil, colluvium or fill.	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
existing drainage systems, as well as the development of an on-site storm drain system, it is possible that if runoff from the project site is not properly managed, the project could contribute surface and groundwater to the neighboring slopes, potentially resulting in slope and soil instabilities. Therefore, project impacts related to hazards to adjacent properties would be <i>significant</i> . Overall, the project site is subject to geologic and soil instabilities. Without proper soil conditioning, site preparation, subsurface drainage, and foundation design, the structures and infrastructure at the project site could sustain substantial damage. Project impacts related to geologic and soil instabilities would be <i>significant</i> .		
Impact GEO-3: Soil Erosion or Loss of Topsoil	Mitigation Measure GEO-3	
According to the NRCS Soil Survey, the soil conditions at the project site have high to very high potential for soil erosion. Without proper implementation of erosion control measures during construction and operation of the project, the project site could sustain substantial soil erosion and loss of topsoil. The proposed storm drain system would consist of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters. The proposed on-site pipeline system would include two separate storm drain pipelines that would be installed within the northern and southern portions of the site. Each individual lot would also have its own separate retention systems and eroded slopes on the site. Hence, the project would reduce the potential for erosion over the existing condition. Further, although the landscaping of the common areas/conservation areas is not determined at this time, the intent is to	<ul> <li>One or more of the following methods shall be incorporated into the final site grading plan, subject to approval by the County Community Development Director: <ul> <li>Excavate and remove materials affected by erosion in areas where the topography allows a cut to daylight at acceptable inclinations.</li> <li>Excavate a key at the base of the slope or resistant rock in the erosion area. Rebuild the slope with compacted, drained, engineered fill over a geogrid to allow for slope reconstruction at a steep inclination.</li> <li>Construct structural retaining walls or terrace walls in the erosion areas. A wall can be constructed at the top of the eroded area and then trim the erosional features away from below the wall.</li> </ul> </li> <li>Additionally, all of the following measures shall be implemented: including all slopes shall be hydroseeded.</li> </ul>	Less than Significant

Level of Significance After Mitigation	i he on Tol Tol ind iil	tition Less than Significant ian- ian- ian- ian- inity initita i i i i i i i i i i i i i i i i i
Mitigation Measures	• The project geotechnical consultant shall be involved in reviewing the final grading and drainage plans, as well as perform construction observation services during grading to ensure that erosion control mitigation measures are performed. Based on the results of design-level investigations, more aggressive permanent erosion control measures shall be evaluated to minimize surface runoff velocities and erosion potential. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared with the grading plans to fulfill regulatory requirements.	Although the abovementioned mitigation measures (i.e., Mitigation Measures GEO-2 and GEO-3) would reduce project impacts to <i>less-than-significant</i> levels, the following additional mitigation measure is recommended to further ensure that the proposed project remains in compliance with the abovementioned measures. <i>Mitigation Measure GEO-4</i> To ensure the applicant's geotechnical consultant are given the opportunity to participate in the final design and construction phases of the project, the applicant's consultant (Registered Geotechnical Engineer and Registered Engineering Geologist) shall review and approve the final grading, drainage, and foundation plans and specifications. Also, upon completion of construction scutters, the applicant's consultant site provide a final statement indicating whether the work was performed in accordance with project plans and found to issuance of applicant's recommendations. Allo, upon completion of construction shall brovide a final statement indicating whether the work was performed in accordance with project plans and found to issuance of applicable permits and approved by the County prior to issuance of applicable permits and approved by the County prior to issuance of applicable permits and
Environmental Impact	utilize drought-tolerant native vegetation in order to restore the area to a natural habitat, which would reduce the potential for erosion to occur over the lifetime of the project. However, without mitigation, project impacts related to soil erosion or loss of topsoil would be <i>significant</i> .	

ct     Level of Significance       After Mitigation		andards, Waste Discharge Mitigation Measure HYDRO-1	charges water that does not Although all construction-related and operational water quality impacts <i>Less Than Significant</i> gulate surface water quality would be less than significant the following mitigation measure is included. The accordance with the State of California's General Permit for construction Activities (General Permit) the applicant shall prepare a altive as governed by the SWPPP. The SWPPP shall comply with the requirements of the General Permit for construction and demolition are demonstron for information regarding BMPs for both the water quality standards or incorporated into the construction documents. The SWPPP would provide specific information regarding BMPs for both the construction and demolition are construction. Activities (Source As part of the coverage under the General Permit the applicant would file a NOI with the SWRCB within 30 days prior to the start of construction. Interaction and regulatory impacts on water quality timpets on water quality impacts on water quality impacts on the start of construction.
Environmental Impact	HYDROLOGY & WATER QUALITY	Impact HYDRO-1: Violate Water Quality Standards, Waste Discharge M Requirements or Degrade Water Quality	

Level of Significance After Mitigation			t Less Than Significant t
Mitigation Measures		Mitigation Measure HYDR0-4	<ul> <li>The project applicant shall replace the existing 15-inch pipe that crosses Ascension Drive and Enchanted Way with a new 21-inch storm drain pipe; and</li> <li>The project applicant shall replace the existing 30-inch outfall that crosses Polhemus Road with a 36-inch pipe sloped at 2 percent.</li> </ul>
Environmental Impact	in wet-season storm runoff from housing and roadway areas, parking areas, and in dry-season "nuisance flows" from landscape irrigation. Dry product spills could enter the storm drain via runoff in wet weather conditions or dry-season "nuisance flows." Prior to obtaining a grading permit, the project applicant would be required to submit a SWPPP. The SWPPP would detail the treatment measures and BMPs to control pollutants and an erosion control plan that outlines erosion and sediment control measures that would be implemented during the post- construction phases of project development, and would set forth the BMP monitoring and maintenance schedule and responsible entities during the post-construction phases. Because the RWQCB would enforce compliance with the SWPPP, project operation impacts related to water quality would be <i>less than significant</i> .	Impact HYDRO-4: Create or Contribute Runoff Water Which Would Exceed the Capacity of Existing or Planned Storm Drain Systems	By increasing the amount of impervious area, development of the proposed homes and roadways would increase the volume and peak rate of surface runoff at the project site. The proposed on-site drainage has adequate capacity to accommodate a 10-year storm event. Hence, the proposed storm drain system would be designed to be capable of accommodating 10- year runoff. However for CEQA analysis, the generally accepted threshold for impact analysis is a 100-year return period. Under existing conditions the 100-year discharge to Polhemus Creek would be 73 cfs with a velocity of 14.9 feet per second (fps) at the outfall. Capacity in the existing County storm drain system would be exceeded at two locations. The total estimated flow in excess of pipe capacity is 28 cfs. The applicant proposes to upsize these two storm drain segments, from 15-inch diameter to 21-inch diameter and from 30-inch diameter to 36-inch diameter, as mitigation.

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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Once the proposed project is developed, the 100-year discharge to Polhemus Creek would be 72 cfs with a velocity of 10.2 fps at the outfall. Improved storm drain capacity would be exceeded at one location labeled "P-C9", but only by 0.5 cfs. The total estimated flow in excess of pipe capacity would drop from 28 cfs to almost zero. (It may be noted that by upsizing the existing 18-inch storm drain at this location to a 21-inch storm drain, estimated flow would not exceed storm drain capacity.) Very high flow velocities are predicted for both the 10-year and 100-year events, so precautions to protect against pipe damage and scour at the Polhemus Creek outfall should be incorporated as part of the final design. Overall, project impacts related to exceedance of storm drain capacity would be <i>potentially significant</i> .		
NOISE		
Impact NOISE-1: Temporary Increases in Noise (Construction Noise)	Mitigation Measure NOISE-1	
<i>On-Site Construction</i> Noise generated during construction would differ depending on the construction phase and the type and amount of equipment used at the construction site. The U.S. EPA has compiled data related to the noise- generating characteristics of specific types of construction equipment and noise levels that can be achieved with implementation of feasible control measures. Noise levels generated by heavy equipment can range from approximately 76 dB(A) to 89 dB(A) when measured at 50 feet and 70 dB(A) to 83 dB(A) when measured at 100 feet, without implementation of noise reduction measures. Typically, the noisiest pieces of equipment used during similar construction projects include jackhammers and pavers, which produce noise levels of approximately 75 and 80 dB(A) at 50 feet with implementation of the required feasible noise reduction control measures.	<ol> <li>The following measures shall be required to limit construction and S related activities to the time of the day when the number of persons in the adjacent residential uses would be lowest:         <ul> <li>a. Construction activity shall be limited to the hours of 8:00 AM and 4:30 PM Monday through Friday.</li> <li>b. No machinery shall be cleaned past 6:00 PM or serviced past 6:45 PM, Monday through Friday.</li> <li>c. To minimize impacts to traffic and public safety, it is recommended that truck traffic for soil export from the project site be limited to between the hours of 10:00 AM and 3:00 PM.</li> <li>d. No construction shall be allowed on Sundays and holidays or without permission from the County.</li> </ul> </li> </ol>	Significant and Unavoidable

Environmental Impact		Mitigation Measures	Level of Significance After Mitigation
As with all construction equipment, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dB(A) per doubling of distance.	5.	Feasible noise controls to minimize equipment noise impacts on nearby sensitive receptors shall be implemented. Feasible noise controls include improved mufflers, use of intake silencers, ducts,	
Site grading and home construction on the northeast portion of the site may take place as close as 50 feet from the rear of the existing residences		engine enclosures, and acoustically-attenuating shields or shrouds. Equipment used for project construction shall be hydraulically or	
from the construction activities at 200 feet or more from the proposed home pads. When site work activities are occurring near the residences adjacent		elecurcally powered impact tools (e.g., jack nammers) wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools. Where use of pneumatically-powered	
to the site, specifically along the edges of the site, daytime levels can be expected to significantly exceed existing noise levels. As construction proceeds to the interior of the site noise levels at these residences will		tools is unavoidable, an exhaust muttler on the compressed air exhaust shall be used. A muftler could lower noise levels from the exhaust by up to about 10 dB(A). External jackets on the tools themselves shall	
diminish. Noise produced by construction activities would be audible and exceed the measurement average existing noise levels by 3 dB(A) or more during the entire construction period at nearby residences. Therefore,		be used where feasible; this could achieve a reduction of 5 dB(A). Quieter procedures shall be used (such as drilling rather than impact equipment) wherever feasible.	
construction activities on the project site would result in a substantial temporary and periodical increase in noise levels at adjacent land uses, constituting a <i>significant</i> impact.	4	Construction equipment with internal combustion engines shall not be allowed to idle unnecessarily. All equipment should be turned off when not in use.	
<i>Off-Site Haul Trips</i> It is estimated that approximately 69 soil haul truck trips per day for approximately a maximum of 44 days (approximately 3,036 truck round trips for soil export) would be needed to complete the proposed project site	5.	All stationary noise-generating construction equipment, such as air compressors, shall be located as far as practical from existing nearby residences and other noise-sensitive land uses. Such stationary equipment shall be acoustically-shielded.	
grading. SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road are recommended in order to minimize the number of residential streets used by trucks. Trucks shall not utilize	6.	Heavy equipment, such as paving and grading equipment, shall be stored on-site whenever possible to minimize the need for extra heavy truck trip on local, residential, streets.	
Ascension Drive because of the existing traffic level and the steep grade. The typical noise levels generated by slow moving heavy duty trucks with and without implementation of control measures would be expected to range from 75 to 82 dB(A) and 69 to 76 dB(A) at a typical residential façade setback from the roadway centerline of 50 feet and 100 feet,	7.	The project applicant shall notify all residents within a 2,000-foot radius of the project of the projects estimated construction schedule. This notification shall include a description of the types of construction activities and their approximate duration.	

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Table II-1 (Continue	Summary of Environmental Impacts and Mitigation Measures
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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
respectively. If the number of haul trucks per hour leaving the site are considered to be relatively constant over the 44-day material removal period, then the average hourly noise levels at the residential facades along the haul routes would increase from current noise levels in the high 40 to low 50 dB(A) range to the mid to high 60 dB(A) range with and without implementation of control measures on haul trucks. Based on this analysis, noise produced by the soil haul trucks trips associated with project's construction period would cause average noise levels at land uses along the haul route to increase by more than 3 dB(A), producing a noticeable, but intermittent noise impact during the period of site grading requiring soil export. Noise generated along the soil haul truck route on local, residential roads during the projects construction period would construction period would construction period solution for the soil haul truck route on local residential short-term noise impact.	8. A "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise, shall be designated. This individual would most likely be the contractor or a contractor's representative. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.), if one is made, and shall require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and shall include it in the notice sent to neighbors regarding the construction schedule.	
PUBLIC SERVICES		
Impact PS-2: Fire Services	Mitigation Measure PS-2	
Implementation of the proposed project could result in an increased need for fire protection services during both the short-term construction phase and long-term operational phase. <i>Construction</i> <i>Construction</i> Construction of the proposed project would increase the potential for accidental on-site fires from sources such as the operation of mechanical equipment and use of flammable construction materials. Construction accidental proving construction traffic to the street network and potentially requiring partial lane closures during street improvements and utility installations. However, construction of the proposed project	<i>Mitigation Measure PS-2a</i> Flagmen shall be utilized to facilitate the traffic flow until construction is complete, specifically if there are partial closures to streets surrounding the project site.	Less than Significant

County of San Mateo

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
extent that there would be a need for new, expanded, consolidated, or relocated fire facilities, in order to maintain acceptable service ratios, response times, or other performance objectives set by the JPA. Therefore, impacts associated with fire protection during construction would be <i>less than significant</i> and no mitigation measures are required.		
<i>Operation</i> Implementation of the proposed project would increase the demand for fire protection services in the project area. The project would demand fire protection services for 25 single-family homes from the San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE. The proposed project would result in a total increase in permanent population of approximately 69 persons. The San Mateo City Fire Department or County of San Mateo Fire Department/CALFIRE do not plan to develop any new fire stations or make improvements to the staff/equipment levels of existing stations in the service area of the proposed project, nor would implementation of the proposed project require the San Mateo City Fire Department to construct new facilities or expand existing facilities to accommodate increased demand for fire protection services. The majority of associated street segments would have a 32-foot wide existing facilities to accommodate increased demand for fire protection services. The majority of associated street segments would have a 22-foot wide proved street surface and Lots 7 and 17, would include a 22-foot wide street surface from curb-to-curb, with gutters where appropriate. No parking would be developed along this segment of the street. However, per Mitigation Measure TRANS-3, given the grades and curves, the 32-foot width is inadequate to allow parking on both sides. Therefore, parking shall	<ul> <li><i>Mitigation Measure PS-2b</i></li> <li>The project applicant shall submit building plans and plot plans to the County, San Mateo City Fire Department, and County of San Mateo Fire Department/CALFIRE to provide appropriate fire hazard management recommendations for inclusion as project conditions of approval. Recommendations may include, but not be limited to, the following:</li> <li>Pro-active fire prevention measures pertaining to property maintenance, vegetation management, and building construction using non-combustible materials in accordance with the Wildland Urban Interface Building Standards, to be evaluated by the County upon submittal of detailed building plans; and</li> <li>The San Mateo City Fire Department recommends that all homes have fire sprinkler systems and hydrants with 4.5" x 2.5" outlets spaced at 300 feet, with roads a minimum of 26 feet wide. These specifications shall be included in building plans and confirmed by the County Building Department.</li> <li><i>Mitigation Measure PS-2c</i></li> <li>Prior to the issuance of grading permits, the County shall review the project's phasing plans to determine when the EVA road shall be included in the corresponding Final Map</li> </ul>	Less than Significant
only be allowed on one side of the road within 32-foot width road	improvement plans, as reviewed by the County. In addition, the EVA road shall be designed to adhere to County and County of San Mateo Fire	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	<ul> <li>Department/CALFIRE standards/guidelines, as shown below:</li> <li>Parking shall be restricted to one side where the project road is less than 30 feet.</li> <li>A driveway with a hammerhead/T turnaround to serve Lot 11 (flag lot) shall be provided. The top of the "T" shall be 70 feet in length.</li> </ul>	
Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road. For the various 20 percent grade segments within the main access road (unbroken grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE Fire Marshal has stated that this is not acceptable for	<ul> <li>Alternatively, a 20-foot wide driveway with a hammerhead/T turnaround to serve both Lot 10 and Lot 11 (flag lots) shall be provided. The top of the "T" shall be 70 feet in length.</li> <li>The San Mateo County Fire Department/CALFIRE shall require a plan and profile of the all roads within the project, including the primary and secondary access roads and all roads clead end driveways</li> </ul>	
primu, access roads, nowever, we bepartnent would allow uns grade pending receipt of a finalized plan for all proposed roadway infrastructures. In addition, as discussed above, the project site is located within a Community at Risk zone according to the County's Fire Threatened Communities Map and the project site can be susceptible to wildland fires.	<ul> <li>At building permit submittal, San Mateo County Fire Department/CALFIRE shall require a report of findings justifying the greater than 15 percent slope throughout the project as specified by</li> </ul>	
Therefore, impacts associated with fire protection during operation would be <i>potentially significant</i> . <b>TRANSPORTATION/TRAFFIC</b>	County Ordinance and a request for exemption.	
Impact TRANS-3: Site Access and On-Site Circulation	Mitigation Measure TRANS-3	
<i>Site Access</i> Access to the site would be provided via the new private main access road connecting to Bel Aire Road. Emergency vehicle access to the project would be provided via the new private main access road, as well as the new EVA road, which would connect to Ascension Drive.	The new private main access road is planned to be 32 feet in width in most areas and 22 feet in width at the east side of the project. Given the grades and curves, this width is inadequate to allow parking on both sides. Therefore, parking shall be allowed on one side of the road along all 32-foot segments. Additionally, parking shall not be allowed on the 22-foot wide section.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Number of Access Points The access into the project by emergency vehicles is considered adequate; therefore, this impact would be <i>less than significant</i> and no mitigation measures are required. Width/Grade of Access Points The EVA roadway would include the following features: a 20-foot wide street surface; a vehicle turn-out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of approximately 20 percent, with 2 percent surface slopes. Twenty percent road grades are allowed by County design exception. Additionally, per correspondence with the current county of San Mateo Fire Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road. Therefore, impacts would be <i>less</i> <i>than significant.</i> <i>On-Site Circulation</i> On-site circulation issues associated with the proposed project's main access road include: road widths, grades, and curves. <i>Road Widths</i> Per the Vesting Tentative Map, the new private main access road width would be 32 feet from curb-to-curb. There is one section that would be 22 feet wide from curb-to-curb. Because of the streep grades and curves on- site, it would be difficult for drivers to maneuver within 32 feet with parking located on both sides of the street. Therefore, parking should be allowed on only one side of the street. As stated previously, parking would not be allowed on the 22-foot wide section. This represents a <i>significant</i>		

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
impact.		
<u>Road Grades</u> As discussed above, the project includes a maximum proposed main access road grade of 20 percent. According to San Mateo County subdivision roadway standards, the typical maximum grade is 15 percent with up to 20 percent allowed by design exception. Thus, the proposed grades are acceptable by design exception. Per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, for the various maximum 20 percent grade segments within the main access road (unbroken grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE Fire Marshal has stated that this is not acceptable for primary access roads; however, the Department would allow this grade pending receipt of a finalized plan for all proposed roadway infrastructures. Therefore, impacts would be <i>potentially significant</i> .	Implement Mitigation Measure PS-2c.	Less than Significant
Impact TRANS-6: Construction Impacts	Mitigation Measure TRANS-6	
The most noticeable traffic impact during construction of the proposed project would be hauling excavated soil from the project site. The project applicant's civil engineer estimated 60,520 cubic yards (cy) of soil would need to be exported from the project site. Per the 2008 Hexagon report, depending on the type of truck used, a haul truck can carry about 20 cy of soil per trip. Therefore, based on the estimated 60,520 cy of export material, approximately 3,036 total haul truck round trips would be needed for exporting soil. Per Hexagon, the haul routes should be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road. Heavy trucks would not be recommended on Ascension Drive due to the steep grade. The project applicant has stated that parking for construction vehicles and workers would be accommodated entirely within the project site.	<ul> <li>The haul route streets shall be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road. That would minimize the number of residential streets used by trucks. Trucks shall not utilize Ascension Drive because of the existing traffic level and the steep grade.</li> <li>Construction activity shall be limited to the hours of 8:00 AM and 4:30 PM Monday through Friday. No activity or staging shall occur outside these hours.</li> <li>To minimize impacts to traffic and public safety, truck traffic for soil export from the project site shall be limited to between the hours of 10:00 AM and 3:00 PM.</li> </ul>	Less than Significant

Table II-1 (Continued) Summary of Environmental Imnarts and Mitigation Measures	priming of the second function and the second second of the
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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
The grading and construction phase of the proposed project could overlap with other projects in the vicinity, particularly the new Crystal Springs Bypass Tunnel project and the various improvement projects at the College of San Mateo. Depending on the actual construction dates of the proposed project and various related projects, it is possible that heavy trucks required to import and/or export materials to the related project sites could use roads to be used by the soil haul trucks for the proposed project. Although project construction traffic is a temporary condition, the additional trips on roadways could contribute to a noticeable traffic increase on Ascension Drive, Bel Aire Road, Laurie Lane, Parrott Drive, De Anza Boulevard, Polhenus Road, and CSM Drive. Given the amount of truck trips required for the proposed project, any additional truck traffic from the related projects would represent a <i>potentially significant</i> , but short-term cumulative traffic impact.	<ul> <li>operating in residential areas.</li> <li>No staging of trucks or construction equipment shall occur within the adjacent residential area at any time.</li> <li>Temporary "truck crossing" signs shall be placed in both directions on Bel Aire Road near the site entrance. Flagmen shall be used, as necessary, to control traffic during the arrival and departure of trucks and equipment.</li> <li>Construction workers shall be required to park on-site, i.e., no parking on Bel Aire Road or Ascension Drive.</li> <li>If construction or haul trucks driving to and/or from the project site cause any substantial damage to private driveways in the immediate vicinity of the project site, such damage shall be repaired by, or paid for by, the project applicant.</li> <li>As a condition of the grading permit required of the project applicant by the County, the applicant shall be responsible for the repair of any damage to roads resulting from the export of soil from the project site. Such repair shall be to the satisfaction of the San Mateo County</li> </ul>	
UTILITIES & SERVICE SYSTEMS	Department of Fublic Works.	
Impact UTIL-1: Result in a Determination by the Wastewater Treatment Provider that it does not have Adequate Capacity to Serve the Project's Projected Demand in Addition to the Provider's Existing Commitments or Result in the Construction of New Wastewater Treatment Facilities	Mitigation Measure UTIL-1	
Sewer Conveyance Infrastructure The proposed project would include installation of new wastewater infrastructure within the site to convey wastewater generated by the	The applicant shall mitigate the project-generated increase in sewer flow such that there is a "zero net increase" in flow during wet weather events, by reducing the amount of existing Inflow and Infiltration (INI) into the	Less than Significant

Environmental Impact Mitigation	Mitigation Measures	Level of Significance After Mitigation
proposed uses to the existing off-site wastewater lines and to the SMWTP. CSCSD sever system. This shall be would represent only 0.0005 percent of the existing average daily flow of plans subject to CSCSD approval. If megovements to improvements to improve by the CSCSD approval. According to County of San Mateo Public Works Department, there are no known sever service problems or deficiencies in the immediate project to CSCSD is agreement with both workser, the CSCSD has identified through a Mater Sever Plan approximately \$2.3 million in capital improvement projects with both downstream agencies, a portion of the CSCSD is agreement with both downstream agencies, a portion of the CSCSD is agreement with both downstream agencies, a portion of the CSCSD is agreement with both downstream agencies, a portion of the CSCSD is agreement with both downstream agencies, a portion of the costs associated with future projects with both downstream agencies, a portion of the costs associated with future project completed by the CSCSD in a case, and the future project with both downstream agencies. The CSUSD satement project completed by the CSCSD and the current wastewater treatment plant project completed by the CSCSD proved and the future additional flow that would result from the proposed project. The City of San Mateo Department of Public Works cannot approve the additional flow that would result from the project would result from the project or a wast evalue and the current costs as a defined in the Sanitary Sever Agreement. Therefore, impacts associated with wastewater conveyance infrastructure would be potentially.	CSCSD sever system. This shall be achieved through the construction of improvements to impacted areas of the sever system, with construction plans subject to CSCSD approval. Construction of improvements, as approved by the CSCSD, shall be completed prior to the start of the construction of the residences.	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact UTIL-3: Be Served by a Landfill with Insufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs	Mitigation Measure UTIL-3	
<i>Operational Phase</i> The site is currently undeveloped and does not produce any solid waste. The project would generate solid waste for 25 single-family homes. As such, the generation of solid waste at the proposed project site would increase. The project area is served by the South Bayside Integrated Facility and Ox Mountain Landfill. Currently, the South Bayside Integrated Facility and Ox Mountain Landfill. Currently, the South Bayside Integrated Facility and Ox Mountain Landfill. Currently, the South Bayside Integrated Facility and Ox translates into a remaining capacity of 1,830 TPD that can be taken in by the South Bayside Integrated Facility. Currently, the Ox Mountain Landfill takes in approximately 3,250 TPD and has capacity to take in 3,598 TPD. This translates into a remaining capacity of 348 TPD that can be taken in by the Ox Mountain Landfill. With an anticipated average daily solid waste generation of approximately 0.0345 TPD, the proposed project would represent approximately 0.002 precent of the remaining capacity that can be taken in by the Ox Mountain Landfill. While the Ox Mountain Landfill is currently in excess of its total permitted capacity, it continues to accept waste as the landfill gradually settles and new space becomes available. Both the South Bayside Integrated Facility and Ox Mountain Landfill is currently in excess of its total permitted capacity, it continues to accept waste as the landfill gradually settles and new space becomes available. Both the South Bayside Integrated Facility and Ox Mountain Landfill have sufficient capacity to meet the solid waste service demands of the proposed project. The proposed project would comply with all applicable. County policies and ordinances (e.g., Green Building Ordinance). Provided the project provides adequate space on each parcel for recvcline, innosts associated with solid waste searciated with solid waste service demands of the project provides adequate space on each parcel for recvcline, innosts associated with solid waste expace of e	Although impacts were found to be less than significant, the following recommended mitigation measure would further reduce any adverse solid waste impacts. The applicant shall prepare and submit a facility recycling program for the collection and loading of recyclable materials prepared in response to the california Solid Waste Reuse and Recycling Access Act of 1991 as described by the CTWMB, Model Ordinance, Relating to Areas for Collecting and Loading Recyclable Materials in Development Projects, March 31, 1993. Adequate space or enclosures for recycling bins shall be provided at appropriate locations to promote recycling of paper, metal, glass, and other recyclable material.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
operation would be <i>less than significant</i> and no mitigation measures are required.		

### A. OVERVIEW OF ENVIRONMENTAL SETTING

This section provides a brief overview of the project site's regional and local setting. Additional descriptions of the environmental setting as it relates to each of the environmental issues analyzed in this Draft Environmental Impact Report (DEIR) are included in the environmental setting discussions contained within Sections IV.A through IV.J. Also provided in this section is a list of related projects, which is used as the basis for the discussion of cumulative impacts in Section IV (Environmental Impact Analysis).

### **Regional Setting**

The project site is located within the unincorporated community of the San Mateo Highlands in the County of San Mateo, just southwest of the City of San Mateo (refer to Figure III-1). The site is located approximately 0.75 miles east of Interstate 280 (I-280) and 0.75 miles west of State Route 92 (SR 92).

### Local Setting

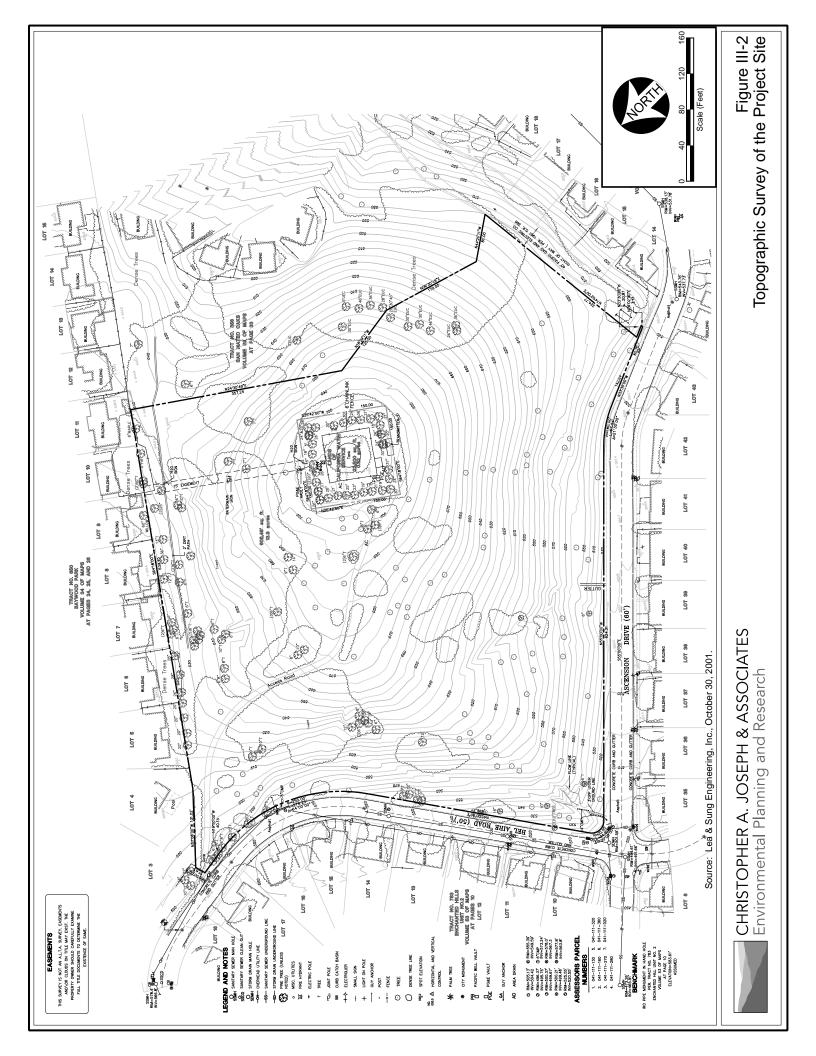
The 13.25-acre project site is located at the eastern corner of Bel Aire Road and Ascension Drive. The project site is composed of the following Assessor's Parcel Numbers (APNs):

041-111-130	041-111-280				
041-111-160	041-111-320				
041-111-270	041-111-360				
041-111	1-020				
Water Tank/Cell Site Parcel					
Not part of the pr	oposed project				

The largely undeveloped project site is situated on a hillside with slopes averaging 40 percent. Surface elevation of the site ranges from approximately 410 to 610 feet above mean sea level (msl). Existing natural slopes range from nearly flat at the top of the project site's ridge to 1.5 to 1 percent (horizontal to vertical) on the flanks. The site was graded over 40 years ago, which consisted of excavating the sides of the hill for construction of Ascension Drive and Bel Aire Road. The cut slopes were made at 1.5 to 1 percent with 8-foot wide benches spaced at 30-foot vertical intervals (refer to Figure III-2). The site consists of Franciscan Complex bedrock, including hard sandstone with occasional claystone interbeds. Colluvium and artificial fill overlay the bedrock, with the colluvium consisting of a brown sand, silt, and clay mixture containing scattered angular gravel fragments of sandstone. A small abandoned quarry pit is located on the northeast side of the project site and is characterized by a crescent shaped, near vertical cut slope up to approximately 5 to 6 feet in height, with a mound of debris (tailings) located just downslope. The quarry cuts expose sandstone bedrock beneath a thin veneer of soil. A few yards of rock was removed from this location at some time in the past.

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Surface runoff water from the benches has eroded deeply (locally 10 feet plus) into the unconsolidated colluvial materials exposed on the cut slopes and benches. Drainage flows down the slopes in a southwesterly direction towards Polhemus Creek (refer to Figures III-3 and III-4). On-site vegetation includes grassland, small brush and trees such as oak, pine and eucalyptus trees. A small eucalyptus grove is located on the southeast side of the site and pine trees have been planted around the existing water tank/cell site parcel. For views of the project site refer to Figure III-5 through Figure III-7.

The potable water tank (owned by the California Water Service Company (Cal Water)) and a cell transmitter site, enclosed by fencing and surrounded by Monterey pine trees, are located within the overall project site (APN: 041-111-020) and are served by a small access road that connects to Bel Aire Road. This road also serves as the only current access point to the project site. This water tank/cell site parcel is not a part of the proposed project.

The County of San Mateo General Plan land use designation for the project site is Medium Low Density Residential (2.4 - 6.0 dwelling units (du)/acre). The project site is zoned R-1/S-8 (single-family residential/7,500 square foot minimum lot size). This zoning requires 40 percent yard coverage and setbacks of 20 feet (front and back yards) and 5 feet (side yards). The maximum height limit for buildings on the project site is three stories or 36 feet.

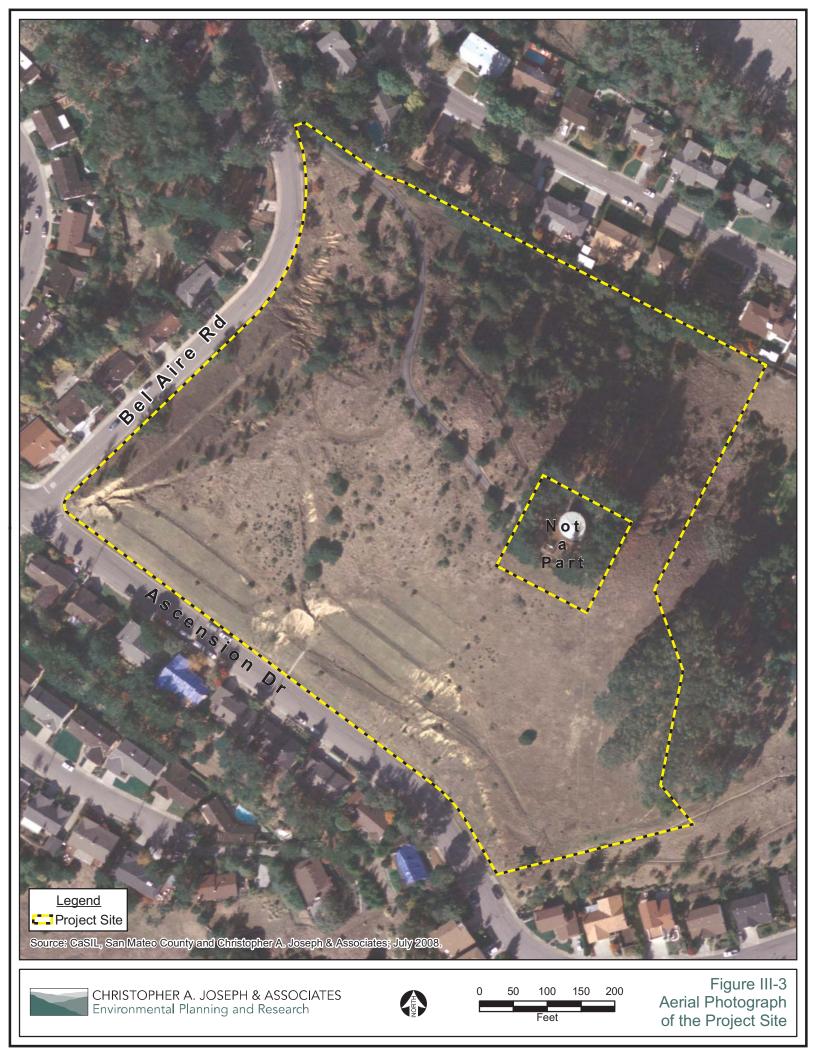
### Surrounding Land Uses

The project site is surrounded by single-family homes, including: the Baywood Park neighborhood located to the northeast; the Enchanted Hills neighborhood to the southeast and southwest; and the Starlite Heights neighborhood to the northwest. The College of San Mateo is located less than 0.25 miles northeast of the project site off of Parrott Drive. Surrounding land uses are shown in Figure III-8 and Figure III-9.

### **B. RELATED PROJECTS**

Sections 15126 and 15130 of the CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as "cumulative impacts." Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts (CEQA Guidelines Section 15355). Cumulative impacts may be analyzed by considering a list of past, present, and probably future projects producing related or cumulative impacts (CEQA Guidelines Section 15130(b)(1)(A)).

Table III-1 lists the related projects identified for the proposed project. These related projects consist of all approved, proposed, or projects currently under construction located in the City of San Mateo and the County of San Mateo (refer to Figure III-10). Per the Town of Hillsborough's Director of Building and Planning, no major development projects have been approved, proposed, or currently under construction





CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure III-4 Aerial Photograph of the Project Site and Surrounding Area



A. Northwestern view of project site from Londonderry Drive.



**B.** Eastern view of existing water tank that is encompassed by the project site but is not a part of the proposed project.



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Figure III-5 Views of the Project Site



A. Northwestern view of project site from Ascension Drive.



B. Northern view of project site from Polhemus Road.

CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure III-6 Views of the Project Site



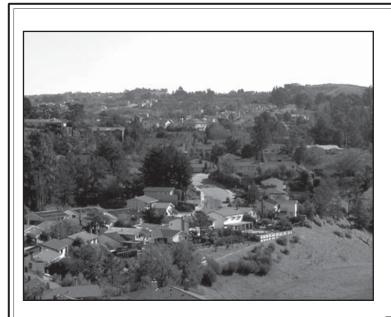
**A.** Southern view of project site from Bel Aire Road.



**B.** Eastern view of project site from the intersection of Bel Aire Road and Ascension Drive.



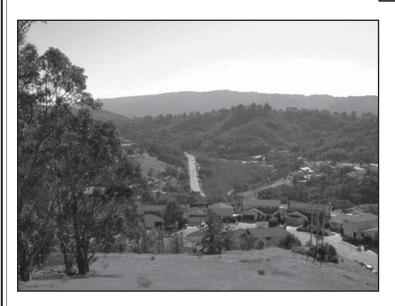
CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure III-7 Views of the Project Site



**A.** Southern view from the project site of existing residential uses.

**B.** Southwestern view from the project site of existing residential uses.

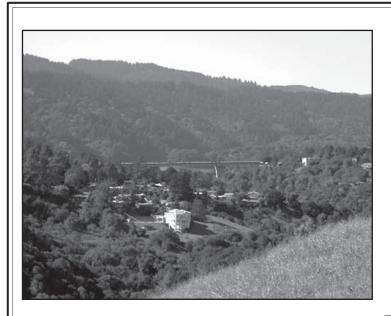




**C.** Southern view from the project site of residential uses and Polhemus Road.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure III-8 Views of Surrounding Uses



**A.** Western view from project site. Residential uses are seen in the foreground and I-280 is seend in the middleground.

**B.** Northeastern view from the project site of the College of San Mateo.





**C.** Northern view from the project site. Residential uses are seen in the foreground and South San Francisco is seen in the background.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure III-9 Views of Surrounding Uses within the Town.<sup>1</sup> The list provided in Table III-1 includes 22 projects of various land uses, including: single- and multi-family residential, commercial, retail, office, library, a police station, college master plan, and water pipeline.

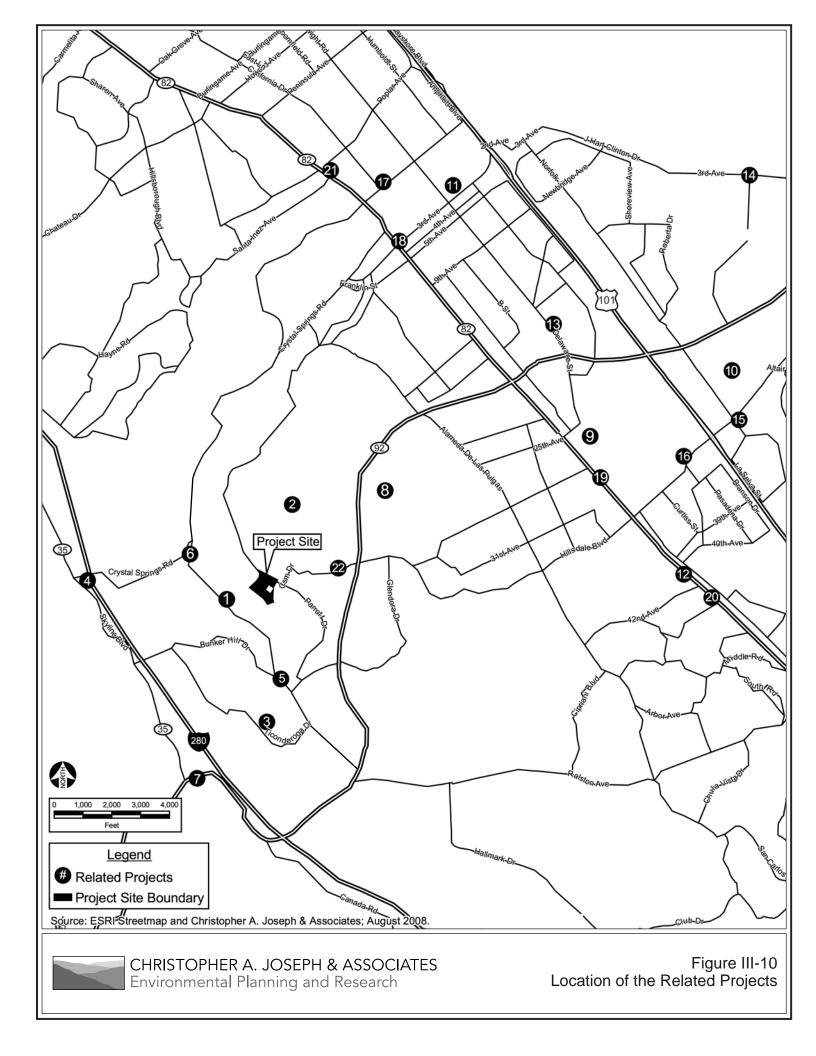
Map No.	Project Name	Project Type	Address	Size	Status			
San Mateo County <sup>1</sup>								
1	NA	Water Supply Pipeline Improvement	East of Polhemus Road Alignment	NA	Proposed			
2	NA	Facilities Master Plan	College of San Mateo	Campus-Wide	Approved			
3	NA	Residential Development	San Mateo Highlands (Ticonderoga Drive, Bunker Hill Drive, Cobblehill Place, and Cowpens Way)	99 acres 11 du	Proposed			
4	NA Lower Crystal Springs Dam	Bridge Demolition & Reconstruction Dam Reconstruction (located beneath the abovementioned bridge)	Skyline Blvd., approx. 250' south of Crystal Springs Rd.	Entire bridge Existing dam	Proposed			
5	Crystal Springs Pipeline #2 (SFPUC)	Water Supply Pipeline Improvement	Start at Crystal Springs Pump Station running northerly along Crystal Springs Rd. toward El Camino Real	Pipeline segment	Proposed			
6	Crystal Springs Bypass Tunnel (SFPUC)	Construction of tunnel riser, vault, piping and related mechanical equipment	South side of Crystal Springs Rd. about 240' west of Polhemus Rd.	Tunnel associated improvements	Proposed			
7	Crystal Springs/San Andreas Transmission	Construction of major dam improvements: outlet structures, discharge culverts,	South of Skyline Boulevard, near the Crystal Springs Dam	Associated dam improvements	Proposed			

### Table III-1 Related Projects List

<sup>&</sup>lt;sup>1</sup> Liz Cullinan, Director of Building and Planning, Town of Hillsborough, Personal Communication with CAJA Staff, June 27, 2008.

Map No.	Project Name	Project Type	Address	Size	Status		
	Upgrade (SFPUC)	pump station, pipelines					
City of San Mateo <sup>2</sup>							
8	Verona Ridge	Residential Subdivision	Near SR 92, Campus Drive, and the Peninsula Golf and Country Club	34 du 5.5 acres	Under Construction		
9	Bay Meadows II -SPAR I	Mixed Use Residential Development Office Development Commercial Development	2600 South Delaware Street	392 du 750,000 sf 93,000 sf	Approved		
	Bay Meadows II -SPAR II	Townhouse and Condominium Development	2600 South Delaware Street	330 du	Proposed		
	Bay Meadows II -SPAR III	Residential Development	2600 South Delaware Street	344 du	Proposed		
10	Chesapeake Point Apartments	Apartment Additions	1633 Marina Court	30 du 6.78 acres	Approved		
11	Hacienda Mateo	Townhouse Development	613 & 701 2 <sup>nd</sup> Street	8 du	Approved		
12	Villa Hotel	Senior Housing Facility	4000 South El Camino Real	135 du	Approved		
13	Station Park Green	Mixed Use Residential Development Commercial Development	1700 South Delaware Street	12 acres	Proposed		
14	Mariner's Island Condominiums	Condominium Development	400 Mariner's Island Blvd.	76 du	Approved		
15	Norfolk Townhomes	Townhouse Development	2868 South Norfolk Street	10 du	Approved		
16	San Mateo Police Station	Police Station	200 Franklin Parkway	45,000 sf	Under Construction		
17	San Mateo Drive Condominiums	Condominium Development	117 - 121 North San Mateo Drive	34 du	Proposed		
18	Clock Tower Building	Mixed Use Office Development Commercial Development	221 South El Camino Real	23,462 sf 11,426 sf	Approved		
19	Peninsula Station Affordable Housing	Mixed Use Residential Development (Affordable Housing) Commercial Development	2901 - 2905 South El Camino Real	68 du 2,917 sf	Approved		
20	Sadigh Mixed Use	Mixed Use Condominium Development	4300 South El Camino Real	10 du 4,000 sf	Approved		

Map No.	Project Name	Project Type	Address	Size	Status
		Commercial Development			
21	One Engle Road	Townhouse Development	1 Engle Road (at El Camino Real)	6 du	Approved
22	San Mateo Executive Park	Office Building Renovations	3001 & 3155 Clearview Way	22 acres	Under Construction
Notes:       du: dwelling unit sf: square feet         NA = Not Available         I       County of San Mateo Planning and Building Division, June 2008; SFPUC Peninsula Projects, Traffic Management Plan (TMP), May 14, 2008.         2       City of San Mateo Planning Department, June 2008.					



# C. PROJECT APPLICANT

The project applicant for the proposed project includes:

San Mateo Real Estate & Construction Mr. Dennis Thomas 1777 Borel Place, Suite 330 San Mateo, CA 94402

# D. PROJECT CHARACTERISTICS

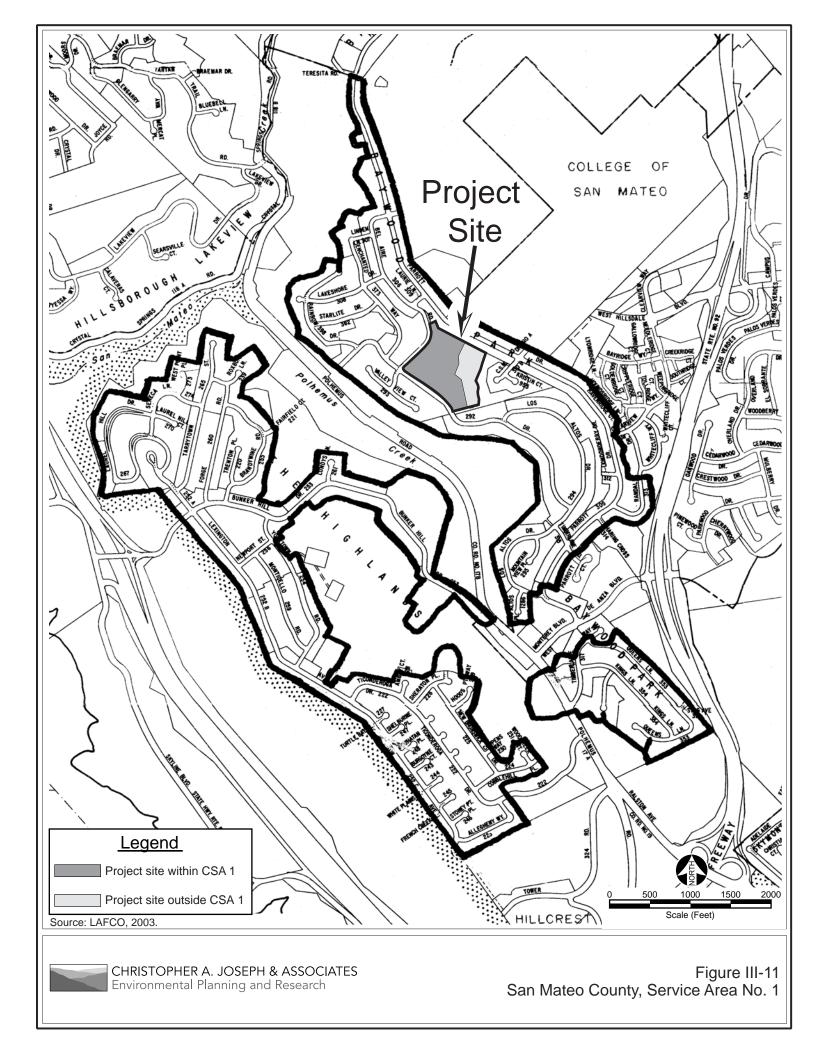
As stated previously, a water tank and a cell transmitter are enclosed by the project site and are currently served by a small access road that connects to Bel Aire Road. This piece of property is not a part of the proposed project. Under the proposed project, 2,821 square feet east of the tank and cell site would be dedicated to Cal Water (owner of the water tank). A new fence surrounding the water tank would be provided as a project-sponsored improvement, as well as a new road to the water tank and a new water main which would run through the property.

Parcels APN: 041-111-280 and 041-111-320 associated with the proposed project are not within the boundaries of the San Mateo County Service Areas (CSA), specifically CSA #1 (refer to Figure III-11). These parcels would need to be annexed into this CSA, in order to receive the same level of public services as the remaining project site. The applicant will follow the Application Process as stipulated according to the San Mateo County Local Agency Formation Commission (LAFCO) for annexation procedures. The applicant will work with LAFCO to complete the annexation process.

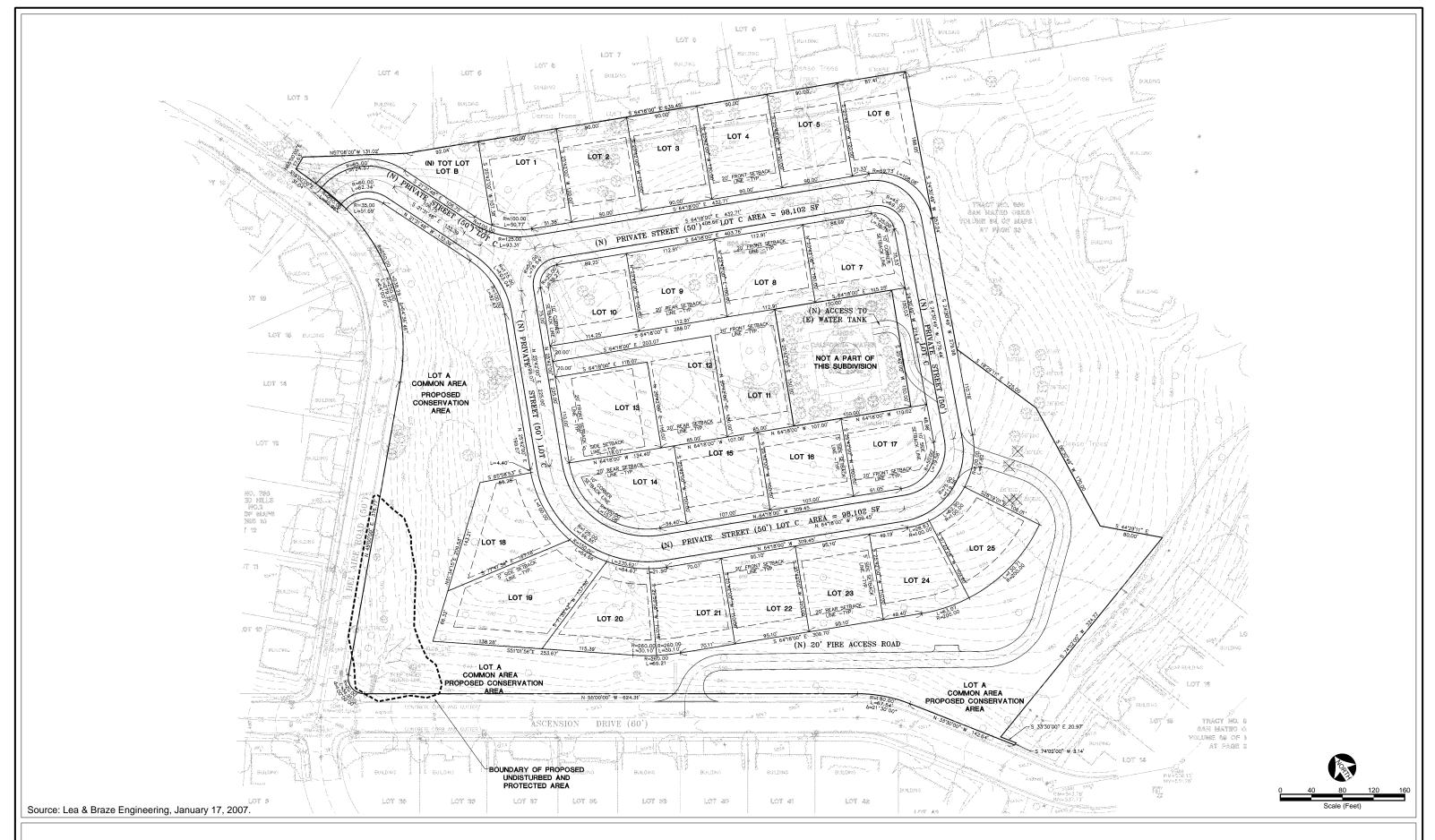
Construction of the proposed project would require the removal of various on-site trees and the demolition of the existing access road for the water tank site. There are no specific landscaping plans proposed at this time. The landscape maintenance agreement within the direction of the proposed Homeowner's Association (HOA) will be determined at a later date. The additional specific land uses for the proposed project within the project site are described below:

#### **Residential Uses**

The project applicant proposes to subdivide 6 legal parcels (i.e., APNs: 041-111-130, -160, -270, -280, - 320, and -360), which make up the proposed project site (excluding the water tower and cell site, APN: 041-111-020), into 25 single-family residential lots. The 25 lot sizes would range from 10,120 to 17,590 square feet (or 2.8 du/acre), where appropriate, for a total of 291,256 square feet lot area, which represents approximately 50 percent of the area within the project site (refer to Figure III-12). Setbacks of 20 feet (front and back yards) and 5 feet (side yards) would be implemented for each lot, with 10-foot corner setback lines where necessary. Each lot would be developed with one single-family house.



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Figure III-12 Vesting Tentative Map

Design of the structures is not available at this time and would be proposed after the Tentative Map is approved; although, proposed structures would be designed to be similar to those surrounding single-family residential uses.

#### **Open Space and Recreation**

The proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation area, trails and a tot lot. The tot lot and trails would be available for use by the general public. The common areas/conservation area, trails and the tot lot would be owned and maintained by the proposed HOA. Additional details for these amenities are discussed below:

#### Undisturbed and Protected Area

A 0.45-acre (19,602-square foot [sf]) proposed undisturbed and protected area would be included within the southwest corner of the project site. This area would be maintained through the implementation of a conservation easement. As part of the proposed project, the existing on-site drainage improvements within this area will be removed. This area would be the responsibility of the HOA with regards to maintenance. A formal agreement would be determined at a later date.

#### Lot "A" Common Areas (Proposed Conservation Area)

The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. The landscaping of the conservation areas is not determined at this time; however, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat, including a provision for a nature trail. These areas will be open to the subdivision residents and the general public.

#### Trails

#### Trail 1

Trail 1 would consist of a 5-foot wide pathway that would transverse the northern portion of the site running behind proposed Lots 1-6 and would be accessible from two points: (1) the stairs to be located near the tot lot; and (2) the far northeastern corner of the proposed on-site private street (near the front of Lot 6).

#### Trail 2

Trail 2 would consist of a 5-foot wide pathway, which would run through the proposed common area/conservation area located within the southwestern portion of the project site (specifically adjacent to Lots 18, 19 and 20). This trail would be accessible from two points: (1) the western portion along the private street (near Lot 13); and (2) via stairs leading up to the trail from Ascension Drive.

Both of the recreational trails would include 3-foot high retaining walls and wood rustic fences, where necessary, to ensure stability and safety (refer to Figure III-13). Trails depicted on Figure III-12 are in approximate locations, final locations would be determined at the Final Map stage.

#### Lot "B" - Tot Lot

The tot lot would consist of approximately 0.19 acres (8,365 sf) and would be located near the project's main site entrance on the northeastern side of the new private street adjacent to Lot 1. The tot lot would include playground facilities and the development of retaining walls and 3-foot high wood rustic fences in appropriate surrounding areas (refer to Figure III-13).

#### Infrastructure

#### Access, Circulation & Parking

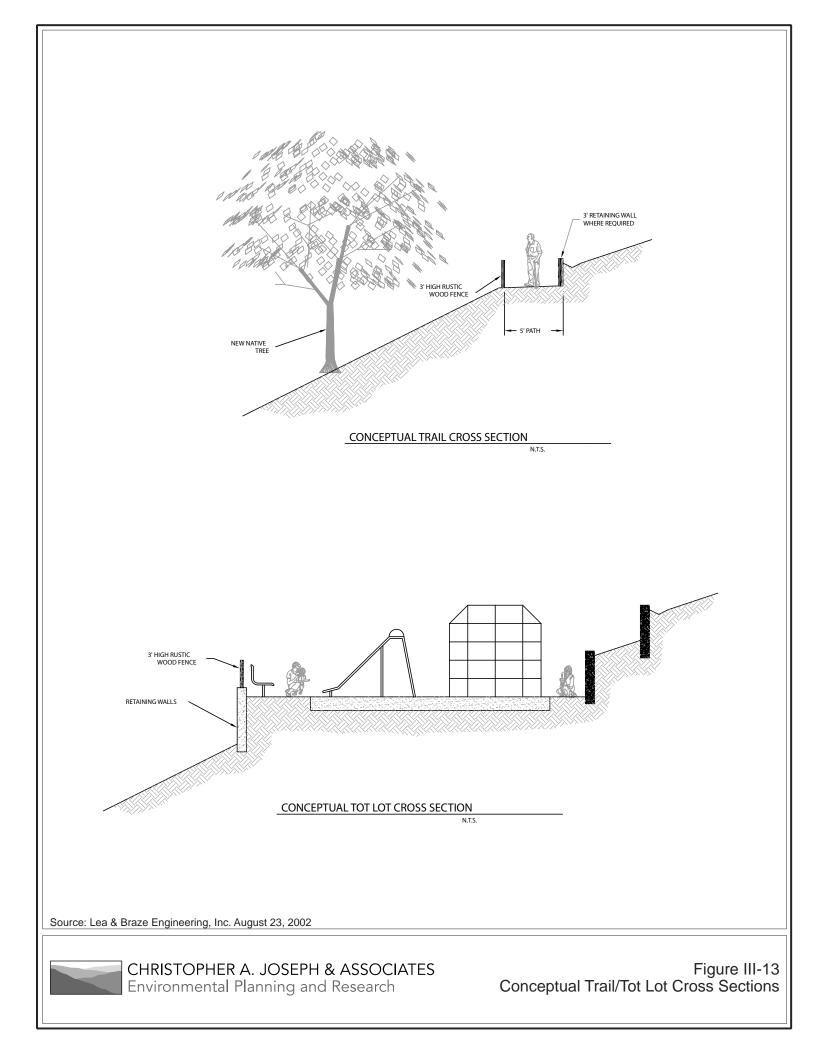
The proposed project includes approximately 98,102 sf (approximately 17 percent of the total project site) of on-site private roadways, including the main private access road, the Emergency Vehicle Access (EVA) road and the new water tank access road. The private street systems would be owned by the private homeowners and maintained by the proposed HOA.

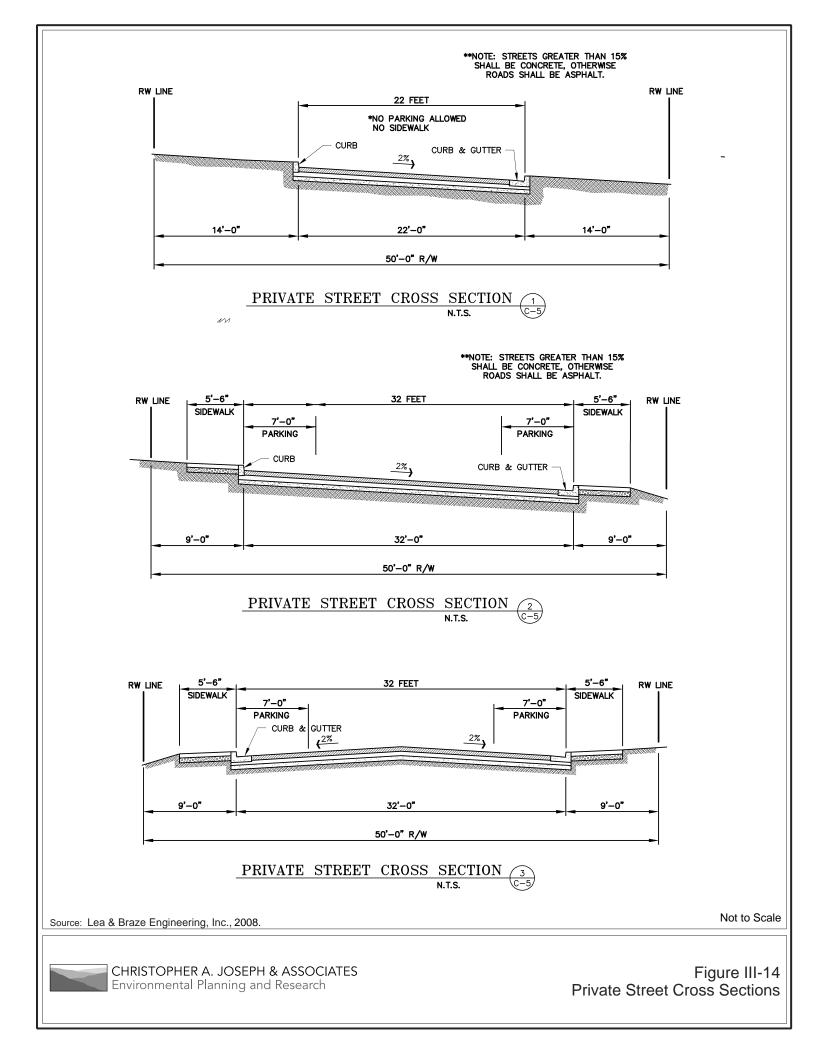
Additionally, on-site parking would be provided and would follow County guidelines for on-site parking requirements. No parking specifics are provided at this time; however, they will be part of the final layout for each lot.

#### Lot "C" - Main Access Road

The proposed private street (Lot "C"; refer to Figure III-12) would provide one access point for both ingress and egress at the northwestern end of the property via Bel Aire Road. On-site circulation along this street would consist of a closed loop system, with the majority of the proposed 25 lots situated on either side of this street.

Per Figure III-14, the Lot "C" private street system would consist of a 50-foot wide right-of-way throughout. The majority of associated street segments would have the following characteristics: a 32-foot wide paved street surface with curbs and gutters where appropriate; 5.6-foot sidewalks along each side of the street; and curbside parking available. Conversely, a section of the private street system located within the eastern portion of the site, near the water tank parcel and Lots 7 and 17, would include a 22-foot wide street surface from curb-to-curb, with gutters where appropriate. No parking or sidewalk would be developed along this segment of the street. The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. Street sections with greater than 15 percent grade would consist of concrete, while all other sections would include asphalt.





#### Emergency Vehicle Access Road

An EVA road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. This roadway would include the following features: a 20-foot wide street surface; a vehicle turn out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of 20 percent, with 2 percent surface slopes (refer to Figures III-15 and III-16).

#### Water Tank Access Road

As part of the project, the existing access road for the water tank and cell site (site is not part of the project; refer to Figure III-3 and Figure III-12) would be abandoned and a new access road would be provided to the site via the proposed on-site private street. This new access street would be bordered by retaining walls, which would be maintained by the HOA. Cal Water would maintain the access road within their dedicated parcel. The basic specifications of the road would be 15 feet in width, 2 percent cross slope, 19 percent average grade and approximately 120 feet long.

#### Parking

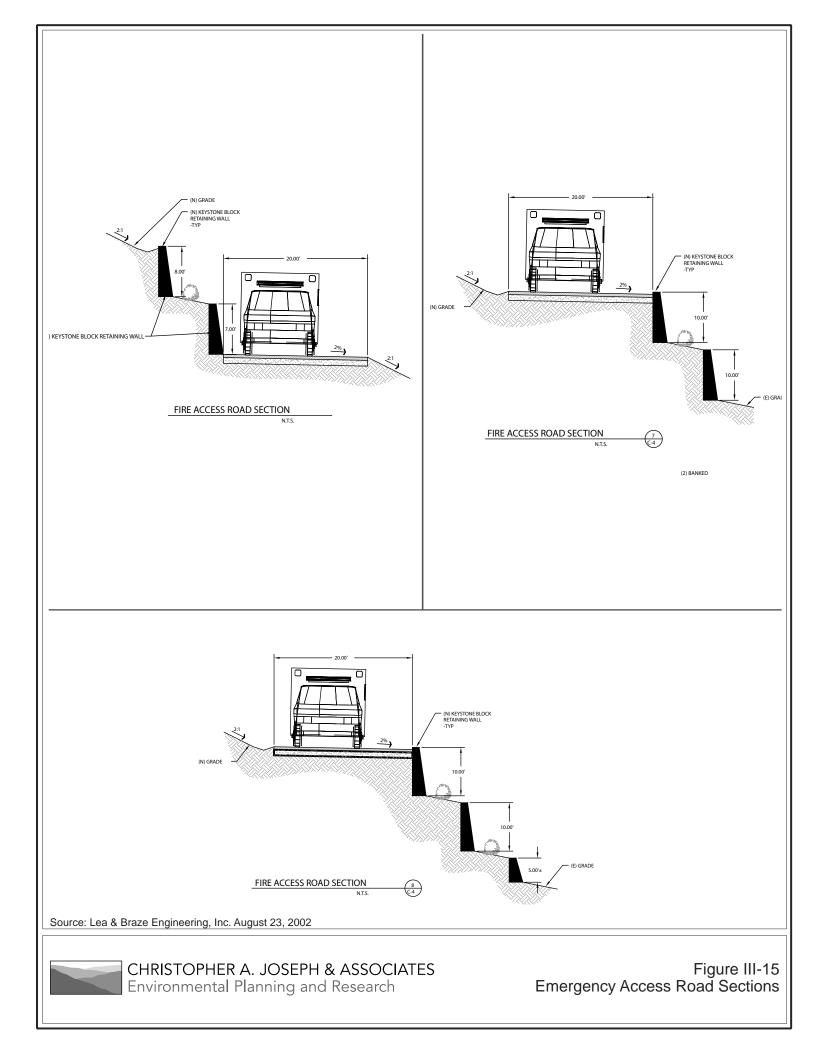
As stated above, parking for trails, tot lot and individual lot access would be provided via curbside parking provided along all 32-foot wide street segments. Additionally, parking would be provided on each of the individual 25 lots. No off-site parking spaces are proposed for this project.

#### Utilities

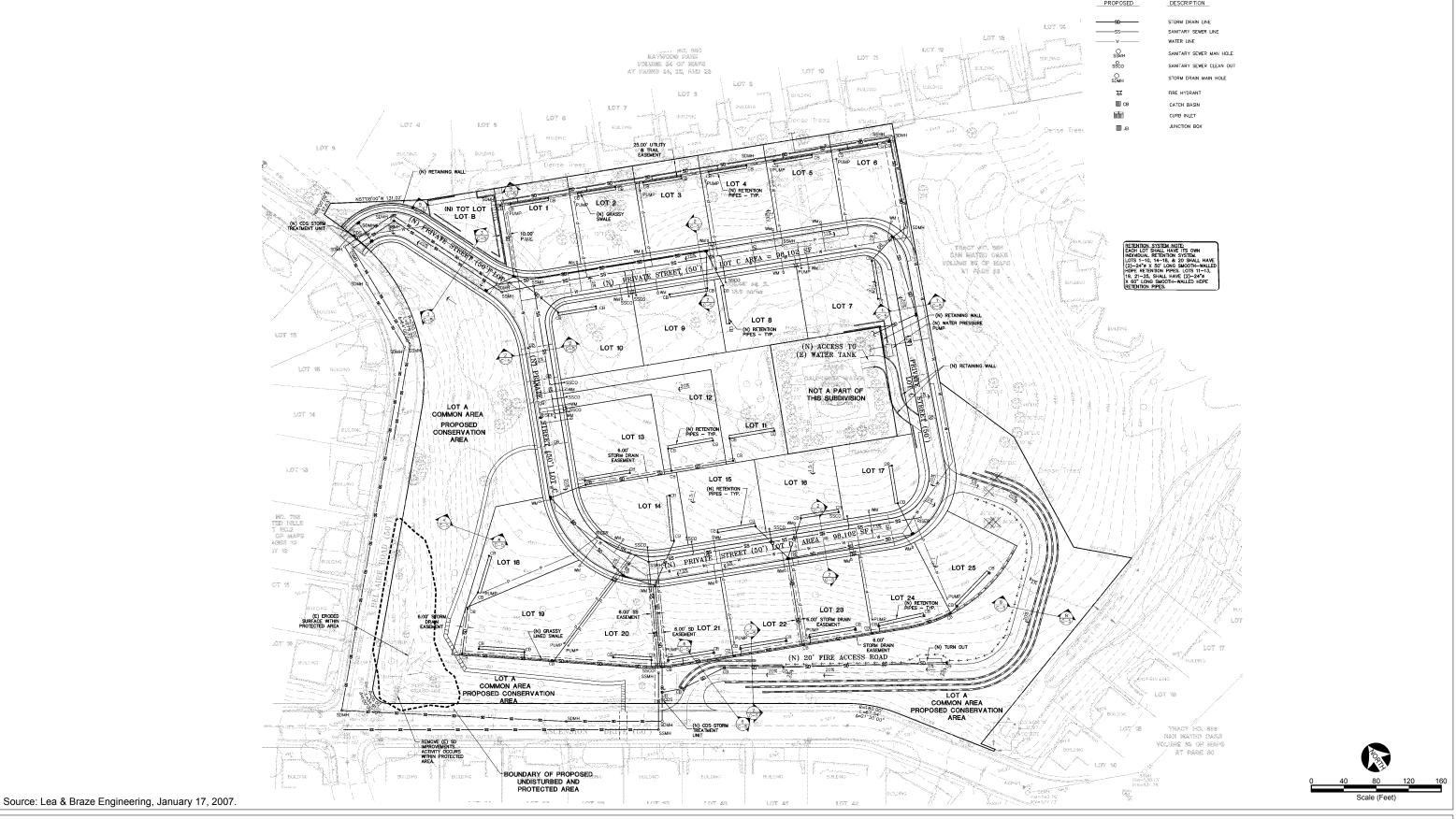
All appropriate utility-related easements would be provided within the proposed on-site development. The specific utilities associated with the proposed project are provided below (refer to Figure III-17):

#### Water Supply

Water service would be provided by the Cal Water via the on-site water tank located within the project site (APN: 041-111-020). The existing on-site water lines would be relocated to accommodate the new proposed development. The water tank would be accessed either via a connection to the water main in the private street with a saddle "T" connection. This connection would be implemented at the discretion of Cal Water. The proposed on-site water supply system would include: additional underground water pipelines and water mains in order to accommodate the proposed projects water needs (i.e., residential, fire emergency services). According to Cal Water, the developer will provide and pay for booster facilities at the tank site in order to serve the project with adequate water pressure. The proposed pipeline would loop around the proposed private street, while the water mains would be located within each individual lot.







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# Figure III-17 Proposed Utilities Systems

PROPOSED	DESCRIPTION
SD	STORM DRAIN L
SS	SANITARY SEWE
w	WATER LINE
SSMH	SANITARY SEWE
ssco	SANITARY SEWE
О sdmн	STORM DRAIN M
¥	FIRE HYDRANT
шсв	CATCH BASIN
	CURB INLET
Ш јв	JUNCTION BOX

#### UTILITY LEGEND

The on-site water pipeline segments would be connected to existing off-site water pipelines near: (1) the intersection of Bel Aire Road and the new private street; and (2) an extension from the north at the northeastern edge of the project site where other off-site single-family homes currently receive water service.

No water usage figures are currently available as no house plans have been completed. Normal water usage is anticipated for single-family houses of the size typical for this neighborhood. There are no specific landscaping plans proposed at this time. However, the intent is to utilize drought-tolerant, native vegetation in order to restore areas within the site to a natural habitat. Fire hydrants will also be installed on-site per the State and County fire codes.

#### Sewer Service

Sanitary sewer service would be provided to the project site by the Crystal Springs County Sanitation District (CSCSD), with the Town of Hillsborough/City of San Mateo acting as the downstream agency and the Wastewater Treatment Plant processing provided by the City of San Mateo. The proposed on-site sewer system would consist of the development of underground sanitary sewer pipelines, gravity lines, risers, clean-outs and manholes. The proposed on-site pipeline system would include two separate sewer pipelines that would be installed within the northern and southern portions of the site (i.e., North [Line "A"] and South [Line "B"]). The pipelines would be installed within the on-site private roadway right-of-way. Line A would connect the individual systems associated with Lots 1-13 and convey the summation of wastewater along the northern portion of the private street before exiting the site via a new underground sewer line connection along Bel Aire Road. Additionally, Line B would connect the individual structures for Lots 14-25 for conveyance of wastewater off-site via a new pipeline segment running underground along Ascension Drive. The sewer system would connect to existing systems via the new system lines. All sewer lines leaving the site would be gravity fed, while the on-site lines would consist of a pressure system. Both of the proposed off-site sewer line extensions would connect into the existing CSCSD system.

The sewer ejector pumps would be pre-manufactured, all-inclusive pumps with battery back-up, high water alarm, and would have industry-standard holding capacities.

#### Solid Waste/Recycling

The solid waste generated during the construction and operational phases of the proposed project would be accommodated by the Ox Mountain Landfill. Curbside recycling of cans, bottles, paper cardboard and yard waste would be available.

#### Electrical & Natural Gas

Pacific Gas & Electric (PG&E) would provide electrical and natural gas services to the proposed project via an underground distribution system. As noted under subheading III.E, Discretionary Actions (specifically the County of San Mateo LAFCO sub-discussion) below, street lighting in the project area is

provided by the County-governed Bel Aire Lighting District. The project site is not currently within the boundaries of this District and would require annexation.

#### Telephone & Cable

AT&T would provide telephone and cable services to the project via an underground distribution system.

#### Drainage Systems

The project has been designed with several permanent Best Management Practices (BMPs) for long-term treatment of the runoff (e.g., grassy-lined swales; refer to Section IV.E, Hydrology & Water Quality). The proposed on-site drainage system would consist of underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters. The proposed on-site pipeline system would include two separate storm drain pipelines (i.e., consisting mainly of smooth-walled high density polyethylene (HDPE) plastic) that would be installed within the northern and southern portions of the site (i.e., North [Line "A"] and South [Line "B"]). Line A would connect the individual drainage systems associated with Lots 1-10 and the water tank parcel (not part of the project) and convey the summation of stormwater into the northern treatment system (located along the main site entrance) before exiting the site via a new underground storm drain line along Bel Aire Road (refer to Figure III-17). Additionally, Line B would connect the individual drainage structures for Lots 11-25 and from the EVA road for conveyance of stormwater into the southern treatment system (located near the southern project boundary adjacent to the EVA road and Ascension Drive) before exiting the site via a new pipeline running underground along Ascension Drive. The new off-site storm drain lines will connect into a common manhole at the intersection of Bel Aire Road and Ascension Drive. The system would then connect into the existing County storm drain system, following Ascension Drive down to Polhemus Road, with the treated runoff ultimately released into Polhemus Creek.

Each individual lot will have its own separate retention system comprising of a two large underground diameter pipes. Lots 1-10, 14-18, and 20 will have 2- to 24-inch diameter by 50-foot long retention pipes. Lots 11-13 and 21-25 will have 2- to 24-inch diameter by 60-foot long retention pipes. Lot 19 will have 2- to 36-inch diameter by 60-foot long retention pipes. Each lot retention system has been oversized in order to compensate for the runoff from the on-site private roadway (i.e., Lot "C"). This system will retain stormwater runoff in each lot prior to entering the storm drain system via Lines A or B. As stated above, two separate on-site continuous deflective separation (CDS) hydrodynamic separator runoff treatment devices would be included as part of the drainage system. These chambers are designed to remove as many pollutants as possible. The CDS is specifically designed to remove large trash, oil and small sedimentation particles. However, the CDS requires a regular maintenance schedule to perform properly; it is anticipated that any Covenants, Conditions and Restrictions (CC&Rs) for the development will require a CDS maintenance agreement.

#### Grading

Grading activities include cut (earth removal) and fill of earthwork, creation of engineered slopes and stepped foundations, installation of retaining walls. Approximately 131,480 cubic yards (cy) of earth material would be graded for the proposed project on slopes averaging 40 percent (see Figure III-18). Specifically, the grading phase of the proposed project would require approximately 96,000 cy of cut material (with a maximum depth of 25 feet) and 35,480 cy of fill material (with a maximum depth of 10 feet). Approximately 60,520 cy of soil would be exported from the site to an off-site location.

#### **Emergency Services**

Fire protection to the project site and surrounding areas is provided by the California Department of Forestry and Fire Protection (CALFIRE) by contract with the County of San Mateo. Seventeen fire agencies in San Mateo County are part of a joint powers agreement with the San Mateo County Public Safety Communications 911 Dispatch, which operates as a single, consolidated dispatch center. The City of San Mateo provides fire protection to the project area through a mutual aid agreement. Two fire stations provide primary response in the area of the project site: CALFIRE Station 17 (320 Paul Scannell Drive, San Mateo, CA); and San Mateo City Station 27 (545 Beresford in San Mateo). The County would determine, as necessary, if the parcels need to be annexed to receive the above services. The developer would then work with LAFCO to complete the annexation process.

#### Phasing & Schedule

Due to the scope and complexity of the grading and utilities, all work proposed on the Vesting Tentative Map (refer to Figure III-12) is proposed to be complete in one phase. The grading phase would require approximately 34 to 44 days for completion, with the appropriate utility infrastructure added after this phase. The construction of the new private street would require an additional 6 months post the grading phase. All utility stubouts would be completed as part of the one phase tract improvements. The building schedule and phasing of the individual houses has not yet been determined; however, it is assumed for this analysis that buildout would be completed in 4.5 - 5 years.

#### **Development Standards**

BMPs would be implemented for the drainage and excess water created from post-development runoff. Standards are guided by the California C.3 storm water quality program. The improvement plans suggest many of these design practices help to reintroduce runoff back into the groundwater table. A Storm Water Pollution Prevention Program (SWPPP) incorporated into the improvement plans would mitigate the amount of erosion that could occur during and after construction (refer to Section IV.E, Hydrology & Water Quality). Green building practices would be incorporated into the building design phase and would follow the applicable County ordinances and guidelines (refer to Section IV.F, Land Use & Planning).

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#### GRADING LEGEND

### E. **PROJECT OBJECTIVES**

The objectives of the proposed project are as follows:

- Provide sufficient housing supply jointly with the cities located in the County that meet San Mateo County's projected housing needs;
- Provide phased residential development consistent with economic and social needs and environmental constraints;
- Enhance and preserve the environmental quality of residential areas in the County through appropriate mitigation programs;
- Work with all affected local jurisdictions and agencies to develop appropriate impact mitigation and fee structure programs to greatly reduce or eliminate the project's impacts on the community's existing residents;
- Provide development of open space and trails in the County's residential areas;
- Establish a system of trails and walkways as an alternate mode of travel, which would provide convenient and safe movement of non-motorized traffic;
- Provide a well-designed development that is compatible and complementary with surrounding land uses; and
- Blend the building types and densities with surrounding residential developments to provide orderly visual and land use transitions.

#### F. DISCRETIONARY ACTIONS

This DEIR serves as the environmental document for all discretionary actions associated with development of the proposed project. This DEIR is also intended to cover all federal, state, regional and/or local government discretionary approvals that may be required to develop the proposed project, whether or not they are explicitly listed below. Discretionary actions or approvals required for the proposed project from the County of San Mateo or other agencies include, but are not necessarily limited to:

#### **County of San Mateo**

• Approval of phased final maps upon a single approved Vesting Tentative Map to subdivide the project site into 25 single-family lots and open space parcels; and

• Other discretionary approvals and requirements, including compliance with applicable ordinances and policies (e.g., Subdivision Ordinance, Green Building Ordinance, and General Plan) and various permits (e.g., building permits, grading permit, tree removal permit, etc.).

#### County of San Mateo LAFCO

As stated previously, a portion of the project site is not located within the boundaries of the following County-governed Districts:

- CSA #1, which provides enhanced police and fire protection services (funded by both a share of the 1 percent property tax and a special parcel tax); and
- Bel Aire Lighting District, which receives a share of the 1 percent property tax for street lighting.

A condition of approval of the project would include annexation to these Districts. Annexation would require:

- Application by property owner to the San Mateo LAFCO, including a map and legal description and LAFCO and State Board of Equalization Fees;
- Adoption of a property tax exchange resolution by the Board regarding amount of property tax to be transferred between the County General Property Tax and County governed districts;
- Special parcel tax for CSA #1 for enhanced police and fire; and
- Approval by LAFCO and recordation of certificate of completion.

#### **California Water Service Company**

• Upon approval of the project, permits would be secured from Cal Water to extend the on-site water lines.

# California State Water Resources Control Board and San Francisco Bay Area Regional Water Quality Control Board (RWQCB)

• The RWQCB will require compliance with a National Pollutant Discharge Elimination System (NPDES) Permit and the provision of a SWPPP for stormwater and construction runoff.

#### California Department of Fish and Game (CDFG)

• In order to mitigate for potential on-site impacts to special-status or endangered species, the applicant shall obtain all necessary permits from CDFG.

# United States Fish and Wildlife Services (USFWS)

• Consultation or incidental take permitting may be required by project impacts, as well as Mitigation Programs. The applicant shall obtain all legally-required permits from the USFWS for the "take" of protected species under the Endangered Species Act (ESA).

# IV. ENVIRONMENTAL IMPACT ANALYSIS A. AESTHETICS

# INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of aesthetics with respect to the proposed Ascension Heights Subdivision project ("proposed project") and includes an examination of the existing visual character of the project site and the visibility of the project site from off-site viewpoints. The visual character of a project and site is typically evaluated with respect to its physical components and within the context of its neighborhood through an analysis of its compatibility with the land uses of the immediately surrounding areas. The inherent subjectivity of issues and values relative to visual character often makes it difficult to form a conclusive determination of what constitutes a "significant impact" under CEQA. Visual impacts are also analyzed through an examination of views and/or viewsheds. Viewsheds refer to the visual qualities of a geographical area. The geographical area is defined by the horizon, topography, and other natural features that give an area its visual boundary and context. Viewshed impacts are typically characterized by the loss and/or obstruction of existing scenic vistas or other major views in the area of the site which are available to the general public. View analysis is also based upon relative visibility with regard to viewing location and future development on-site.

# METHODOLOGY

The relative views of the project site were assessed by conducting a windshield field reconnaissance survey of the project site and surrounding areas on January 15, 2003 and February 5, 2003. Numerous site photos were taken during these surveys, within the project site and from various surrounding viewsheds orientated towards the site, in order to better analyze the representative views and the potential aesthetics impacts associated with the proposed project. Various view protection and open space policies as defined by San Mateo County were also reviewed and considered during the project impact analysis.

### **ENVIRONMENTAL SETTING**

The general topography of the San Mateo County area is characterized by sub-parallel, northwest trending mountain ranges and intervening valleys. The relatively flat-lying, alluviated San Francisco Bay plain is situated to the east, and the uplifted Santa Cruz Mountains are located to the west. The area in which the project site is located slopes down toward the northwest to Polhemus Creek and San Mateo Creek.

The 13.25-acre project site is located on the northeastern corner of Bel Aire Road and Ascension Drive in the unincorporated community of the San Mateo Highlands in the County of San Mateo just east of Interstate 280 (I-280) and north of State Route 92 (SR 92) (refer to Figures III-1, III-3, and III-4). The site is characterized as a hillside property that slopes steeply (25 percent to 95 percent grade), to a gentler slope toward the top of the hill (or knoll). A potable water tank (owned by California Water Service

Company (Cal Water)) and cell transmitter enclosed by fencing and surrounded by Monterey pine trees, are located at the top of the knoll.<sup>1</sup> The project site is relatively undeveloped with the exception of a paved service road that extends from Bel Aire Road at the site's northwestern boundary, providing access to the water tank and cell transmitter sites. Additional land disturbances to the site include cut slopes and shelves along the lower slopes and drainage structures above Ascension Drive and Bel Aire Road. These man-made alterations encompass approximately 0.25 percent of the overall site area. Further, the site is vegetated with native and non-native grasses, shrubs, and trees. Views of the project site are shown in Figure IV.A-1 through Figure IV.A-4.

The project site is immediately bounded by single-family residential homes to the north and east, Ascension Drive to the south, and Bel Aire Road to the west. The predominate land uses surrounding the site include single-family subdivisions, such as: Baywood Park subdivision to the northeast; the Enchanted Hills subdivision to the southeast and southwest; and the Starlite Heights subdivision to the northwest. .

#### Views of the Project Site from Off-Site Locations

The General Plan defines public views as: "a range of vision from a public road or other public facility." In the vicinity of the site examples of these would include, but not limited to: Parrott Drive, the College of San Mateo, Bel Aire Road, Ascension Drive, Los Altos Drive, Polhemus Road, I-280, and Bunker Hill Drive. The following discussion is based on an assessment of site visibility. The photographs presented in this discussion include views from vantage points in areas surrounding the project site from where the site is visible. In no way is this grouping of photographs meant as an exhaustive collection of all the views that include the project site from all the vantage points, but is meant to show representative views toward the site from the surrounding areas.

Views of the project site are available from a variety of surrounding locations, including short-range views from the roadways and neighborhoods directly adjacent to the site; medium-range views from the neighborhoods and the College of San Mateo that are in the vicinity of the site; and long-range views from distant vantage points.

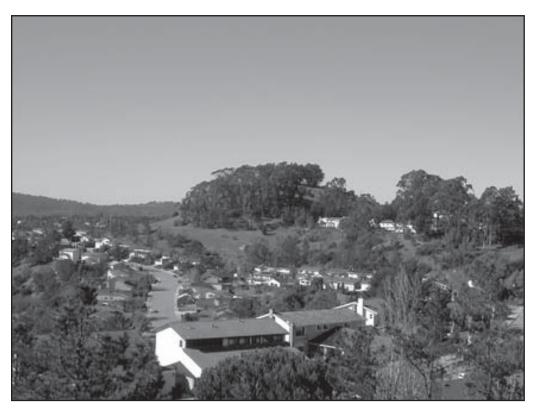
Representative short-, medium-, and long-range views of the site were photographed, with the location of vantage points shown in Figure IV.A-5, and the corresponding photographs shown in Figure IV.A-6 through Figure IV.A-7. A description of the existing views as seen in these photographs is provided below.

Figure IV.A-6 (View 1) is a medium-range view toward the southwest as seen from the College of San Mateo campus. A parking lot on the campus is visible in the foreground. Mature trees and vegetation that borders the parking lot, glimpses of single-family homes, and the landscaping associated with these homes is visible in the middleground. Just beyond these homes and landscaping, the top portion of the

<sup>&</sup>lt;sup>1</sup> These structures and the areas immediately surrounding the structures are not part of the project site.



A. Northern view of the project site from Polhemus Road.



**B.** Northwestern view of the project site from Londonderry Drive.



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Figure IV.A-1 Views of the Project Site



A. Northwestern view of project site from Ascension Drive.



**B.** Eastern view of project site from the intersection of Bel Aire Road and Ascension Drive.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-2 Views of the Project Site



**A.** View of the southern slope of the project site, with Ascension Drive and residential uses in the background.



**B.** Eastern view of the existing roadway that provides access from Bel Aire Road to the water tank at top of the hill.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-3 Views of the Project Site



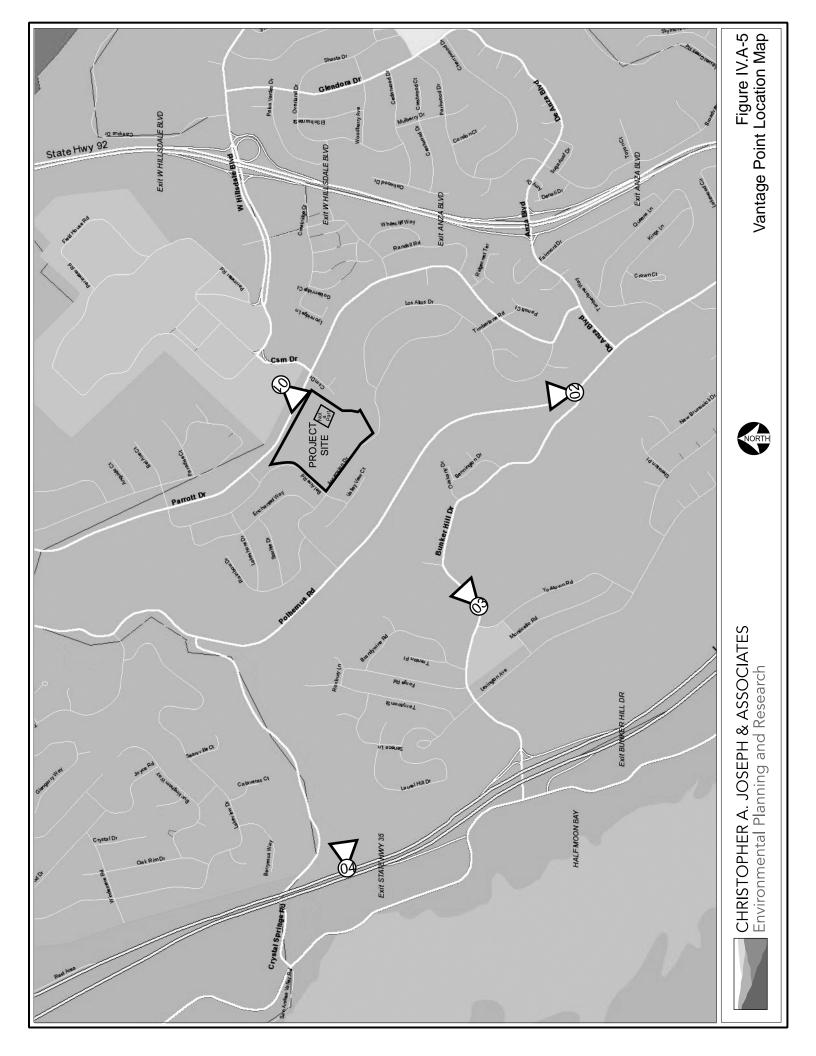
**A.** Eastern View of existing water tank located on the project site, which is not part of the proposed project.



**B.** Existing infrastructure related to the cell transmitter site.



Figure IV.A-4 Views of the Project Site





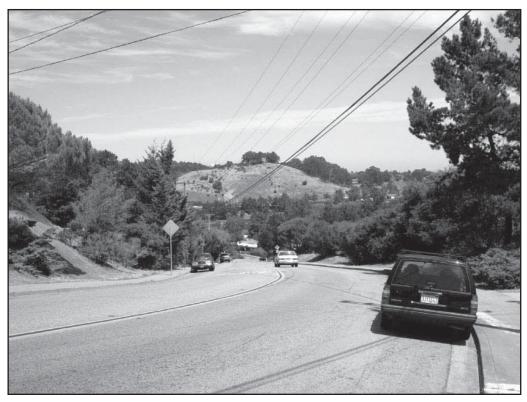
**View 1:** Existing view of the project site toward the southwest as seen from the western parking lots on the College of San Mateo Campus.



**View 2:** Existing view of the project site toward the north as seen from Polhemus Road.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-6 Representative Views of the Project Site



**View 3:** Existing northeast view of the project site as seen from Bunker Hill Drive.



View 4: Existing east view of the project site as seen from I-280.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-7 Representative Views of the Project Site project site is visible, with the Monterey pine trees that surround the water tank/cell site prominent in this view. Additionally, Cahill Ridge can be seen in the background.

Figure IV.A-6 (View 2) is a medium-range view toward the north as seen from Polhemus Road. Polhemus Road, adjacent road cuts, vegetated hillsides, and mature trees are visible in the foreground and middleground. The project site is visible in the center of the photograph, with a single-family home that is part of the adjacent neighborhood shown just below the site. The on-site Monterey pine trees surrounding the water tank/cell site and the eucalyptus grove can also be seen in this photograph.

Figure IV.A-7 (View 3) is a medium- to long-range view toward the northeast from Bunker Hill Drive. In the foreground and middleground, Bunker Hill Drive, power lines, and glimpses of single-family homes with mature landscaping are visible. The project site and surrounding single-family homes can be seen in the background.

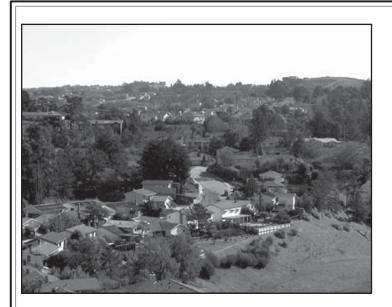
Figure IV.A-7 (View 4) is a long-range view toward the east from I-280. Hillsides covered with mature trees and other vegetation, with glimpses of single-family homes located along the ridgelines, are visible in the foreground. The project site can be seen in the background within the center of the photograph, with the grassland slopes and Monterey pine trees on the top of the hillside.

# Views from the Project Site of Surrounding Land Uses

Given the site's topography and elevation, a variety of views are available from the project site. From the lower to mid-level elevations, on nearly every side of the site, views of the surrounding single-family neighborhoods are prominent. Additionally, from the southeastern side of the site, the eucalyptus grove that straddles the project site boundary is prominent and partially obstructs views towards the southeast. The upper elevations of the project site afford several medium- to long-range views. To the west of the project site is the Crystal Springs Reservoir and to the northeast is the College of San Mateo. The southern part of the City of San Francisco is also visible to the north of the project site, when weather conditions permit. Refer to Figure IV.A-8 and Figure IV.A-9 for surrounding land use representations.

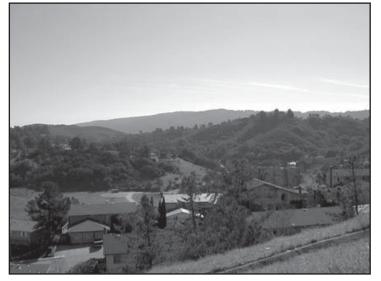
# Scenic Vistas

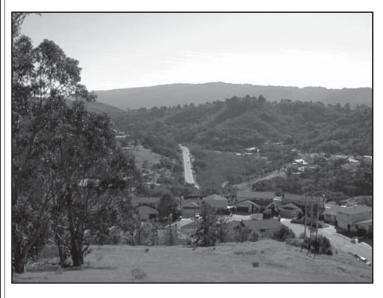
The San Mateo County General Plan does not define or include a description of scenic vistas. In general, a "scenic vista" is typically considered an aesthetically-pleasing view, as seen through an opening or passageway. The General Plan does not include a description or list of vantage points within the County from which vistas are considered "scenic," nor does the General Plan specifically identify the scenic vistas that are available from the County. Given the many steep-trending hillsides, hilltops, knolls, and ridgelines in the County, a multitude of general "scenic vistas" are available throughout the region. However, at several potential vantage points, various surrounding topographic characteristics partially obstruct these scenic vistas. Normally, scenic vistas in the County are viewed towards the direction of down-sloping terrain. Based on a reconnaissance of the greater area surrounding the project site, long-distance views of the site are largely obstructed by intervening topography. Further, due to the surrounding single-family homes and vegetation, portions of the project site are visually limited from



**A.** Southern view from the project site of existing residential uses.

**B.** Southwestern view from the project site of existing residential uses.

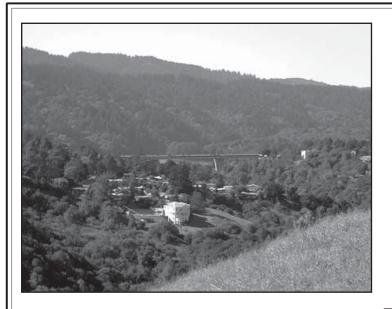




**C.** Southern view from the project site of residential uses and Polhemus Road.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-8 Views of Surrounding Uses



**A.** Western view from project site. Residential uses are in the foreground, I-280 is shown in the middleground, and Cahill Ridge is in the background.

**B.** Northeastern view of the College of San Mateo from the project site.





**C.** Northern view from the project site. Residential uses are in the foreground with South San Francisco shown in the background.



CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research Figure IV.A-9 Views of Surrounding Uses vantage points in the adjacent neighborhoods surrounding the site. These short-distance views are dominated with views of adjacent homes and associated landscaping, roadways, telephone poles, and signage. As such, these views do not fall under the definition of scenic vistas. Further, considering that the project site is elevated above the areas surrounding the site, any scenic views available from these areas are likely in a direction (downslope) away from the project site.

### **Scenic Resources**

In general, per the CEQA Guidelines for Aesthetics, scenic resources are thought of as objects, natural or manmade, that are aesthetically pleasing to view (i.e., trees, rock outcroppings, and historic buildings within a State Scenic Highway). The project site is located approximately 0.8 miles from I-280, which is designated as a State Scenic Highway from Santa Clara County to the northern City of San Bruno city limits.<sup>2</sup> Additionally, there are no rock outcroppings or historical structures located within the project site. Per the San Mateo County General Plan, visual resources are defined as: "those attractive visible elements of the natural and developed landscape, such as landforms, vegetative forms, water bodies, structures, and communities." Additionally, scenic corridors are defined as: "land adjacent to a scenic road right-of-way which, when seen from the road, provides outstanding views of natural landscapes and attractive man-made development." As further defined by the General Plan, scenic roadways are: "a designated travel route providing outstanding views of natural landscapes and attractive man-made development." The General Plan has designated several "scenic" roadways within the County. The project site is visible from portions of the County- and State-designated scenic roads listed below:

### **County-Designated Scenic Roads**

- Polhemus Road
- I-280 (from San Francisco to San Bruno)
- SR 92 (Half Moon Bay Road and J. Arthur Young Freeway)

### State-Designated Scenic Roads

• I-280 (from Santa Clara County to the northern City of San Bruno city limits)

Examples of County-designated important natural landscapes and attractive man-made development features provided in the General Plan include the following:

• unusual landforms (i.e., exposed rock faces, sea cliffs, steep noticeable slopes, etc.);

<sup>&</sup>lt;sup>2</sup> California Department of Transportation (CALTRANS), 2008, California Scenic Highway Program, List of Eligible and Officially Designated Routes. Accessed by CAJA Staff at http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm on October 2008.

- unique vegetative communities (i.e., large plants or trees, unusually large groups of plants, heritage trees);
- the coastline;
- streams;
- natural and man-made bodies of water;
- waterfalls;
- structures of architectural interest;
- attractive urban development;
- natural scenery in an urban setting; and
- open space areas where agricultural operations may be viewed.

Of the resources listed above, two are located on portions of the project site and include unique vegetative communities (i.e., large trees) and natural scenery in an urban setting. As discussed in Section IV.C (Biological Resources), the existing plant communities on the project site consist of a matrix of 3.3 acres of Coast Live Oak Woodland, 8.1 acres of Non-Native Annual Grassland, 1.4 acres of Coyote Brush Scrub, and 0.6 acres of Non-Native Ornamental Trees (i.e., 0.1-acre stand of planted Monterey pine (*Pinus radiata*) and 0.5 acres of blue gum (*Eucalyptus* sp.), respectively). The largest and most concentrated groupings of ornamental trees straddle the southeastern site boundary where there is a grove of blue gum (*Eucalyptus* sp.) trees. Additionally, a grove of Monterey pine trees surround the water tank/cell site. Depending on the vantage point of the viewer, portions of the project site could appear as natural, as seen in View 2 in Figure IV.A-6 and View 4 in Figure IV.A-7. However, other portions of the project site and areas encompassed by the project site have more utilitarian characteristics and evidence of erosion that subtract from the portions of the site that contain natural scenery.

### **Open Space**

Open space, as defined by Government Code Section 65560, is any parcel or area of land or water that is essentially unimproved and devoted to an open-space usage and that is designated in a local, regional or state open-space plan for preservation of natural resources, managed production of resources, outdoor recreation, or public health and safety.

The County-designated open space areas are overseen by the County Parks and Recreation Department, as well as in cooperation with the Mid-Peninsula Regional Open Space District. An open space land use designation is widely used by local agencies to preserve natural resources and protect important features, such as ridgelines. The General Plan establishes the uses that may be allowed on land with a General Open Space designation. Uses would be limited to resource management and production, recreation and limited residential or service. Although currently designed and zoned by the County as Medium-Low Density Residential (2.4 - 6.0 dwelling units (du)/acre) and R-1/S-8 (single-family residential/7,500 square foot minimum lot size), respectively; the project site currently consists of a largely undeveloped steep hillside, with on-site vegetation including grassland, small brush and trees. The only existing development on-site includes the potable water tank/cell parcel with associated fencing and a small access

road that connects to Bel Aire Road. However, this development is not part of the proposed project. The project site is located north/northeast of various noncontiguous County-designated Open Space and Resource Management (RM) areas, with areas situated south of residential uses along Ascension Drive, as well as patches radiating further south, including south of I-280 and Crystal Springs Reservoir. The majority of open space areas north of I-280 are segmented by existing developed uses (i.e., roadways, freeways, residential, public institutional, etc.).

### Ridgelines and Skylines

The General Plan defines ridgelines as: "the tops of hills or hillocks normally viewed against a background of other hills." While, skylines are defined as: "the line where sky and land masses meet." The views to the east and west from the project site include both ridges and skylines (and, to a lesser extent, to the north and to the south). Views to the north and south predominately include residential uses with ridgelines and skylines in the background. The project site contains numerous scenic hills and valleys, which offer outstanding views of the surrounding properties and the margins of the Bay.

### **Visual Character**

The General Plan defines visual quality as: "the visual attributes of natural landscapes, structures and communities." As stated previously, the largely undeveloped 13.25-acre project site is situated on a hillside with slopes averaging 40 percent (refer to Figure III-3). Surface elevation of the site ranges from approximately 410 to 610 feet above mean sea level (msl). Surface runoff water from the benches has eroded deeply (locally 10 feet plus) into the unconsolidated colluvial materials exposed on the cut slopes and benches. As discussed previously, the existing plant communities on the project site consist of Coast Live Oak Woodland, Non-Native Annual Grassland, Coyote Brush Scrub, and Non-Native Ornamental Trees (i.e., Monterey pine and blue gum eucalyptus). The largest groupings of eucalyptus trees straddle the southeastern site boundary, while the additional grove of Monterey pine trees surround the water tank/cell site, screening much of this location from on- and off-site views. A small abandoned quarry is also located in the outcrop of the hard sandstone northeast of the water tank. The quarry area is characterized by a crescent shaped, near vertical cut slope up to approximately 5 to 6 feet in height, with a mound of debris (tailings) located just downslope. The quarry cuts exposed sandstone bedrock beneath a thin veneer of soil. A few yards of rock was removed from this location at some time in the past. The potable water tank/cell site, enclosed by fencing and surrounded by the abovementioned Monterey pine trees, are located within the project site (APN: 041-111-020) and are served by a small access road that connects to Bel Aire Road. This parcel is not a part of the proposed project.

The visual character of the area surrounding the project site is predominately dominated by single-family residential uses, including: the Baywood Park neighborhood located to the northeast; the Enchanted Hills neighborhood to the southeast and southwest; and the Starlite Heights neighborhood to the northwest. These subdivisions generally include one single-family home per landscaped lot, with homes varying from one to two stories. The College of San Mateo is located less than 0.25 miles northeast of the project site off of Parrott Drive. Further, the project site is located north/northeast of various noncontiguous patches of County-designated Open Space and Resource Management (RM) areas.

### Light and Glare

There are currently no sources of light and glare on the project site as the project site is almost entirely undeveloped. Daytime sources of glare in the vicinity of the site include: reflections off of light-colored surfaces and windows associated with the surrounding residential and College of San Mateo uses; as well as reflections off of metal details on cars traveling along nearby roadways and within the parking lot at the College. Nighttime light sources in the vicinity of the site include: streetlights along Bel Aire Road and Ascension Drive; headlights of cars traveling nearby; outdoor and indoor lighting from the adjacent residential uses; and outdoor lighting from the College of San Mateo.

# **REGULATORY SETTING**

### Federal and State

Currently, no federal or state policies and/or mandates related to aesthetics exist. Therefore, in addition to the thresholds of significance outlined in Appendix G of the CEQA Guidelines, the local policies associated with view preservation and open space as defined by San Mateo County will be utilized for this analysis.

### Local

### County of San Mateo General Plan

The following County policies apply to the proposed project with respect to aesthetics:

#### 4.14 Appearance of New Development

- Regulate development to promote and enhance good design, site relationships and other aesthetic considerations.
- Regulate land divisions to promote visually attractive development.

### 4.20 <u>Utility Structures</u>

• Minimize the adverse visual quality of utility structures, including roads, roadway and building signs, overhead wires, utility poles, T.V. antennae, windmills and satellite dishes.

### 4.21 <u>Scenic Corridors</u>

• Protect and enhance the visual quality of scenic corridors by managing the location and appearance of structural development.

### 4.29 Landscaping and Screening

• Provide a smooth transition between development and adjacent forested or open space areas through the use of landscaping.

### 4.35 <u>Urban Area Design Concept</u>

- Maintain and, where possible, improve upon the appearance and visual character of development in urban areas.
- Ensure that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality.

### 4.36 Improving Visual Quality in Urban Areas

• Conduct special studies in unincorporated urban areas to identify and mitigate design problems in commercial and mixed density residential areas.

### 4.46 <u>Regulation of Development in Scenic Corridors</u>

• Institute special controls to regulate both site and architectural design of structures located within rural scenic corridors in order to protect and enhance the visual quality of select rural landscapes.

### 4.57 <u>Tree and Vegetation Removal</u>

- Allow the removal of trees and natural vegetation when done in accordance with existing regulations.
- Prohibit the removal of more than 50 percent of the tree coverage except as allowed by permit.

### 4.59 <u>Outdoor Lighting</u>

• Minimize exterior lighting in scenic corridors and, where used, employ warm colors rather than cool tones and shield the scenic corridor from glare.

### 4.60 <u>Roads and Driveways</u>

• Design and construct new roads, road improvements and driveways to be sensitive to the visual qualities and character of the scenic corridor, including such factors as width, alignment, grade, slope, grading and drainage facilities.

### 4.61 Parking and Paved Areas

• Integrate paved areas with their site and landscape and/or screen them to reduce visual impact from the scenic corridor.

### 4.62 <u>Storage Areas</u>

• Screen areas used for the storage of equipment, supplies or debris by fencing, landscaping or other means so they are not visible from scenic roadways, trails, parks, and neighborhoods.

### 4.64 <u>Utilities in County Scenic Corridors</u>

- Install new distribution lines underground.
- 9.40 <u>Maintenance of the Open Space Character of Lands Designated as General Open Space</u>
  - Wherever possible, maintain the open space character of lands designated as General Open Space through acquisition and/or performance standards for locating new development.

# **ENVIRONMENTAL IMPACTS**

### **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact related to aesthetics if it would:

- a) Have a substantial adverse effect on a scenic vista;
- b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a state scenic highway;
- c) Significantly degrade the existing visual character or quality of the site and its surroundings; or
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

As discussed above and provided in Section V.C (Impacts Found To Be Less Than Significant) of this DEIR, the potential impacts associated with Threshold (a) listed above were determined to result in a less-than-significant impact. Therefore, only Thresholds (b), (c), and (d) listed above are addressed in the following discussion. Additionally, the temporary construction-related aesthetics impacts are also considered below.

# **Proposed Project**

The project applicant proposes to subdivide 6 legal parcels (i.e., APNs: 041-111-130, -160, -270, -280, -320, and -360), which make up the proposed project site (excluding the water tower and cell site, APN: 041-111-020), into 25 single-family residential lots. The 25 lot sizes would range from 10,120 to 17,590 square feet (or 2.8 du/acre), where appropriate, for a total of 291,256 square feet lot area, which represents approximately 50 percent of the area within the project site. Each lot would be developed with one single-family house. Design of the structures is not available at this time and would be proposed after the Tentative Map is approved; although, proposed structures would be designed to be similar to those surrounding single-family residential uses. There are no specific landscaping plans proposed at this time. However, the intent is to utilize drought-tolerant, native vegetation in order to restore areas within the site The proposed project would also include approximately 98,102 square feet to a natural habitat. (approximately 17 percent of the total project site) of on-site private roadways, including the main private access road, the Emergency Vehicle Access (EVA) road and the new water tank access road. Further, the proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. Grading activities would include cut (earth removal) and fill of earthwork, creation of engineered slopes and stepped foundations, installation of retaining walls. Approximately 131,480 cubic yards (cy) of earth material would be graded for the proposed project on slopes averaging 40 percent (see Figure III-18). Specifically, the grading phase of the proposed project would require approximately 96,000 cy of cut material (with a maximum depth of 25 feet) and 35,480 cy of fill material (with a maximum depth of 10 feet). Approximately 60,520 cy of soil would be exported from the site to an off-site location. Refer to Figure III-12 and Figure III-18 for an overview of the proposed project layout and grading plans.

# **Project Impacts and Mitigation Measures**

# Impact AES-1 Substantially Damage Scenic Resources, Including, but not Limited to Trees, Rock Outcroppings, or Historic Buildings within a State Scenic Highway

The proposed project would result in a significant aesthetics impact if it would substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a State Scenic Highway. As stated previously, the project site is located approximately 0.8 miles from I-280, which is an officially-designated State Scenic Highway from Santa Clara County to the northern city limits of the City of San Bruno. Additionally, there are no rock outcroppings or historical structures located within the project site. The General Plan defines a scenic corridor, "...as land adjacent to a scenic road right-of-way, which, when seen from the road, provides outstanding views of natural landscapes and attractive man-made development." As further defined by the General Plan, scenic roadways are: "a designated travel route providing outstanding views of natural landscapes and attractive man-made development." Portions of the project site are visible from three County-designated scenic roads, including Polhemus Road, I-280 (from San Francisco to San Bruno), and SR 92 (Half Moon Bay Road and J. Arthur Young Freeway), and one State-designated scenic road, I-280 (from Santa Clara County to the northern City of San Bruno city limits). Additionally, of the County-designated important natural landscapes and attractive man-made development features provided in the General Plan, two are located

on portions of the project site and include unique vegetative communities (i.e., large trees) and natural scenery in an urban setting.

Implementation of the proposed project would result in considerable grading of the site, removal of the existing drainage structure and some vegetation and trees, repair of areas of erosion and, the development of 25 single-family homes with associated on-site roadways (main private road and EVA road) and landscaping on the project site (refer to Proposed Project discussion above). Figure IV.A-6 (View 2) provides an existing view of the project site as seen from Polhemus Road, while Figure IV.A-7 (Views 4) include a representative existing view of the project site as seen from I-280. Based on a review of the Vesting Tentative Map (Figure III-12), outlining the location of the proposed development, in relation to the abovementioned existing site views (i.e., Views 2 and 4) and from SR 92, post-project conditions would be noticeable from portions of the County- and State-designated roadways provided above; as the partially undeveloped hillside would be replaced with single-family homes, landscaping and associated infrastructure. However, the segment distance in which the project site and proposed development similar to existing single-family residential uses surrounding the site. A discussion of the impacts to views from portions of these County- and State-designated scenic roadways and the scenic resources associated with the project site are discussed below.

# Polhemus Road

From northbound Polhemus Road, portions of the project site are visible for a short distance from the roadway's intersection with Bunker Hill Drive. Views of the site post development would include partial views of the EVA road and the on-site looping roadway, as well as views of the proposed residential uses (specifically lots on the southeastern portion of the site) and conservation areas. The Monterey pines associated with the water tank/cell site would remain, as seen at the top of the project site hill in Figure IV.A-6 (View 2). The proposed residential uses would be similar to those adjacent to Ascension Drive and would use landscaping (i.e., trees, shrubs) and conservation areas to buffer off-site views, thereby maintaining a compatible design to surrounding uses.

# *I-280 (from San Francisco to San Bruno and from Santa Clara County to the northern City of San Bruno city limits)*

Both northbound and southbound I-280 provide long-range eastern views in which portions of the project site are visible for approximately 0.10 miles as the freeway passes over San Mateo Creek (refer to Figure IV.A-7 (View 4)). Post development views would include long-distance views of the southern portion of the proposed residential uses, conservation areas, and private looping roadway and glimpses of the western portion of the EVA road. As stated above, these uses would be designed to be compatible with surrounding development and would utilize landscaping to conceal uses (specifically roadways and residential homes) from off-site viewsheds. As landscaping matures, when viewed from this segment of I-280, the proposed project would be similar to surrounding viewsheds and uses (i.e., landscaping, mature trees, and glimpses of single-family homes).

# SR 92 (Half Moon Bay Road and J. Arthur Young Freeway)

Brief glimpses of the project site are visible in long-range views from SR 92 for a short distance south of the College of San Mateo exit. Views post development would include views of the existing Monterey pines and water tank/cell site development (not part of the proposed project), the eastern portion of the main access roadway and the northeastern proposed residential uses. When viewed from this segment of roadway, the new development with associated landscaping would resemble and blend with the surrounding developed uses. Additionally, sloping topography as you head northwest from this roadway further conceals the proposed development.

Overall, views of the project site from the roadway segments discussed above constitute a very small portion of the field of view, and while development on the project would be noticeable, the project would not affect the overall value of the views from the roadways.

As stated previously, the scenic resources found on portions of the project site include large trees and natural scenery. Implementation of the project would result in the alteration of portions of the project site that have a "natural scenery" appearance. Implementation of the proposed project would result in the removal of trees and sensitive vegetation communities (i.e., Coast Live Oak Woodland) that are found on the site. Per Section IV.C (Biological Resources), the proposed project would result in the removal of 37 trees. All of the large pine trees on the project site would remain in place. The 37 trees proposed to be removed did not qualify to be Heritage Trees as defined by the County of San Mateo Heritage Tree Ordinance. Albeit, some of these trees may be defined as Significant Trees, as the circumference of several trees may exceed 38 inches. Further, the proposed project would result in the removal of approximately 2.8 acres of Coast Live Oak Woodland. The removal of this oak woodland represents a loss of approximately 85 percent of the total 3.3 acres of this community on the site. This was considered to be a potentially significant impact. However, mitigation has been included in the DEIR to reduce impacts to a less-than-significant level, including Conservation Easements, Tree Mitigation and Monitoring Plan and Tree Replacement Program.

Conversely, other portions of the project site and areas immediately surrounded by the site exhibit more utilitarian characteristics, such as: the on-site existing access road; the drainage structures; the water tank/cell site and associated fencing; and evidence of erosion that further subtracts from the visual quality of the portions of the site that contain natural scenery. Considering the project site as a whole, the natural scenery on the project site is not considered a significant scenic resource. Further, in addition to "natural scenery in an urban setting" being a scenic resource, "attractive urban development" also falls under this definition. Based on information from the General Plan, views that include "attractive urban development" are considered scenic. Overall, the final project design (i.e., landscaping and residential homes) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes and landscaping would be designed and constructed to be compatible with or contribute to the appearance and visual character of the surrounding area. Further, much of the lower elevations of the project site would be designated as conservation areas, with the exception of some grading to reduce erosion.

As discussed previously, the proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. The tot lot and trails would be available for use by the general public. The 0.45-acre (19,602-square foot (sf)) proposed undisturbed and protected area would be included within the southwest corner of the project site. The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. Trails 1 and 2 would consist of 5-foot diameter pathways that would transverse the northern portion of the site and the proposed common area/conservation area, respectively. The above recreation and open space amenities would reduce the project's demand for parks and recreation services. The tot lot would consist of approximately 8,365 square feet and would be located near the project's main site entrance on the northeastern side of the new private street adjacent to Lot 1.

Through compliance with the above items, the project would fall under the definition of "attractive urban development" and would contribute to the scenic nature of views seen from portions of the above County-designated scenic roadways, specifically from Polhemus Road. As such, although portions of the site with natural scenery would be removed, these areas would be replaced with "attractive urban development."

### **Open Space**

As discussed above, the proposed development would include conservation areas, trails and residential uses that compliment and blend with the surrounding development. The conservation areas would represent approximately 31 percent of the total project site. Additionally, a 0.45-acre proposed undisturbed and protected area would be included within the southwest corner of the project site. This area would be maintained through the implementation of a conservation easement. This area would be the responsibility of the HOA with regards to maintenance. A formal agreement would be determined at a later date. The landscaping of the conservation areas is not determined at this time; however, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat, including a provision for a nature trail. These areas will be open to the subdivision residents and the general public. Further, the proposed project would not impact or detract from the patches of noncontiguous surrounding County-designated Open Space and Resource Management (RM) areas. Therefore, impacts to open space as a result of the proposed project would be *less than significant*.

Overall, for the reasons stated above, the project would not have a substantial adverse effect on scenic resources. Thus, project impacts on scenic resources would be *less than significant*.

Although impacts would be *less than significant*, the following mitigation measures are recommended to further reduce any adverse impacts.

### Mitigation Measure AES-1

- In addition to the required site Conservation Easements, Tree Replacement Program and Tree Mitigation and Monitoring Plan (refer to Section IV.C, Biological Resources; Mitigation Measures BIO-2a, 2b and 2c), off-site visual impacts shall be considered during the development of the designated Tree Replacement Program and Tree Mitigation and Monitoring Plan, where landscaping shall be designed by the Applicant's arborist in coordination with the County Community Development Director to buffer on-site development (i.e., residential and roadway uses), as well as to assist with screening of the light and glare of the proposed lights from off-site surrounding viewsheds. Depending on the time of day and year, the new non-deciduous trees could result in temporary shadows in the immediate downhill project vicinity as the trees and vegetation mature.
- To the extent feasible, trees and shrubs shall be selected to aid in the screening of structures from off-site. Native landscaping species shall be used in the landscaping plan. However, non-native, fast growing trees and shrubs could be used within building areas to promote interim screening.
- To the extent possible, environmental conditions shall be maintained to sustain native species. Particular attention shall be given to utilize xeric landscaping and to retain or plant native landscape buffers at key visual access points.
- A detailed landscape and irrigation plan for general subdivision and common areas anticipated to be landscaped shall be submitted for County review, prior to approval of the Final Map.

# Impact AES-2 Significantly Degrade the Existing Visual Character or Quality of the Site and its Surroundings

A significant impact may occur if a proposed project introduces incompatible visual elements on the project site or visual elements that would be incompatible with the character of the area surrounding the project site.

Depending on the vantage point, the project site's visual character can appear natural, given the lack of development on the site and presence of grasses and scattered shrubs and trees. However, other vantage points show that the site appears somewhat utilitarian and disturbed, given the presence of the roadway, drainage structures, evidence of erosion and the water tank/cell site that are located on or surrounded by the project site. Overall, considering all the characteristics of the site, the character of the project site does not fall into one classification, but rather can be categorized as having a mixed character: natural, utilitarian, and disturbed. Further, viewing the project site in context with its surroundings, the site appears as an undeveloped parcel in a well-established, rather extensive, single-family residential neighborhood, which predominately defines the visual character of the area. The College of San Mateo is located approximately 0.25 miles to the north of the project site and adds a somewhat urban character to the primarily suburban character of the area. Further, small patches of County-designated RM areas are located in surrounding areas, but are mainly dominated by the abovementioned uses.

Development of the project as proposed would result in changes to the existing character of the site. Given the site's topography and elevations, post development views of the southern portion of the project site from residential uses along Ascension Drive and further south (i.e., Polhemus Road and Bunker Hill Drive, refer to Figure IV.A-6 (View 2)) would include differing views depending on distance and orientation from the site, but would mainly include a combination of views of the proposed residential structures visible on Lots 11 through 25, the Lot "A" common areas/conservation area, a portion of Trail 2, the southern portion of the main access road and the EVA road. Views toward the northern portion of the project site from residential uses along Parrott Drive and the College of San Mateo parking areas (refer to Figure IV.A-6 (View 1)) would include views of a portion of the project's main access road, the Lot "B" tot lot, Trail 1 and Lots 1 through 6, and glimpses of Lots 7 through 13. Further when viewed from off-site uses, the proposed residential structures and rooftops would be visible intermixed amongst the existing and proposed vegetation, as well as shielded by existing off-site, adjacent mature vegetation that lines the northern site boundary. Views of the eastern portion of the project site from residential uses along Los Altos Drive, a segment of Ascension Drive, CSM Drive and areas further east would differ depending on the location of use and orientation to the site, due to the surrounding existing uses, topography and mature vegetation bordering the eastern boundary of the site. Visible development proposed within the eastern portion of the site would include residential structures associated with Lots 4 through 8, 16 and 17 and 21 through 25, as well as the eastern portion of the main access road, the EVA road and a portion of the Lot "A" common areas/conservation area. Views would be limited from CSM Drive and Los Altos Drive due to the existing vegetation, with uses along a portion of Ascension Drive provided with views of the southeastern portion of the proposed development. The western portion of the project site as seen from residential uses along Bel Aire Road and further west would include views of the proposed undisturbed and protected area, the western portion of the Lot "A" common areas/conservation area, Trail 2, Lot "B" tot lot, the main access road and residential structures on Lots 1, 2, 9-15, and 18-21. The existing water tank and surrounding Monterey pine trees would remain visible from the north, south, east and west and would provide a buffer to proposed segments of development depending on orientation from the site.

Although the existing character of the site would be altered by the project, the change would not be a substantial degradation. Implementation of the project would result in the development of 25 single-family residential land uses and 36 percent (4.76 acres) of conservation and recreation areas on the project site that are similar to the land uses found adjacent to and in the vicinity of the site. Further, the proposed project would include site drainage improvements, which would improve the existing eroded "open space" areas (refer to Figure III-3 and Figure III-18) for further use as the proposed restored common areas/conservation area. As discussed previously under Impact AES-1, the project applicant would be required to comply with all applicable County visual quality policies, which would, "…promote and enhance good design, site relationships, and other aesthetic considerations," and would, "…promote visually attractive development." Further, the project applicant would also be required to replace trees that would be removed from the site at a ratio to be determined in coordination with the County Community Development Director (refer to Mitigation Measure AES-1 above). For these reasons, the project would not result in a substantial degradation to the visual character of the project area. Therefore, project impacts on the visual character of the surrounding area would be *less than significant* and no

mitigation measures are required. Although no mitigation measures are required, implementation of Mitigation Measure AES-1 and Mitigation Measure AES-3 (mentioned below) would further reduce any adverse project impacts on the existing visual character and quality of the site and its surroundings.

# Impact AES-3 Create a New Source of Substantial Light or Glare which would Adversely Affect Day or Nighttime Views in the Area

A significant impact may occur if a project introduces new sources of light or glare on the project site, which would be incompatible with the areas surrounding the project site or which pose a safety hazard, such as to motorists utilizing adjacent streets. As previously discussed, there are currently no sources of light and glare on the project site as the project site is almost entirely undeveloped.

Some increase in the illumination of the site would be unavoidable from the proposed project development. The proposed development would introduce evening light to the site through interior and exterior illumination of structures, associated infrastructure, street lights (through proposed annexation into the County Bel Aire Lighting District through LAFCO; refer to Section IV.F, Land Use & Planning), and through light and glare from vehicles. Without adequate treatment, regular constant light sources, such as the lights of regularly spaced houses or streetlights, could have an impact on the surrounding existing developments. Further, although the majority of illumination from this development would be directly visible by the surrounding adjacent developments, indirect views of a subtle glow from various off-site distant surrounding locations would also be available.

Reflected light from buildings and vehicles would create an additional source of glare. Building materials, including roofs and windows have the potential to reflect light. Reflections could potentially be seen from substantial distances in bright sunlight. Due to the orientation and elevation of the main access road, glare from vehicles within the site could also be seen from off-site areas. Without mitigation, the glare from development-associated windows and architectural surfaces could cast bright reflections to the surrounding areas.

The introduced light and glare from the proposed project would be similar to the sources that already exist in the project area, such as interior and exterior building lighting and vehicle headlights, reflective surfaces(such as windows), and light colored exterior paint. Excessive illumination would be avoided and lighting would be shielded and placed so as to prevent glare and reflection or intrusion onto neighboring properties. The introduction of additional light and glare from the new development would be noticeable to viewers in the surrounding area, particularly by residents in the neighborhoods immediately surrounding the site and people driving along Ascension Drive and Bel Aire Road. Because much of the proposed development is situated on the upper elevations of the site, new light and glare sources would also be visible from distant roadways such as SR 92 and I-280. However, due to the distance from the project site of these roadways and the orientation, elevation and relatively small size of the project, the introduced light and glare would not shine directly into the eyes of drivers and motorists on these roadways. Further, the final project design (i.e., residential homes and lighting plans) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes, as well as Bel Aire Lighting District standards, and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes, roadways streetlights, and associated lighting plans would be designed and constructed to be compatible with the surrounding area. Therefore, project impacts related to light and glare would be *less than significant*.

Although impacts would be less than significant, the following mitigation measure is recommended to further reduce any adverse impacts.

# Mitigation Measure AES-3

- Reflective glass or other glaring materials shall be discouraged. The exterior of the proposed building shall be constructed of non-reflective materials such as, but not limited to: high-performance tinted non-reflective glass, metal panel, and pre-cast concrete or cast in-place or fabricated wall surfaces. The proposed materials will be reviewed and approved by the Community Development Director prior to approval of the Final Map.
- Where streetlights or outdoor area lighting is proposed, the lighting shall be of a low-intensity variety. Residential lighting would be kept to a minimum to meet safety standards, reduce light and glare. Lighting paths, entranceways, and outdoor living areas shall be directed downward to reduce nuisance to adjacent properties. Selection of specific lighting standards for the development would be based on minimizing ambient light.
- In addition to Mitigation Measure AES-1, tree planting shall be required along the internal roadways and within the project site where effective at softening the effects of light and glare from cars and structures.

# Impact AES-4 Temporary Construction/Grading Impacts

The proposed project would consist of demolition of the existing site access road and various drainage features and development of a 25-lot residential subdivision and associated amenities. The project site is surrounded by existing development (i.e., residential areas and roadways, and the College of San Mateo) and segmented patches of County-designated Open Space and Resource Management (RM) areas; therefore, construction activities would be visible from the surrounding land uses, including adjacent residential uses.

Due to the scope and complexity of the grading and utilities, all work proposed on the Vesting Tentative Map (refer to Figure III-12) is proposed to be complete in one phase. The grading phase would require approximately 34 to 44 days for completion, with the appropriate utility infrastructure added after this phase. As discussed previously, grading activities would include cut (earth removal) and fill of earthwork, creation of engineered slopes and stepped foundations, installation of retaining walls. Approximately 131,480 cy of earth material would be graded, with 96,000 cy of cut material and 35,480 cy of fill material. Approximately 60,520 cy of soil would be exported from the site to an off-site

location. The construction of the new private street would require an additional 6 months post the grading phase. All utility stubouts would be completed as part of the one phase tract improvements. The building schedule and phasing of the individual houses has not yet been determined; however, it is assumed for this analysis that buildout would be completed in 4.5 - 5 years (or 2013).

During project construction, dump trucks and other trucks hauling demolition or grading materials from the project site would be required to access the site via local roadways (refer to Section IV.I, Transportation/Traffic; Impact TRANS-6). Trucking would also be required for the delivery and removal of excavation equipment, other machinery, and for the delivery of materials. As with on-site activities, the visual aspect of trucks loaded with debris and/or soils may be interesting to some viewers and unsightly to others. Proposed access to the site for dump trucks, semi-trailers, and truck and trailers in the removal of construction debris and excavated soils and delivery of heavy equipment would occur via SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road.

Daily construction times would be restricted to between the hours of 8:00 AM and 4:30 PM Monday through Friday. No activity or staging shall occur outside these hours. Further, to minimize impacts to traffic and public safety, truck traffic for soil export from the project site shall be limited to between the hours of 10:00 AM and 3:00 PM. Demolition and construction are prohibited on weekends and all federal holidays unless an alternative schedule is deemed to be necessary by the County in order to expedite construction.

Development within the above one-phase would be coordinated with surrounding land uses, vehicular circulation, emergency access routes, and pedestrian systems, so that visitors are clearly guided and that there are logical transitions within the circulation network. As outlined in Section IV.I (Transportation/Traffic), temporary "truck crossing" signs shall be placed in both directions on Bel Aire Road near the site entrance. Flagmen shall be used, as necessary, to control traffic during the arrival and departure of trucks and equipment. Further, during the construction period, there would be temporary construction fencing installed on-site to screen most activities from adjacent, surrounding uses. All construction staging would occur within the project site boundaries, including the requirement that all associated construction workers shall park on-site (i.e., no parking on Bel Aire Road or Ascension Drive).

As stated above, all construction activities would cease after 4:30 PM, Monday through Friday, unless an alternative schedule is deemed to be necessary by the County in order to expedite construction. Although not anticipated at this time, in this event, short-term light and glare impacts associated with construction activities would likely be limited to nighttime lighting (for security purposes) in the evening hours. All construction-related lighting would be located and aimed away from adjacent areas and would consist of the minimal wattage necessary to provide safety at the construction site. Lighting shall comply with standards outlined in the County Ordinance Code. Residential uses adjacent to the site may be impacted as a result of nighttime security lighting used during construction activities.

Thus, for the abovementioned reasons, construction-related visual impacts would be *less than significant* and no mitigation measures are required.

# **CUMULATIVE IMPACTS**

Most of the 22 related projects listed in Table III-1 are far enough away that potential cumulative impacts to visual quality resulting from implementation of these projects in conjunction with the proposed project would not be an issue. Of the related projects, the following seven projects are located in close proximity to the project site and are considered in this discussion:

- Water supply pipeline improvement (Project No. 1);
- College of San Mateo Facilities Master Plan (Project No. 2);
- Residential Development (Project No. 3);
- Crystal Springs Pipeline #2 (SFPUC) (Project No. 5);
- Crystal Springs Bypass Tunnel (SFPUC) (Project No. 6);
- Verona Ridge (Project No. 8); and
- San Mateo Executive Park (Project No. 22).

These related projects, along with other residential, commercial and infrastructure projects listed in Table III-1 would incrementally add to urban development and corresponding visual impacts in the region.

Given that the water supply pipeline improvement projects (Project No. 1 and 5) would be developed under Polhemus Road and Crystal Springs Road, no scenic resources would be affected, and the projects would not adversely alter the visual character of Polhemus Road, Crystal Springs Road or surrounding areas and would not include any sources of light and glare.

The College of San Mateo Facilities Master Plan ("Master Plan") includes several construction projects that would upgrade the infrastructure on the campus. Most of the projects include expansion of utility infrastructure and renovation of existing uses that would serve to improve the visual quality of the campus. The Master Plan does include the development of two new structures, a 9,244-square-foot (sf) Regional Public Safety Center and a 55,000-sf Science Building. However, the Safety Center would be constructed on the northern side of the campus, away from the proposed project, and the Science Building would be constructed on the interior of the campus. Both of these structures would be located in areas that are already developed with other uses and include existing sources of light and glare. Neither of these structures would be visible within the same viewshed as the project. Thus, implementation of the Master Plan in conjunction with the proposed project would not result in cumulative impacts to scenic resources or the visual character or quality of the College of San Mateo and surrounding areas.

The residential development (Project No. 3), comprising 99 acres and development of 11 dwelling units, in additional to Verona Ridge (Project No. 8), a 34-unit residential subdivision, would cumulatively contribute to aesthetics impacts similar to the proposed project. As with the proposed project, these residential projects would also be subject to County and City-related visual policies to ensure impacts would be less than significant and compatible with the surrounding uses. Due to the distance from the proposed project and surrounding topography, these related projects would not be in the same direct

viewsheds as the proposed project. As such, no cumulative scenic resources would be affected by these projects, the related projects would not adversely alter the visual character of the sites or surrounding areas and light and glare impacts would be less than significant.

The Crystal Springs Bypass Tunnel Project (Project No. 6) includes construction of a tunnel riser, vault, piping and the use of related mechanical equipment. However, due to the distance from the site and surrounding topography, this related project would not be in the same viewshed as the proposed project. Hence, no cumulative visual character and scenic resource impacts would occur. Additionally, light and glare impacts would be temporary in nature during construction and would be minimal during the operation phase; therefore, cumulative light and glare would be less than significant.

The San Mateo Executive Park Project (Project No. 22) includes interior and exterior renovations to the existing office buildings located on the 22-acre project site. Interior tenant improvements are currently under demolition and construction. Because the project would not result the development of new structures, no scenic resources would be affected, and the project would not adversely alter the visual character of the Hillsdale Boulevard or surrounding areas and would not include any new sources of light and glare.

Overall, the abovementioned related projects would not result in any significant impacts on scenic resources, the visual character or quality of the site and its surroundings, or new sources of light and glare, and thus, the proposed project's contribution to any potential cumulative aesthetics impact would not be considerable. Overall, for the reasons stated above, cumulative aesthetics impacts would be *less than significant* and no mitigation measures are required. Although no mitigation measures are required, implementation of Mitigation Measures AES-1 and AES-2 would further reduce the proposed project's contribution to cumulative impacts on visual resources.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

All aesthetics impacts would be *less than significant*.

# IV. ENVIRONMENTAL IMPACT ANALYSIS B. AIR QUALITY

# **INTRODUCTION**

This section of the Draft Environmental Impact Report (DEIR) examines the degree to which the proposed Ascension Heights Subdivision project ("proposed project") may result in significant adverse changes to air quality. Supporting data for this analysis is provided in Appendix D of this DEIR. Both short-term construction emissions occurring from activities such as site grading and haul truck trips, as well as long-term effects related to the ongoing operation of the proposed project are discussed. This section has been prepared in accordance with the most recent version of the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines.

The Federal Clean Air Act (Federal CAA) governs air quality in the United States and is administered by the United States Environment Protection Agency (U.S. EPA). 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 (California CAA), which is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area.

# METHODOLOGY

The analysis contained herein focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. "Emissions" refers to the actual quantity of pollutant, measured in pounds per day (ppd). "Concentrations" refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm) or micrograms per cubic meter ( $\mu$ g/m<sup>3</sup>).

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the proposed project. Air pollutant emissions associated with the proposed project would result from operation of the proposed development and from project-related traffic volumes. Construction activities would also generate emissions at the project site and on roadways resulting from construction-related traffic. The net increase in project site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the BAAQMD (see Project Impacts and Mitigation Measures subheading, below).

# **ENVIRONMENTAL SETTING**

# **Climate and Topography**

The climate in the Bay Area is mainly characterized by warm dry summers with abundant sunshine and cool moist winters with variable cloudiness. The proximity of the Pacific Ocean and San Francisco Bay has a moderating influence on the areas climate. The major large-scale weather feature controlling the

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 and located off the west coast of the United States during summer. 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 (msl), depending on the warmth of the air column, 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 Bay Area during the evening hours when onshore winds are strongest and solar heating begins to wane. As the land warms the following morning when onshore winds are weakest, the clouds often dissipate, except along the immediate coast. The stratus then redevelops and moves inland late in the day. Otherwise, clear skies and dry conditions prevail during summer.

As winter approaches, the Pacific High becomes weaker and shifts south, allowing both low and high pressure systems associated with the polar jet stream to affect the region. Low pressure systems are usually accompanied by frontal systems that 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. 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.

Annual average wind speeds range from about 5 to 15 miles per hour along the Peninsula with higher wind speeds along the coast, ridgetops and through gaps in the coastal hills. Wind monitoring data recorded in the City of San Carlos indicates the wind speed averages approximately 5 miles per hour during the early morning (from 4:00 AM to 5:00 AM) and approximately 10 miles per hour during the afternoon (from 4:00 PM to 5:00 PM). Stronger and gustier winds are common at the project site, which lies at the top of a hill.

Temperature in the project vicinity and surrounding area averages approximately 59 degrees Fahrenheit annually. Summer maximum temperatures at the project site are typically in the 70's and 80's, with low temperatures in the 50's. In winter, high temperatures are typically in the 50's and lows are in the high 30's and low 40's. Total precipitation in the project areas averages approximately 20 to 25 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer.

### **Air Pollution Potential**

The clear skies with relatively warm conditions that are typical in summer combine with localized air pollutant emissions to elevate Ozone ( $O_3$ ) levels. Air quality standards for  $O_3$  traditionally are exceeded when relatively stagnant conditions occur for periods of several days during the warmer months of the year. Weak wind flow patterns combined with strong inversions substantially reduces normal atmospheric mixing. Key components of ground-level  $O_3$  formation are sunlight and heat; therefore,

significant  $O_3$  formation only occurs during the months from late spring through early fall. Air pollution potential in the project area is not as high as other parts of the Peninsula because wind speeds are generally fast enough to mix out pollutants. However, pollutants emitted in the area are transported down-wind, typically towards the southeastern part of the Peninsula and Santa Clara Valley where air pollution potential is much higher. In summer,  $O_3$  and  $O_3$  precursor pollutants are often transported into the Santa Clara Valley from the central portions of the Bay Area, such as San Mateo. Light winds that are common in winter combine with strong surface-based inversions, caused by cold air trapped near the surface, to trap pollutants such as particulates (e.g., wood smoke) and Carbon Monoxide (CO). This can lead to localized high concentrations of these pollutants.

### Air Monitoring Data

The BAAQMD monitors air quality conditions at over 30 locations throughout the Bay Area. The Redwood City Monitoring Station monitors air quality within the County of San Mateo, and therefore, is the station most representative of the project site.

Criteria pollutants monitored at the Redwood City Monitoring Station include  $O_3$ , CO, nitrogen oxides (NO<sub>X</sub>), hydrocarbons, Respirable Particulate Matter (PM<sub>10</sub>) and Fine Particulate Matter (PM<sub>2.5</sub>). A summary of the data recorded at the Redwood City Monitoring Station is shown in Table IV.B-1 for the period 2005 through 2007. Table IV.B-2 shows the number of days that concentrations exceeded ambient air quality standards during that period. No exceedances of the National Ambient Air Quality Standards (NAAQS) were recorded at this station with the exception of one PM<sub>2.5</sub> exceedance in 2006. Measured concentrations of  $O_3$ , CO and Nitrogen dioxide (NO<sub>2</sub>) did not exceed the NAAQS or California Ambient Air Quality Standards (CAAQS) between the years 2005 and 2007. However, measured concentrations of PM<sub>10</sub> exceeded the State standards during the 3-year period. The State standard for PM<sub>10</sub> was exceeded on one to two sampling days annually during the period 2005 through 2007. Throughout the Bay Area, the National standard for O<sub>3</sub> was exceeded on 4 to 18 days annually for the 8-hour standard. The more stringent State O<sub>3</sub> standard was exceeded on 9 to 22 days annually. The State PM<sub>10</sub> standard was exceeded on 4 to 13 sampling days annually. The Basin summary data for PM<sub>2.5</sub>, to date is not available.

### **Attainment Status**

The Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level  $O_3$  and State standards for  $PM_{2.5}$ . For  $O_3$ , the entire Bay Area is designated *non-attainment* at both the Federal and State levels.

Pollutont		Measured Air Pollutant Levels			
Pollutant	Average Time	2005	2006	2007	
Redwood City	•		•		
Ozone (O <sub>3</sub> )	1-Hour	0.084 ppm	0.085 ppm	0.077 ppm	
$Ozone (O_3)$	8-Hour	0.062 ppm	0.063 ppm	0.070 ppm	
Carbon Monoxide (CO)	8-Hour	2.26 ppm	2.44 ppm	2.33 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	1-Hour	0.062 ppm	0.069 ppm	0.057 ppm	
	Annual	0.015 ppm	0.014 ppm	0.013 ppm	
Fine Particulate Matter (PM <sub>2.5</sub> )	24-Hour	$48.4 \mu g/m^3$	<b>75.3</b> $\mu$ g/m <sup>3</sup>	$45.6 \mu g/m^3$	
	Annual	8.8 μg/m <sup>3</sup>	9.5 $\mu$ g/m <sup>3</sup>	$8.3 \mu g/m^3$	
Respirable Particulate Matter (PM <sub>10</sub> )	24-Hour	<b>80.8</b> $\mu$ g/m <sup>3</sup>	<b>69.9</b> $\mu$ g/m <sup>3</sup>	<b>55.8</b> μg/m <sup>3</sup>	
	Annual	<b>20.9</b> $\mu$ g/m <sup>3</sup>	$19.8 \mu g/m^3$	$19.6 \mu g/m^3$	
Bay Area (Basin Summary)			-	-	
Ozone (O <sub>3</sub> )	1-Hour	<b>0.120</b> ppm	<b>0.127</b> ppm	<b>0.120</b> ppm	
	8-Hour	<b>0.090</b> ppm	<b>0.106</b> ppm	<b>0.091</b> ppm	
Carbon Monoxide (CO)	8-Hour	3.11 ppm	2.94 ppm	2.71 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	1-Hour	0.074 ppm	0.107 ppm	0.069 ppm	
	Annual	0.013 ppm	0.013 ppm	0.012 ppm	
Fine Particulate Matter (PM <sub>2.5</sub> )	1-Hour	NA	NA	NA	
	Annual	NA	NA	NA	
Descriptle Destinulate Matter (DM.)	24-Hour	<b>80.8</b> μg/m <sup>3</sup>	<b>106.3</b> µg/m <sup>3</sup>	<b>77.8</b> μg/m <sup>3</sup>	
Respirable Particulate Matter (PM <sub>10</sub> )	Annual	<b>24.2</b> µg/m <sup>3</sup>	<b>35.0</b> $\mu$ g/m <sup>3</sup>	<b>25.6</b> μg/m <sup>3</sup>	
Notes: $ppm = parts per million$ $\mu g/m^3 = micrograms per cubic me$ Values reported in bold exceed am $NA = data not available$ Source:California Air Resources Ebin/db2www/adamtop4b.d2w/start	bient air quality stand Board. Accessed	by CAJA Staf	f at http://www.a	rb.ca.gov/adam/cgi	

 Table IV.B-1

 Highest Measure Air Pollutant Concentrations

Under the Federal CAA, the U.S. EPA has designated the region as *moderate non-attainment* for ground level  $O_3$ . However, the U.S. EPA has recognized that the region has not violated the 1-hour National  $O_3$  standard over the last three years (2005-2007). This is the first step towards designating the Bay Area as attainment of that standard. Although not officially designated, the region does not attain the 8-hour  $O_3$  standard. The Bay Area has met the CO standards for over a decade and is classified *attainment maintenance* by the U.S. EPA. The U.S. EPA grades the region *unclassified* for all other air pollutants, which include  $PM_{10}$  and  $PM_{2.5}$ . Monitoring data indicate that U.S. EPA may eventually designate the region as non-attainment for  $PM_{2.5}$  when an adequate data set becomes available.

At the State level, the region is considered *serious non-attainment* for ground level  $O_3$  and non-attainment for PM<sub>10</sub>. The area is considered *attainment* or *unclassified* for all other pollutants.

Pollutant	Standard	Monitoring	Days Exceeding Standard		
1 Ullutalit	Stanuaru	Station	2005	2006	2007
Ozone (O <sub>3</sub> )	NAAQS 1-hr	Redwood City/ BAY AREA	0 9	0 18	0 4
	NAAQS 8-hr	Redwood City/ BAY AREA	0 1	0 12	0 1
	CAAQS 1-hr	Redwood City/ BAY AREA	0 9	0 22	0 9
Fine Particulate Matter (PM <sub>2.5</sub> )	NAAQS 24-hr	Redwood City/ BAY AREA	0	1	0
Respirable Particulate Matter (PM <sub>10</sub> )	NAAQS 24-hr	Redwood City/ BAY AREA	0 0	0 0	0 0
	CAAQS 24-hr	Redwood City/ BAY AREA	2 4	2 13	1 4
All Other (CO, NO <sub>2</sub> , Lead, Sulfur dioxide (SO <sub>2</sub> ))	All Other	Redwood City/ BAY AREA	0 0	0 0	0 0
Source: California Air Resources Board. Accessed by CAJA Staff at http://www.arb.ca.gov/adam/cgi- bin/db2www/adamtop4b.d2w/start on September 24, 2008.					

 Table IV.B-2

 Summary of Measure Air Quality Exceedances

### **Sensitive Receptors**

Some groups of people are more affected by air pollution than others. CARB has identified the following people who are most likely to be affected by air pollution: 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.

# **REGULATORY SETTING**

### Federal and State

The Federal CAA governs 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 CAA. At the Federal level, the U.S. EPA administers the CAA. The California CAA is administered by the CARB at the State level and by the Air Quality Management Districts at the regional and local levels. The BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area.

### United States Environmental Protection Agency

In addition to administering the Federal CAA, the U.S. EPA is also responsible for establishing the NAAQS, required under the 1977 Federal CAA and subsequent amendments. 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.

### California Air Resources Board

In California, the CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the CAAQS. The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS (discussed later in this section). The 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. The CARB established passenger vehicle fuel specifications, which became effective on March 1996. The CARB 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. It also sets fuel specifications to further reduce vehicular emissions.

### Bay Area Air Quality Management District

In 1955, the California Legislature created the BAAQMD. The agency is primarily responsible for assuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. The 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 citizen 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. The BAAQMD has jurisdiction over much of the nine-county Bay Area.

Mobile sources, both off-and on-road are not subject to BAAQMD authority. The BAAQMD's rules and regulations that may apply to the proposed project are described below.

- <u>Permitting</u>: Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment (such as boilers), the use of which may reduce or control the emission of air contaminants, shall first secure written authorization from the Air Pollution Control Officer.
- <u>New Source Review</u>: Rule 2-2, New Source Review applies to all new and modified sources or facilities (such as boilers) that are subject to the requirements of Rule 2-1-301. The purpose of

the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

- <u>Prohibitory Rules</u>: Regulation 6 pertains to particulate matter and visible emissions and limits the quantity of particulate matter emitted into the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity. This rule applies to construction projects.
- <u>Prohibitory Rules</u>: Regulation 11, Rule 2 pertains to demolition or renovation of facilities with asbestos containing materials. The rule establishes handling and reporting procedures to control emissions of asbestos during demolition or renovation projects.

# National and State Ambient Air Quality Standards

As required by the Federal CAA, the NAAQS have been established for six major air pollutants: CO,  $NO_x$ ,  $O_3$ ,  $PM_{10}$ ,  $PM_{2.5}$ , Sulfur dioxide (SO<sub>2</sub>), and lead. The CAAQS apply to these same six criteria and also address sulfate (SO42-), visibility, Hydrogen sulfide (H<sub>2</sub>S), and vinyl chloride (C<sub>2</sub>H<sub>3</sub>Cl). The California CAA standards are more stringent than the Federal CAA standards and, in the case of  $PM_{10}$  and SO<sub>2</sub>, far more stringent. Both Federal and State standards are summarized in Table IV.B-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. The NAAQS are applicable if a project is federal action. Additionally, the CAAQS are more stringent than the NAAQS. Thus, the CAAQS are used as the comparative standard in this analysis.

# Criteria Air Pollutants & Effect

Air quality studies generally focus on five pollutants that are most commonly measured and regulated: CO,  $O_3$ ,  $NO_2$ ,  $SO_2$ , and suspended particulate (i.e.,  $PM_{10}$  and  $PM_{2.5}$ ).

<u>Carbon Monoxide</u>. CO, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. Automobile exhausts release approximately 70 percent of the CO in the Bay Area. A substantial amount also comes from burning wood in fireplaces and wood stoves. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. The highest CO concentrations measured in the Bay Area are typically recorded during the winter.

Pollutant	Averaging Time		National Standards <sup>a</sup>		
		California Standards	<b>Primary</b> <sup>b,c</sup>	Secondary <sup>b,d</sup>	
Ozone (O <sub>3</sub> )	8-hour	0.070 ppm (137 μg/m <sup>3</sup> )	0.075 ppm (147µg/m <sup>3)</sup>	Same as primary	
	1-hour	0.09 ppm (180 μg/m <sup>3</sup> )	_	Same as primary	
Carbon monoxide (CO)	8-hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	—	
	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	_	
Nitrogen dioxide (NO <sub>2</sub> )	Annual	0.030 ppm (57 μg/m <sup>3</sup> )	0.053 ppm (100 μg/m <sup>3</sup> )	Same as primary	
	1-hour	0.18 ppm (339 μg/m <sup>3</sup> )	_	Same as primary	
	Annual		0.030 ppm (80 μg/m <sup>3</sup> )	_	
Sulfur dioxide	24-hour	0.04 ppm (105 μg/m <sup>3</sup> )	0.14 ppm (365 μg/m <sup>3</sup> )		
(SO <sub>2</sub> )	3-hour	_		0.5 ppm $(1,300 \mu g/m^3)$	
	1-hour	0.25 ppm (655 μg/m <sup>3</sup> )	_	_	
Respirable Particulate Matter	Annual	$20 \mu \text{g/m}^3$ (arithmetic mean)	—	Same as primary	
(PM <sub>10</sub> )	24-hour	$50 \mu g/m^3$	150 µg/m <sup>3</sup>	Same as primary	
Fine Particulate	Annual	$12 \mu g/m^3$ (arithmetic mean)	$15 \mu g/m^3$	Same as primary	
Matter (PM <sub>2.5</sub> )	24-hour	—	$35 \ \mu g/m^3$	Same as primary	
Lead	Calendar quarter	—	1.5 μg/m <sup>3</sup>	Same as primary	
ppm = µg/m <sup>3</sup> = (a) Standar year. T average (b) Concen parenth (c) Primar health. is appro	The ozone standard is atta e concentrations above the trations are expressed nesis. y Standards: The levels Each state must attain the poved by the U.S. EPA.		per of days per calendar y than one. were promulgated. E an adequate margin of s than 3 years after that St	year with maximum hourly Equivalent units given in afety to protect the public ate's implementation plan	
Source: California		pollutant. rd, Ambient Air Quality s/aaqs2.pdf on June 26, 2008.	Standards. Accessea	l by CAJA Staff at	

 Table IV.B-3

 California and National Ambient Air Quality Standards

<u>Ozone</u>.  $O_3$ , a colorless toxic gas, is the chief component of urban smog.  $O_3$  enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen.

Although  $O_3$  is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and  $NO_x$  under sunlight. ROG and  $NO_x$  are primarily emitted from automobiles and industrial sources.  $O_3$  is present in relatively high concentrations within the Bay Area, and the damaging effects of photochemical smog are generally related to the concentration of  $O_3$ . Highest  $O_3$  concentrations occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies.

<u>Nitrogen Dioxide</u>. NO<sub>2</sub>, a reddish-brown gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like  $O_3$ , NO<sub>2</sub> is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO<sub>2</sub> are collectively referred to as NO<sub>x</sub> and are major contributors to  $O_3$  formation. NO<sub>2</sub> also contributes to the formation of PM<sub>10</sub> (see discussion of suspended particulate matter below).

<u>Sulfur Oxides</u>. 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.

Suspended Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gases emitted from motor vehicles undergo chemical reactions in the atmosphere.  $PM_{10}$  and  $PM_{2.5}$  represent fractions of particulate matter.  $PM_{10}$  refers to particulate matter less than 10 microns in diameter, about one/seventh the thickness of a human hair. PM<sub>2.5</sub> refers to particulate matter that is 2.5 microns or less in diameter. Major sources of PM<sub>10</sub> include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions. PM<sub>2.5</sub> results primarily from diesel fuel combustion (from motor vehicles, power generation and industrial facilities), residential fireplaces, and wood stoves. In addition, PM<sub>2.5</sub> is formed in the atmosphere from gases such as  $SO_2$ ,  $NO_x$ , and volatile organic compounds (VOCs).  $PM_{10}$ and  $PM_{2,5}$  pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM<sub>10</sub> and  $PM_{2.5}$  can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. Whereas, larger particles tend to collect in the upper portion of the respiratory system, PM<sub>2.5</sub> are so tiny that they can penetrate deeper into the lungs and damage lung tissues.<sup>1</sup> Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

### Toxic Air Contaminants (TAC)

Toxic Air Contaminants (TAC)s are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., benzene near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. California has adopted a comprehensive diesel risk reduction program. The U.S. EPA has adopted (in June 2006) low sulfur diesel fuel standards that will reduce diesel particulate matter substantially.

In cooler weather, smoke from residential wood combustion can be a source of TACs. 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. This occurs in sheltered valleys during the winter. Woodsmoke also contains a significant amount of  $PM_{10}$  and  $PM_{2.5}$ . Woodsmoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

### Greenhouse Gases

Global Climate Change (GCC) is a long-term substantial change in the average weather on earth, as often measured by wind patterns, storms, precipitation and temperature. The science of GCC is evolving and remains subject to extensive debate and uncertainties; however, recent reports from the United Nations' Intergovernmental Panel on Climate Change (IPCC) have concluded that GCC is likely due, at least partially, to emissions of greenhouse gases (GHGs) from human activity<sup>2</sup>. GHGs are most frequently produced by the burning of fossil fuels for transportation and electricity generation, and include carbon

<sup>&</sup>lt;sup>1</sup> The NAAQS for  $PM_{2.5}$  was adopted in 1997. Presently no methodologies for determining impacts relating to  $PM_{2.5}$  have been developed or adopted by federal, state, or regional agencies. The State standard for  $PM_{10}$  is more stringent than the Federal  $PM_{2.5}$  standard.

<sup>&</sup>lt;sup>2</sup> Intergovernmental Panel on Climate Change, Working Group I: The Physical Basis of Climate Change. Accessed by CAJA Staff at http://ipcc-wg1.ucar.edu/wg1/wg1-report.html on September 25, 2008.

dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H<sub>2</sub>O). They allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation, thereby warming the air. The process is similar to the effect greenhouses have in raising the internal temperature, hence the name GHGs.

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas. Because it contributes to over 80 percent of United States GHG emissions,  $CO_2$  is the reference gas for GCC. To account for the warming potential of GHGs, GHG emissions are often quantified and reported as  $CO_2$  equivalents ( $CO_2e$ ). The  $CO_2e$  is a good way to assess emissions because it gives weight to the GWP of the gas.

According to the 2006 California Climate Action Team Report, (CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006) the following climate change effects, which are based on the IPCC trends, can be expected in California over the course of the next century:

- A diminishing Sierra snow pack declining by 70 percent to 90 percent, threatening the State's water supply;
- Increasing temperatures from 8 to 10.4 degrees Fahrenheit under the higher emission scenarios, leading to a 25 percent to 35 percent increase in the number of days O<sub>3</sub> pollution levels are exceeded in most urban areas;
- Increased vulnerability of forests due to pest infestation and increased temperatures; and
- Increased electricity demand, particularly in the hot summer months.

Additionally, health effects from GCC may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat related problems include heat rash and heat stroke. In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other disease carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. GCC may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

# Bay Area Clean Air Plan

The BAAQMD along with the other regional agencies (i.e., Association of Bay Area Governments [ABAG] and the Metropolitan Transportation Commission [MTC]) has prepared an Ozone Attainment Plan to address the NAAQS for  $O_3$ . A Carbon Monoxide Maintenance Plan was also prepared in 1994 to demonstrate how the NAAQS for CO standard will be maintained. Another plan, the Bay Area Clean Air

Plan, was prepared to address the more stringent requirements of the California CAA with respect to  $O_3$ . This plan includes a comprehensive strategy to reduce emissions from stationary, area, and mobile sources. The plan objective is to indicate how the region would make progress toward attaining the stricter State air quality standards, as mandated by the California CAA. The plan is designed to achieve a region-wide reduction of  $O_3$  precursor pollutants through the expeditious implementation of all feasible measures. Air quality plans addressing the California CAA are developed about every three years. The latest plan (Bay Area 2000 Clean Air Plan, [CAP]) was prepared in 2000. The BAAQMD is beginning the process to prepare the 2009 Bay Area CAP.<sup>3</sup> The 2009 Bay Area CAP will:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement "all feasible measures" to reduce O<sub>3</sub>;
- Consider the impacts of O<sub>3</sub> control measures on particulate matter, air toxics, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2009 2012 timeframe.

This analysis will utilize the 2000 adopted CAP. The 2000 CAP proposes implementation of transportation control measures (TCMs) and programs such as *Spare the Air*.<sup>4</sup> Some of these measures or programs rely on local governments for implementation.

A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions. Most important is vehicle activity. The BAAQMD uses population projections made by ABAG and vehicle use trends made by the MTC to formulate future air pollutant emission inventories. The basis for these projections comes from cities and counties. In order to provide the best plan to reduce air pollution in the Bay Area, accurate projections from local governments are necessary. When General Plans are not consistent with these projections, they cumulatively reduce the effectiveness of air quality planning in the region.

### California Building Standards Commission

# Green Building Standards

The California Building Standards Commission has taken the opportunity, along with other state agencies, to develop green building standards that will establish California as a leader in the efforts to

<sup>&</sup>lt;sup>3</sup> Bay Area Air Quality Management District (BAAQMD), 2009 Clean Air Plan. Accessed by CAJA Staff at http://www.baaqmd.gov/pln/plans/ozone/ on October 21, 2008.

<sup>&</sup>lt;sup>4</sup> Spare the Air is a public outreach program designed to educate the public about air pollution in the Bay Area and promote individual behavior changes that improve air quality.

reduce GHG emissions from structures. The code as adopted includes mandatory features with a delayed effective date for housing, and voluntary standards for hospitals and other non-residential occupancies. The Commission will continue to work with state agencies and the many stakeholders as they develop a comprehensive set of mandatory provisions in the 2010 edition of the California Green Building Standards Code. The green building standards were adopted by the California Building Standards Commission on July 17, 2008, as amended for publication in the 2007 California Green Building Standards Code, CCR, Title 24, Part 11.

### Local

### County of San Mateo Green Building Ordinance

On February 26th 2008, the San Mateo County Board of Supervisors approved a Green Building Ordinance that will apply to building projects within the unincorporated areas of San Mateo County. On October 7, 2008 the Board of Supervisors adopted an ordinance amending the regulations clarifying standards and requirements to improve the effectiveness of the Green Building Program. The purpose of the Green Building Program is to enhance public health and welfare by encouraging green building measures in the design, building and maintenance of buildings. Green Building Practices are intended to achieve the following goals:

- To encourage the conservation of natural resources;
- To reduce waste in landfills generated by construction projects;
- To increase energy efficiency and lower energy usage;
- To reduce operating and maintenance costs for buildings; and
- To promote a healthier indoor environment.

# **ENVIRONMENTAL IMPACTS**

#### **Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant air quality environmental impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O<sub>3</sub> precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

As stated previously, the project site is located within the jurisdiction of the BAAQMD. The BAAQMD CEQA Guidelines recommends analytical methodologies and provides evaluation criteria for determining the level of significance for project impacts within its jurisdiction. The BAAQMD's evaluation criteria for determining air quality impacts provide defined screening thresholds for pollutant emissions. Projects that would generate emissions below the defined thresholds are considered to have a less-than-significant impact on air quality; projects that exceed the screening thresholds must provide further analysis such as district-approved air dispersion modeling to refute (or validate) a determination of significance or must acknowledge a potentially significant air quality impact. The screening thresholds for air quality impacts from the BAAQMD CEQA Guidelines are presented below.

### **Construction Emissions**

According to the BAAQMD CEQA Guidelines,  $PM_{10}$  is the pollutant of greatest concern with respect to construction activities. Construction emissions of  $PM_{10}$  can vary greatly depending upon the level of activity, construction equipment, local soils, and weather conditions, among other factors. As a result, the BAAQMD CEQA Guidelines specifies, "[t]he District's approach to CEQA analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions." Therefore, the determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. If all the applicable control measures for  $PM_{10}$  indicated in the BAAQMD CEQA Guidelines would be implemented, then air pollutant emissions from construction activities would be considered less than significant. If a project would not implement all applicable control measures, construction emissions would be considered a significant impact.

### **Operational Emissions**

The BAAQMD recommends that individual projects impacts involving direct and/or indirect operational emissions that exceed the following thresholds be considered significant:

- 80 pounds per day (ppd) of ROG
- 80 ppd of NO<sub>x</sub>
- 80 ppd of PM<sub>10</sub>

Direct emissions are those that are emitted on a site and include stationary sources and on-site mobile equipment. Examples of land uses and activities that generate direct emissions are industrial operations

and sources subject to an operating permit by the BAAQMD. Indirect emissions come from mobile sources that access the project site, but generally emit off-site. For many types of land-use development projects, the principal sources of air pollutant emissions are the motor vehicle trips generated by the project.

#### Local CO Concentrations

Indirect CO emissions are considered significant if they will contribute to a violation of the State standards for CO (9 ppm averaged over 8 hours and 20 ppm over 1 hour). CO emissions are localized, and typically analyzed in terms of their impacts to specific roadway segments or intersections. Construction equipment exhaust contains CO and  $O_3$  precursors. However, these exhaust emissions are included in the emission inventory that is the basis for regional air quality plans, and are not expected to impede attainment and maintenance of  $O_3$  and CO standards in the Bay Area. In addition, as mentioned before, although State standards for  $PM_{2.5}$  exist, area designations have not yet been determined. As a result, State plans for addressing  $PM_{2.5}$  emissions are not yet in place and Air Quality Management Districts do not include these emissions in their analyses of construction impacts.

BAAQMD requires CO modeling for projects in which: (1) project vehicle emissions of CO would exceed 550 ppd; (2) project traffic would affect intersections or roadway segments operating at level of service (LOS) D, E, or F, or would cause a decline to LOS D, E, or F; or (3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more (unless the increase in traffic volume is less than 100 vehicles per hour). If necessary, a simplified CO modeling analysis will be used to determine localized CO concentrations. If modeling demonstrates that the source would not cause a violation of the State standard at existing or reasonably foreseeable receptors, the project would not have a significant impact on local air quality.

#### **Odors**

Odors would be considered significant if the project would result in a frequent exposure of members of the public to objectionable odors. According to the BAAQMD, typical uses that may result in significant odor impacts include wastewater treatment plant, sanitary landfill, transfer station, composting facility, petroleum refinery, asphalt batch plant, chemical manufacturing, fiberglass manufacturing, painting/coating operations, rendering plant, and coffee roasters.

#### TACs

Projects that have the potential to emit TACs could also result in significant air quality impacts. As stated in the BAAQMD CEQA Guidelines, a project that emits TACs and exceeds the following criteria is considered to have a significant air quality impact:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million;<sup>5</sup> or
- Ground-level concentrations of non-carcinogenic TACs would result in a hazard index greater than one (1) for the MEI.<sup>6</sup>

#### Greenhouse Gases

At this time there are no statewide guidelines for GHG emission impacts, but this will be addressed through the provisions of Senate Bill 97 (SB 97), which was enacted in 2007. SB 97 requires the State Office of Planning and Research (OPR) to develop CEQA guidelines for the effects and mitigation of GHG emissions. Unfortunately, the guidelines will not be available for some time as OPR has until July 1, 2009 to draft the new GHG guidelines, and the State Resources Agency will thereafter have until January 1, 2010 to certify and adopt the regulations. In the interim, OPR, in collaboration with the California Resources Agency, the CalEPA and the CARB, recently provided a new technical advisory containing informal guidance for public agencies as they address the issue of GCC in their CEQA documents. This technical advisory provides OPR's perspective on the issue and precedes the development of draft implementing regulations for CEQA, in accordance with SB 97 (Chapter 185, Statutes of 2007).

In summary, OPR recommends each public agency that is a lead agency for complying with CEQA to develop its own approach to performing a GCC analysis for projects that generate GHG emissions. A consistent approach should be applied for the analysis of all such projects, and the analysis must be based on best available information. For these projects, compliance with CEQA entails three basic steps:

- Identify and quantify the GHG emissions;
- Assess the significance of the impact on GCC; and
- If the impact is found to be significant, identify alternatives and/or mitigation measures that will reduce the impact to a level of less than significant.

Although, there is currently no adopted threshold for all County projects, for this analysis, a project would be considered to have a significant impact if the project would conflict with or obstruct implementation of GHG reduction measures under AB 32 and other State regulations.

Three types of analyses are used to determine whether the project could be in conflict with the State measures for reducing GHG emissions. The analyses are as follows:

<sup>&</sup>lt;sup>5</sup> An MEI is a hypothetical off-site person, usually at or near the site boundary, who would receive the maximum exposure from a facility's operations.

<sup>&</sup>lt;sup>6</sup> A hazard index measures the potential for non-cancer health effects. It is the ratio of the estimated exposure level to the Reference Exposure Level, which is the level at or below which no adverse health effects are anticipated.

- A. Whether the project conflicts with or obstructs implementation of CARB's 44 early action strategies.
- B. Whether the project will be subject to CARB's mandatory reporting. Qualifying projects include cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons per year of CO<sub>2</sub>e emissions. Projects that are not included among these classes of facilities and will not emit 25,000 metric tons per year of CO<sub>2</sub>e emissions or more are not required to report emissions to CARB and are not considered to be cumulatively considerable.
- C. Whether elements of the project, mitigation measures, and County policies and requirements contribute to the efficiency of the project and reduce GHG emissions. Most projects include project components and/or mitigation measures that may not be intended to reduce GHG emissions, but will nonetheless have this effect. Similarly, many County policies and requirements, such as traffic demand management programs, may also operate to improve the efficiency and reduce emissions associated with the project.

#### Cumulative Impacts

According to the BAAQMD CEQA Guidelines, any project that would individually have a significant air quality impact would also have a significant cumulative air quality impact. For a project that does not individually have a significant air quality impact, the BAAQMD requires that a determination of cumulative impacts be based on an evaluation of the consistency of the proposed project with the local general plan and of the general plan with the regional air quality plan. The appropriate regional air quality plan for this analysis is the 2000 CAP. If a project is proposed in a city or county with a general plan that is consistent with the CAP, and the project is consistent with that general plan, the project would not have a significant cumulative impact. If the city or county general plan is not consistent with the CAP, or the project is not consistent with the general plan, quantitative analysis is required to determine whether the impact is significant.

#### **Project Impacts and Mitigation Measures**

#### Impact AQ-1 Construction/Demolition Emissions

#### Grading

The grading phase would require approximately 34 to 44 days for completion, with the appropriate utility infrastructure added after this phase. The construction of the new private street would require an additional 6 months post the grading phase. All utility stubouts would be completed as part of the one phase tract improvements. The building schedule and phasing of the individual houses has not yet been determined; however, it is assumed for this analysis that buildout would be completed in 4.5 - 5 years. Construction activities would generate pollutant emissions from the following construction activities: grading, construction worker travel to and from the project site, delivery and hauling of construction supplies and debris to and from the project site, and fuel combustion by on-site construction equipment.

These construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants.

 $PM_{10}$  is typically the most significant source of air pollution from construction, particularly during site preparation and grading.  $PM_{10}$  emissions from construction can vary daily, depending on various factors, such as the level of activity, type of construction activity taking place, the equipment being operated, weather conditions, and soil conditions. Typically, the BAAQMD does not require quantitative analysis for construction. Rather the analysis is focused on identifying the most appropriate control measures. However, the proposed project would require a substantial amount of grading, resulting in the generation of a large amount of truck traffic during the grading phase. It was anticipated that the emissions associated with the grading activities would exceed emissions typically generated by "normal" construction. Thus, potential emissions during the grading phase of the project were calculated and compared to the BAAQMD significance thresholds for operational impacts.

Approximately 131,480 cubic yards (c.y.) of earth material would be graded for the proposed project on slopes averaging 40 percent (refer to Figure III-18). Specifically, the grading phase of the proposed project would require approximately 96,000 c.y. of cut material (with a maximum depth of 25 feet) and 35,480 c.y. of fill material (with a maximum depth of 10 feet). As stated above, the grading phase would require approximately 34 to 44 days for completion. Of this total, approximately 60,520 c.y. of earth material would be exported by haul truck. Construction emissions were estimated using the CARB's URBEMIS2007 model<sup>7</sup>, which considers the type of land use, vehicle mix, and average trip lengths. The model has a construction emissions module, in which the grading phase was selected. Inputs to the model for construction grading emissions included the size of the construction area (approximately 13.3 acres), the area disturbed on a daily basis (about  $\frac{1}{4}$  of the site or 3.5 acres), the duration of most grading operations (34-44 work days; using the average as 39 work days), the amount of earth material exported (i.e., 60,520 cubic yards), and the year of construction (2008). Each truck trip length was estimated to be 15 miles. The model defaults were used to estimate the amount of off-road construction equipment and number of workers required to perform the task. The model predicts emissions for fugitive dust, off-road diesel equipment (i.e., on site construction equipment), on-road diesel equipment (haul trucks), and worker trips.

Table IV.B-4 presents uncontrolled emissions predicted by the URBEMIS2007 model that are associated with site grading along with significance operational BAAQMD thresholds. As seen in this Table, emissions of  $PM_{10}$  and  $NO_x$  during the grading period would exceed the BAAQMD operational

<sup>&</sup>lt;sup>7</sup> Jones & Stokes Associates. Software Users Guide: URBEMIS2007 for Windows with Enhanced Construction Module, Version 9.2.4 – Emission Estimation for Land Use Development Projects. September 2008.

thresholds. Therefore, grading activities associated with construction would have a *significant* impact on air quality.<sup>8</sup>

Pollutant	Daily Emissions	BAAQMD Operational Threshold
$PM_{10}$		
Fugitive Dust	706.91	80
Equipment Exhaust	8.64	
Total	715.55	
NO <sub>x</sub>		
Equipment Exhaust	123.95	80
Truck Hauling/Worker	52.76	80
Total	176.71	
ROG		
Equipment Exhaust	15.12	20
On Road Exhaust	3.29	80
Total	18.41	
Source: Christopher A Joseph an	d Associates, 2008.	

## Table IV.B-4Peak ConstructionDaily Uncontrolled Emissions (pounds per day)

#### TACs

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. The BAAQMD has not developed any procedures or guidelines for identifying these impacts from temporary construction activities where emissions are transient. They are typically evaluated for stationary sources (e.g., large compression ignition engines such as generators) in health risk assessments over the course of lifetime exposures (i.e., 24 hours per day over 70 years). As stated above, the hauling of export soil during the grading phase would occur over a 39-day average period and would be limited to no longer than 11 hours per day. Therefore, due to the short duration of the grading activities, and the fact that the remainder of the construction activities are considered typical, the probability of the Maximally Exposed Individual (MEI)<sup>9</sup> contracting cancer will not be greater than 10 in one million or result in a non-cancer hazard index of one (BAAQMD significance thresholds).

However, according to the BAAQMD, several control measures are available to further reduce TAC emissions associated with the grading phase of the project, and the BAAQMD has stated that these

<sup>&</sup>lt;sup>8</sup> The BAAQMD CEQA Guidelines does not have a significance determination for NOx during the construction phase of a project. This significance determination is based on conservative assumptions to reduce NOx emissions further than required.

<sup>&</sup>lt;sup>9</sup> An MEI is a hypothetical off-site person, usually at or near the site boundary, who would receive the maximum exposure from a facility's operations.

measures should be implemented as part of the project. To date, these control measures have not been incorporated into the grading phase of the project, nor has the project applicant acknowledged that these measures would be implemented. For these reasons, project impacts related to TAC emissions during the grading phase would be *significant*.

#### General

As stated previously under the grading discussion, due to the scope and complexity of the grading and utilities, all work proposed on the tentative map is proposed to be complete in one phase. The grading phase would require approximately 34 to 44 days for completion, with the appropriate utility infrastructure added after this phase. The construction of the new private street would require an additional 6 months post the grading phase. All utility stubouts would be completed as part of the one phase tract improvements. The building schedule and phasing of the individual houses has not yet been determined; however, it is assumed for this analysis that buildout would be completed in 4.5 - 5 years. Emissions from these phases of construction can vary considerably depending on the specific activities taking place, level of activity, soil conditions, and weather. Per BAAQMD guidance, the significance of these construction air quality impacts is addressed through application of reasonable control measures to reduce  $PM_{10}$  rather than detailed quantification of construction emissions. Other sources of construction-related emissions include exhaust emissions from gasoline or diesel powered construction equipment, solvents in construction materials, and gases emitted from asphalt for a short period of time after paving occurs. The BAAQMD accounts for a region-wide inventory of construction emissions in air quality planning efforts.

At this time, the standard BAAQMD control measures have not been incorporated into the project, nor has the project applicant acknowledged that these measures would be implemented. Although the project's construction-related emissions would be temporary in duration, in the absence of control measures, construction-related emissions could be substantial.

Given all the reasons stated above, project impacts on air quality during grading would be significant.

The following mitigation measures are required for Impact AQ-1. With implementation of the following mitigation measures the significant  $PM_{10}$  impacts would be reduced to a less-than-significant level. However, because construction activities associated with the project would exceed the BAAQMD NO<sub>x</sub> operational threshold, short-term project impacts on air quality during construction would remain *significant and unavoidable*.

#### Mitigation Measure AQ-1

#### Construction Phase

Under BAAQMD CEQA Guidelines, implementation of the mitigation measures listed below is required during demolition, grading, and construction of the proposed project. These mitigation measures shall be implemented for all areas (both on-site and off-site) where construction activities would occur.

- 1. Sprinkle water all active construction areas at least twice daily and more often when conditions warrant.
- 2. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
- 3. Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- 4. Sweep daily all paved access roads, parking areas, and staging areas at construction sites.
- 5. Sweep streets daily if visible soil material is carried onto adjacent public streets.
- 6. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas.
- 7. Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- 8. Limit traffic speeds on unpaved roads to 15 miles per hour.
- 9. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- 10. Replant vegetation in disturbed areas as quickly as possible.
- 11. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- 12. Suspend grading activities when winds exceed 25 miles per hour and visible dust clouds cannot be prevented from extending beyond active construction areas. Given wind conditions at the site, winds exceeding 25 miles per hour can be expected from time to time, so periods of suspended construction activity can be expected.
- 13. Limit the area subject to excavation, grading and other construction activity at any one time.

#### Grading Equipment Exhaust Mitigations

Construction equipment generates diesel exhaust, which is a known TAC that poses both a health and nuisance impact to nearby receptors.  $NO_x$  from equipment exhaust contributes to regional  $O_3$  formation. Though not required under the BAAQMD CEQA Guidelines, the control measures listed below should be implemented during the grading phase of the project to minimize diesel TAC and  $NO_x$  emissions.

1. Opacity is often an excellent indicator of exhaust particulate emissions from off-road diesel powered equipment. The project shall ensure that emissions from all construction diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately.

- 2. Where possible, to control TACs and PM<sub>10</sub>, use reformulated or alternative diesel fuels. For equipment with engines built in 1994 or later, consider using B80 or B100 fuel, (80 percent or 100 percent biodiesel fuel). B100 reduces TAC emissions by approximately 80 percent to 90 percent. In pre-1994 engines, use B-20 fuel, (a mixture of 20 percent biodiesel and 80 percent fossil diesel fuel). If B20 is used, the fossil diesel component should be CARB low-sulfur fuel (less than 15 ppmw). Other fuels include synthetic diesel fuel and aqueous diesel fuel.
- 3. If a certified unit is available for an individual piece of equipment, the contractor shall utilize an oxidation catalyst or catalytic particulate filter on all diesel powered equipment rated above 50 horsepower. These systems require CARB low-sulfur diesel fuel. Commercial fossil diesel fuel is available with near-zero sulfur levels. Biodiesel is also CARB certified as low-sulfur (near-zero ppmw).
- 4. Where possible, the contractor shall use Purinox additive or equivalent. Depending on equipment, this reduces emissions of both  $NO_x$  and  $PM_{10}$  by 20 percent to 40 percent.
- 5. The contractor shall install temporary electrical service whenever possible to avoid need for independently powered equipment (e.g., compressors).
- 6. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were on-site.
- 7. Properly tune and maintain equipment for low emissions.
- 8. The County shall designate a Disturbance Coordinator responsible for ensuring that mitigation measures to reduce air quality impacts from construction are properly implemented. The Disturbance Coordinator shall be responsible for notifying adjacent land uses of construction activities and schedule and shall provide a written list of the aforementioned dust control measures. The list shall identify a contact person that will respond to any complaints. A log shall be kept of all complaints and the actions taken to remedy any valid complaint as well as the response period.

#### **Operational – Emissions**

#### Impact AQ-2 Regional Emissions – Daily Emissions of ROG, NOx, and PM<sub>10</sub>

Long-term emissions from the project would be generated by stationary sources associated with residential uses (e.g., natural gas, fireplaces) as well mobile sources (motor vehicles). Motor vehicles are the predominate source of long-term project emissions. The project is anticipated to generate an about 239 daily vehicle trips (refer to Section IV.I, Transportation/Traffic).

Operational emissions were estimated using the CARB's URBEMIS2007 model, which considers the type of land use, vehicle mix, and average trip lengths. The model uses the most recent Emfac2007 on

road motor vehicle emission factors. Inputs to the model include the project size (25 single family residences), season (summer for  $O_3$  precursor pollutants ROG and  $NO_x$  and winter for CO and  $PM_{10}$ ) and the year of analysis (2008). The model predicts emissions from area sources associated with the project and mobile sources. Area sources include the emissions from natural gas consumption, landscaping, consumer products, and woodsmoke from fireplaces. The results shown in Table IV.B-5 indicate that the direct and indirect emissions from the project are not anticipated to exceed any of the BAAQMD significance thresholds for criteria pollutants. Therefore, impacts would be *less than significant*; therefore, no mitigation measures are required.

Pollutant	Stationary Source*	Mobile Source	Total Emissions	BAAQMD Operation Threshold (ppd)	Exceed BAAQMD Threshold?
PM <sub>10</sub>	2.05	3.74	5.79	80	No
СО	13.12	32.81	45.93	550	No
ROG	5.14	2.82	7.96	80	No
NOx	0.65	4.34	4.99	80	No
* Stati	-	natural gas, fireplaces, Associates. URBEMIS2		<i>g</i> .	

#### Table IV.B-5 Daily Operation Emissions

#### Impact AQ-3 CO Emissions

Background CO concentrations near the project site are about 3 ppm for an 8-hour averaging period. The closest air monitoring station, located in the more urbanized area of Redwood City, measures 8-hour CO concentrations that are well below the State and Federal standards.

The BAAQMD has established a screening method for evaluating CO impacts for projects that have emissions less than 550 ppd and have little or no effect on traffic congestion. A project is considered to have a less-than-significant impact on CO concentrations if it would: 1) result in daily CO emissions less than 550 ppd; 2) traffic impacts would not be substantial at intersections operating at LOS D, E, or F now and in the future; and 3) traffic on nearby arterial roadways would increase by less than 10 percent. If the project meets these criteria, then dispersion modeling is not necessary to identify a less-than-significant impact, because CO concentrations resulting from the project would not exceed ambient air quality standards.

The 25 new homes would generate less than 250 new vehicle trips per day (i.e., 239 daily vehicle trips) and total CO emissions from the project would be considerably less than 550 ppd. As a result, CO concentrations associated with the project would remain well below the ambient air quality standards. Any increase in CO concentrations associated with the project would be *less than significant* and no mitigation measures are required.

#### Impact AQ-4 Odors

As stated previously, according to the BAAQMD, typical uses that may result in significant odor impacts include wastewater treatment plant, sanitary landfill, transfer station, composting facility, petroleum refinery, asphalt batch plant, chemical manufacturing, fiberglass manufacturing, painting/coating operations, rendering plant, and coffee roasters. The proposed project does not include these land uses and is not anticipated to generate any objectionable odors. Therefore, project impacts related to odors would be *less than significant* and no mitigation measures are required.

#### Impact AQ-5 TACs

Typical sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. The proposed project would not include land uses such as those previously described. Although the project would generate new traffic trips, the amount of TACs (benzene) that would be generated by these new trips would not be of a high enough concentration to pose a cancer risk that exceeds 10 in one million or a non-cancer risk greater than a hazard index of one. Therefore, project impacts related to TACs would be *less than significant* and no mitigation measures are required.

#### Impact AQ-6 GHG and GCC

As stated above, three types of analyses are used to determine whether the project could be in conflict with the State measures for reducing GHG emissions. The analyses are as follows:

*Item A*: The proposed project does not pose any apparent conflict with the most recent list of the CARB early action strategies (see Table IV.B-6). As mentioned above, the 44 measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

*Item B*: The proposed project is not the type of project that would be required to report emissions to CARB (i.e., the project is not a cement plant, oil refinery, electric generating facility/provider, cogeneration facility, or hydrogen plant or other stationary combustion source that emits more than 25,000 metric tons per year of  $CO_2e$  emissions). Therefore, the specific emissions from this proposed project would not be expected to have a substantial impact on GCC.

ID#	Sector	Strategy Name	ID#	Sector	Strategy Name
1	Fuels	Above Ground	23	Commercial	SF <sub>6</sub> reductions from
2	Transportation	Storage Tanks Diesel – Off-road	24	Transportation	the non-electric sector Tire inflation program
2	Tansportation	equipment (non-	2 <b>4</b>	Tansportation	r ne mnación program
		agricultural)			
3	Forestry	Forestry protocol	25	Transportation	Cool automobile paints
4	Transportation	endorsement Diesel – Port trucks	26	Cement	Cement (A): Blended
-	Transportation	Dieser Tort ducks	20	Cement	cements
5	Transportation	Diesel – Vessel main	27	Cement	Cement (B): Energy
		engine fuel			efficiency of California
6	Transportation	specifications Diesel – Commercial	28	Transportation	cement facilities Ban on HFC release
U	Transportation	harbor craft	20	Transportation	from Motor Vehicle
					AC service /
	<b>T</b>		20	The second se	dismantling
7	Transportation	Green ports	29	Transportation	Diesel – Off-road equipment
					(agricultural)
8	Agriculture	Manure management	30	Transportation	Add AC leak tightness
		(methane digester			test and repair to Smog Check
9	Education	protocol) Local Government	31	Agriculture	Research on GHG
,	Ducution	GHG reduction	51	Tighteuttare	reductions from
		guidance / protocols			nitrogen land
10	Education	Business GHG	32	Commercial	applications Specifications for
10	Education	reduction guidance /	32	Commercial	commercial
		protocols			refrigeration
11	Energy Efficiency	Cool communities	33	Oil and Gas	Reduction in venting /
		program			leaks from oil and gas systems
12	Commercial	Reduce high GWP	34	Transportation	Requirement of low-
		GHGs in products		1	GWP GHGs for new
12	Commin		25	Turner	Motor Vehicle ACs
13	Commercial	Reduction of PFCs from semiconductor	35	Transportation	Hybridization of medium and heavy-
		industry			duty diesel vehicles
14	Transportation	SmartWay truck	36	Electricity	Reduction of SF <sub>6</sub> in
15	Transportation	efficiency Low Carbon Fuel	27	Commercial	electricity generation
15	Transportation	Low Carbon Fuel Standard (LCFS)	37	Commercial	High GWP refrigerant tracking, reporting and
					recovery program
16	Transportation	Reduction of HFC-	38	Commercial	Foam recovery /
		134a from DIY Motor Vehicle AC servicing			destruction program
17	Waste	Improved landfill gas	39	Fire Suppression	Alternative
		capture			suppressants in fire
					protection systems

## Table IV.B-6Recommended AB 32 Greenhouse Gas Measuresto be Initiated by CARB between 2007 and 2012

ID#	Sector	Strategy Name	ID#	Sector	Strategy Name
18	Fuels	Gasoline dispenser	40	Transportation	Strengthen light-duty
		hose replacement			vehicle standards
19	Fuels	Portable outboard marine tanks	41	Transportation	Truckstopelectrificationwithincentives for truckers
20	Transportation	Standards for off-cycle driving conditions	42	Transportation	Diesel – Vessel speed reductions
21	Transportation	Diesel – Privately owned on-road trucks	43	Transportation	Transportation refrigeration – electric standby
22	Transportation	Anti-idling enforcement	44	Agriculture	Electrification of stationary agricultural engines
Source:	CARB, 2007.				

Table IV.B-6Recommended AB 32 Greenhouse Gas Measuresto be Initiated by CARB between 2007 and 2012

As shown in Table IV.B-7, proposed project construction GHG gas emissions for the proposed project would be approximately 2,550.70 metric tons per year of  $CO_2e$  emissions and project operations would be approximately 476.67 metric tons per year of  $CO_2e$  emissions (including emissions from vehicle trips, space heating and indirect emissions from the use of electricity). Operational emissions would therefore be significantly lower than the reporting limit, which is 25,000 metric tons per year of  $CO_2e$  emissions. Accordingly, the project would not be subject to CARB's mandatory reporting requirements.

## Table IV.B-7Predicted Proposed Project-RelatedGreenhouse Gas (GHG) Emissions

Emissions Source	CO2e Emissions (Metric Tons per Year)
Construction	
Maximum Annual	2,550.70
Operations	
Natural Gas Use	108.55
Electrical Use	56.14
Motor Vehicles	311.98
Total	476.67
Source: Christopher A. Joseph &	Associates, 2008.

*Item C*: The design of the proposed project has the potential to minimize GHG emissions related to construction and operation of the proposed project. In addition, the proposed project will be in accordance with BAAQMD required mitigation measures for construction and operations emissions.

The review of Items A, B, and C indicate that the proposed project would not conflict with the State goals in AB 32 and therefore this impact would be *less than significant*.

#### **CUMULATIVE IMPACTS**

As described below in more detail, the project would have a *significant and unavoidable* impact to air quality during the construction and grading phase if the recommended mitigation measures are not implemented. The project impact would affect air quality throughout the region and, therefore, construction impacts would create a significant cumulative air quality impact. The proposed project would not have any significant air quality impacts during the operational phase. The proposed project is located within the jurisdiction of San Mateo County, which has a General Plan that is consistent with the region's 2000 CAP. The project is consistent with the General Plan since the build out density would not exceed the allowable densities assumed in the General Plan. In addition, the project would not be a significant source of odors or TACs emissions and it would not be located in proximity to these types of sources. For these reasons, the proposed project would not result in a significant cumulative operational air quality impact. Therefore, cumulative operational impacts would be *less than significant* and no mitigation measures are required.

#### LEVEL OF SIGNIFICANCE AFTER MITIGATION

#### **Construction Phase**

According to the BAAQMD CEQA Guidelines, implementation of Mitigation Measure AQ-1 (Construction Phase Measures Number 1 - 13) outlined previously would reduce significant impacts of  $PM_{10}$  to a less-than-significant level. Further, Construction Equipment Exhaust Measures Number 1 - 7 under Mitigation Measure AQ-1 would represent best available control measures for reducing grading phase TAC and  $NO_x$  emissions. Additionally, implementation of Construction Equipment Exhaust Measure Number 8 would further reduce emissions by ensuring proper implementation of the mitigation measures. The emissions reduction provided by most of these mitigation measures were estimated using the URBEMIS2007 model. With implementation of the above measures,  $PM_{10}$  emissions would be reduced by over 80 percent to about 56 ppd, resulting in less-than-significant impacts for that pollutant. Equipment exhaust emissions of  $NO_x$  could be reduced by about 20 percent to 142.3 ppd. However, these emissions would continue to exceed the 80 ppd BAAQMD operational threshold during the grading phase. The Mitigation Measure AQ-1 measures only affect the on-site sources of  $NO_x$  emissions and have no effect on emissions from haul trucks. Besides shortening haul route travel lengths during the grading phase, there are no reasonable measures that could reduce this significant portion of the  $NO_x$ emissions that are mostly off-site. One measure to consider that would reduce  $NO_x$  emissions would be an extended grading period that would reduce the number of daily trips and on-site equipment exhaust. However, the period of the impact would be extended, and NO<sub>x</sub> emissions would likely remain greater than the BAAOMD operational threshold. Implementation of the abovementioned Construction Equipment Exhaust Mitigation Measures 1 - 8 would further reduce the TACs associated with the project's haul trucks, and the associated impacts would be less than significant. Because grading activities associated with the project would exceed the BAAQMD NO<sub>x</sub> operational threshold, short-term project impacts on air quality during construction would be *significant and unavoidable*.

#### **Operational Phase**

Air quality impacts during the project's operational phase would be *less than significant*.

#### IV. ENVIRONMENTAL IMPACT ANALYSIS C. BIOLOGICAL RESOURCES

#### INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) provides a description of the biological resources on the project site, including: the vegetation communities, wildlife, special-status species, and sensitive natural communities; a discussion of the regulations that serve to protect sensitive resources; an assessment of the potential impacts of the proposed Ascension Heights Subdivision project ("proposed project"); and recommendations to minimize and mitigate potentially significant impacts on sensitive resources.

#### METHODOLOGY

Various biological resources reports prepared for the project site were reviewed to verify the adequacy, completeness, and accuracy for their use in this section of the DEIR. The information in this section is based on the studies listed below, with supplements from Christopher A. Joseph & Associates (CAJA) biological studies and site reconnaissance. The below studies and associated data are included in Appendix E of this DEIR.

- Ascension Heights Subdivision Biology Report, prepared by R. Villasenor & Associates, July 1, 2003;
- *Tree Report on Thomas Subdivision (Ascension Heights)*, 1542 Bel Aire, San Mateo, California, prepared by Mayne Tree Expert Company, Inc., August 18, 2003; and
- Results of Mission Blue Butterfly Surveys at Ascension Heights Project Area, San Mateo, California, prepared by Thomas Reid Associates (TRA), September 15, 2005.

The data and information presented in this discussion is based upon the citations noted in the reports, as well as a field survey conducted by R. Villasenor & Associates on May 18, 2003. An additional site reconnaissance was conducted by CAJA biologists on June 27, 2008 to verify current site conditions and evaluate potential impacts of the proposed project on biological resources. The field surveys were conducted on foot with the aid of topographic maps (approximately 1'' = 80') and available aerial photographs of the site. The biological field surveys were conducted at a time of the year when most of the sensitive plant species with potential to occur in the area would be in bloom and identifiable. The methods used to assess the biological resources within the project site are described in more detail below.

#### **Vegetation Communities**

Plant communities were classified based on existing descriptions developed by The Manual of California Vegetation.<sup>1</sup> However, in some cases it was necessary to identify variants of plant community types that were not described in the literature.

#### **Special-Status Species**

For the purposes of this analysis, special-status species include those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the United States Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration (NOAA) Fisheries under the federal Endangered Species Act (ESA); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Game (CDFG) under the California Endangered Species Act (CESA); plants occurring on List 1A, List 1B, and List 2 of the California Native Plant Society (CNPS) Inventory; and plants and animals designated as "species of special concern" or "fully protected" by the CDFG. Species with legal protection under the 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 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 obstruction of essential behavior patterns (i.e. breeding, feeding, or sheltering) through significant habitat modifications or degradation. The CDFG also considers the loss of listed species habitat as "take", although this policy lacks statutory authority and case law support under the CESA.

The potential occurrence of special-status species within the project site was evaluated by first developing a list of special-status plants and animals that are known to or have the potential to occur in the vicinity of the project site based on a search of the California Natural Diversity Database (CNDDB) and CNPS Electronic Inventory records, including the San Mateo U.S. Geological Service (USGS) 7.5-Minute Quadrangle and the eight surrounding USGS quadrangles<sup>2,3</sup> and review of the USFWS List of Listed, Proposed, and Candidate Species Which May Occur in San Mateo County,<sup>4</sup> and the San Mateo County

<sup>&</sup>lt;sup>1</sup> Sawyer & Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.

<sup>&</sup>lt;sup>2</sup> California Department of Fish and Game. 2008. California Natural Diversity Database (CNDDB) Rarefind [CD-ROM], Wildlife Habitat Data Analysis Branch, California Department of Fish and Game. Sacramento: California.

<sup>&</sup>lt;sup>3</sup> California Native Plant Society. 2008. Inventory of Rare and Endangered Plants (online edition, v7-06d). California Native Plant Society, Sacramento. Accessed by CAJA Staff at http://cnps.org/inventory.

<sup>&</sup>lt;sup>4</sup> U.S. Fish and Wildlife Service. 2008. Listed, Proposed, and Candidate Species which May Occur in San Mateo County, Sacramento (CA): Sacramento Fish and Wildlife Office. Accessed by CAJA Staff at http://www.fws.gov/sacramento/es/spp\_lists/auto\_list.cfm.

General Plan. Each species was evaluated for its potential to occur in the project site according to the following criteria:

**Not Expected**. Species listed as "not expected" to occur in the project site are those species for which:

- There is no suitable habitat present in the project site (i.e., habitats in the project site are unsuitable for the species requirements; e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime, etc.); and/or
- The project site has been surveyed during the proper time of year with negative results for the species.

Low. Species listed as having a "low potential" to occur in the project site are those species for which:

- There are no known records of occurrence in the vicinity of the project site; and/or
- There is marginal or very limited suitable habitat present in the project site.

Medium. Species listed as having a "medium potential" to occur in the project site are those species for which:

- There are known records of occurrence in the vicinity of the project site; and/or
- There is marginal suitable habitat present in the project site.

High. Species listed as having a "high potential" to occur in the project site are those species for which:

- There are known records of occurrence in the vicinity of the project site (there are many records and/or records in close proximity); and/or
- There is suitable habitat present in the project site.

**<u>Present</u>**. Species listed as "present" in the project site are those species for which:

• The species was observed in the project site.

#### Sensitive Natural Communities

Sensitive natural communities include riparian habitats, wetlands, and habitats for protected species. These communities are usually identified in local or regional plans, policies, or regulations, or by federal or state agencies (e.g., USFWS, U.S. Army Corps of Engineers (Corps), CDFG, Regional Water Quality Control Board (RWQCB)). Vegetation communities and wildlife habitats identified in the project site were evaluated to determine if they are considered sensitive by local, state, or federal agencies. The specific methods used to determine the potential presence of sensitive natural communities are described in more detail below.

#### Riparian Habitat

A review of the aerial photographs and the project site photographs, and an on-site inspection of the drainages, ponds, and other aquatic features were conducted to determine if the banks of these features support hydrophytic or stream-dependent woody plant species (i.e., riparian species). In addition, the biology report prepared by R. Villasenor & Associates was reviewed to determine whether riparian habitat was noted during surveys.

#### Waters of the United States & Waters of the State

The presence and extent of Waters of the U.S. and Waters of the State in the project site were inferred by reviewing the biology report completed by R. Villasenor & Associates and by conducting a site visit to confirm the extent of federal and/or state jurisdiction on the project site, pursuant to Section 404 and 401 of the federal Clean Water Act (CWA).

#### **ENVIRONMENTAL SETTING**

#### **Regional Setting**

The project site is located within the unincorporated community of the San Mateo Highlands in the County of San Mateo, just southwest of the City of San Mateo. The project site is located approximately 0.75 miles east of Interstate 280 (I-280) and 0.75 miles west of State Route 92 (SR 92).

#### Local Setting

The 13.25-acre project site is located at the eastern corner of Bel Aire Road and Ascension Drive. The surface elevation of the site ranges from approximately 410 to 610 feet above mean sea level (msl). The site was graded over 40 years ago, which consisted of excavating the sides of the hill for construction of Ascension Drive and Bel Aire Road. The cut slopes were made at 1.5 to 1 percent with 8-foot wide benches spaced at 30-foot vertical intervals. The soils on the site consist of Franciscan Complex bedrock, including hard sandstone with occasional claystone interbeds. Colluvium and artificial fill overlay the bedrock, with the colluvium consisting of a brown sand, silt, and clay mixture containing scattered angular gravel fragments of sandstone and greenstone, with 1 to 2 feet of gray clayey topsoil present at the surface.<sup>5</sup> A small abandoned quarry pit is located on the northeast side of the project site and is characterized by a crescent shaped, near vertical cut slope up to approximately 5 to 6 feet in height, with a mound of debris (tailings) located just downslope. The quarry cuts expose sandstone bedrock beneath a thin veneer of soil. A few yards of rock was removed from this location at some time in the past.

<sup>5</sup> U.S. Department of Agriculture. 1991. Soil Survey of San Mateo County, Eastern Part, and San Francisco County. In cooperation with the University of California (Agricultural Experiment Stations). 131pp.

Surface runoff water from the benches has eroded deeply (locally more than 10 feet) into the unconsolidated colluvial materials exposed on the cut slopes and benches. On-site vegetation includes grassland, shrubland, and scattered coast live oak (*Quercus agrifolia*) and Monterey pine (*Pinus radiata*) trees. A small eucalyptus grove is located on the southeast side of the site.

A potable water tank (owned by the California Water Service Company) and a cell transmitter site, enclosed by fencing and surrounded by Monterey pine trees, are located within the project site (APN: 041-111-020) and are served by a small access road that connects to Bel Aire Road. This road also serves as the only access point to the project site. This parcel is not a part of the proposed project.

The following provides descriptions of vegetation and wildlife habitat types, the potential occurrence of special-status species, the occurrence of sensitive natural communities, and jurisdictional wetlands and waters within the project site.

#### Vegetation Communities and Wildlife Habitats

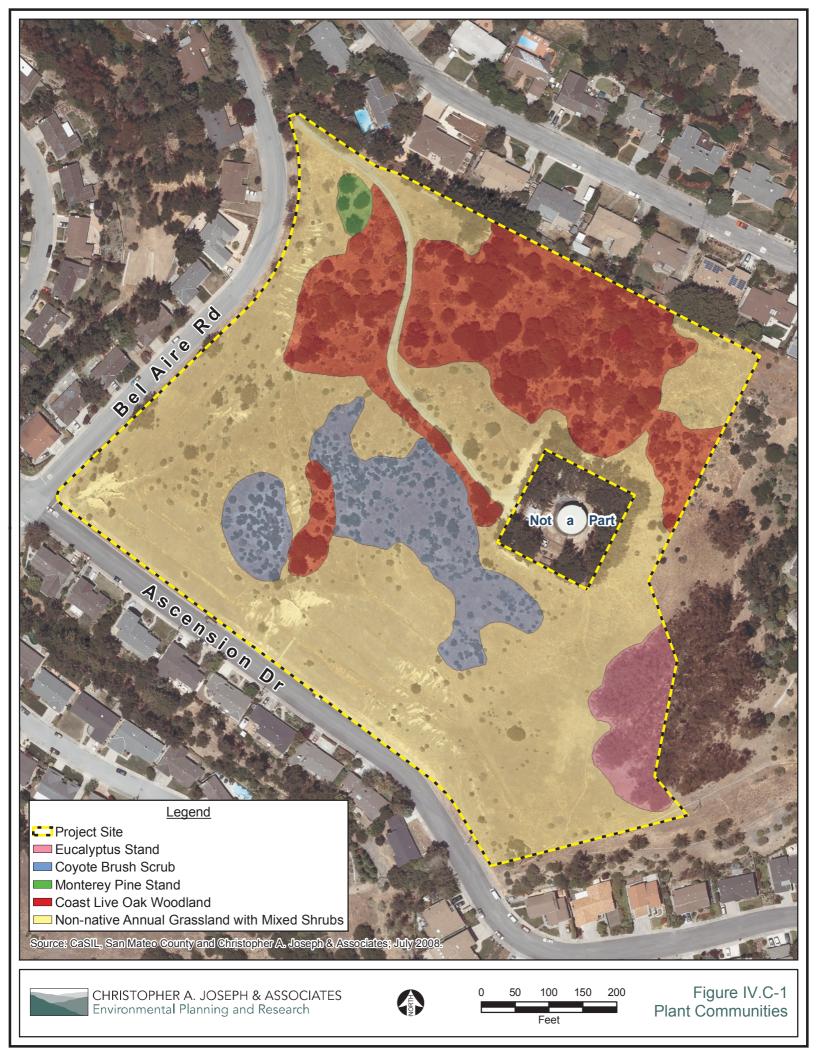
Vegetation communities and wildlife habitats identified in the project site are described below and illustrated on Figure IV.C-1. A map of trees surveyed within the project site by the DEIR arborist, Mayne Tree Expert Company, Inc. is provided as Figure IV.C-2. As discussed previously, descriptions below are derived from existing descriptions developed by The Manual of California Vegetation. Due to the extensive level of disturbance on the project site, it was necessary to identify variants of plant community types that are not described in the literature. The existing plant communities on the project site consist of a matrix of Coast Live Oak Woodland, Non-Native Annual Grassland, Coyote Brush Scrub, and Non-Native Ornamental Trees. The plant species identified during the field surveys on May 18, 2003 and June 27, 2008 are listed in Table IV.C-1.

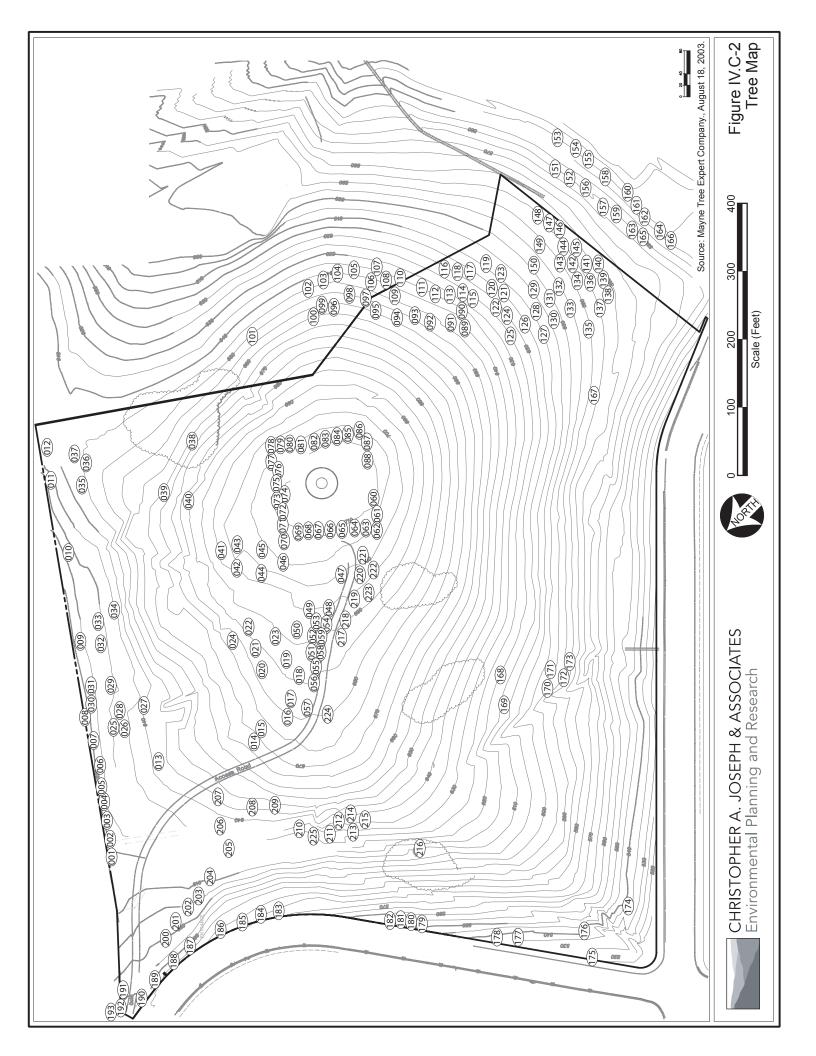
#### Vegetation Communities

#### Coast Live Oak Woodland

Approximately 3.3 acres of Coast Live Oak Woodland was mapped within the project site. The vegetation structure of this community includes stands of coast live oaks (*Quercus agrifolia*) associated with various shrubs including: coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), and escaped ornamentals such as firethorn (*Pyrocantha angustifolia*), acacias (*Acacia sp.*), and juniper trees (*Juniperus sp.*). Scattered Monterey pines are also present within Coast Live Oak Woodland, predominately on the north and east facing slopes bordering areas of open grasslands. Beneath the tree canopies, the ground cover includes: California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symporicarpus albus*), as well as a mix of herbaceous annual grasses and forbs.

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#### Non-Native Annual Grassland

Approximately 8.1 acres of the project site can be classified as Non-Native Annual Grassland with a minor native grass component consisting of purple needlegrass (*Nassella pulchra*), California oatgrass (*Danthonia californica*), scattered coyote brush (*Baccharis pilularis*) and summer lupine (*Lupinus formosus*) shrubs. Common non-native annual grasses include: brome (*Bromus* spp.), European hairgrass (*Aira caryophyllea*), ryegrass (*Lolium multiflorum*), slender wild oats (*Avena barbata*), and rattail fescue (*Vulpia myuros*); common non-native forbs include red-stem filaree (*Erodium cicutarium* sp.), perennial field mustard (*Hirschfeldia incana*), rose clover (*Trifolium hirtum*), hop clover (*T. campestre*), winter vetch (*Vinca villosa*), and various thistles (*Cirsium* sp.). This community occurs within the project site along roads, in flat, open areas along the hill top, and on steeply sloped west- and south-facing hillsides.

Scientific Name	Common Name
Acacia baileyana*	Bailey's acacia
Acacia melanoxylon*	Black acacia
Achillea millefolium	Common yarrow
Achyrachaena mollis	Blow wives
Aira caryophyllea*	Annual hairgrass
Antennaria sp	Pussy-toes
Avena barbata*	Slender oat
Avena fatua	Wild oat
Baccharis pilularis	Coyote brush
Brachpodium distachyon*	False brome
Brassica nigra*	Black mustard
Briza minor*	Little quaking grass
Bromus diandrus*	Ripgut brome
Bromus hordeaceus*	Soft chess brome
Cardus pycnocephalus*	Italian thistle
Chlorogalum pomeridianum	Wavy-leaf soap plant
Cirsium vulgare	Bull thistle
Convolvulus arvensis*	Field bindweed
Cortaderia selloana*	Pampas grass
Cynodon dactylon*	Bermuda grass
Cyperus eragrostis *	Nutsedge
Cynosurus echinoides*	Hedgehog dogstail
Cytisus scoparius*	Scotch broom
Danthonia, californica	California oatgrass
Dentaria claifornica	Milk maids
Dichelostemma pulchellum	Blue dicks
Dipsacus fullonum*	Fuller's teasel

Table IV.C-1 List of Plant Species Observed On-Site

List of Plant Species Observed On-Site			
Scientific Name	Common Name		
Eriogonum sp.	Buckwheat		
Erodium botrys*	Long-beaked storksbill		
Erodium cicutarium*	Redstem storksbill		
Eschscholzia californica	California poppy		
Eucalyptus citirodora*	Spotted gum tree		
Eucalyptus Globulus *	Blue gum tree		
Festuca arundinacea*	Tall fescue		
Foeniculum vulgare*	Sweet fennel		
Galium aparine	Bedstraw		
Heteromeles arbutifolia	Toyon		
Hirschfeldia incana	Perennial field mustard		
Hordeum sp	Barley		
Hypochaeris glabra*	Smooth cats-ear		
Juncus patens	Spreading rush		
Juniperus sp*	Upright juniper		
Linum bienne*	flax		
Lolium multiflorum*	Italian ryegrass		
Lotus scoparius	Deerweed		
Lupinus bicolor	Miniature lupine		
Lupinus formosus	Summer lupine		
Lupinus subvexus	Valley lupine		
Marah fabaceous	California manroot		
Medicago arabica*	Spotted clover		
Medicago polymorpha*	Bur clover		
Montia perfoliata	Miner's lettuce		
Mullia maritime	Common mullia		
Nassella pulchra	Purple needlegrass		
Pichris echoides*	Ox tongue		
Pinus radiata*	Monterey pine		
Plantago lanceolata*	English plantain		
Pyracantha angustifolia*	Firethorn		
Quercus agrifolia	California live oak		
Ranunculus californica	California buttercup		
Rosa sp.	Wild rose		
Rubus ursinus	Wild blackberry		
Rumex acetosella*	Sheep sorrel		
Rumex crispus*	Curly dock		
Rumex pulchre*	dock		
Sanicula crassicaulis	Pacific sanicula		
и			

Table IV.C-1List of Plant Species Observed On-Site

Scientific Name	Common Name	
Satureja douglasiana	Yerba buena	
Sidalcea oregana	Oregon sidalcea	
Sidelcea malvaeflora	Checker bloom	
Silene gallica*	Common catchfly	
Silybum marianum*	Milk thistle	
Sisyrinchium bellum	Blue-eyed grass	
Sonchus asper*	Prickly sow thistle	
Sonchus oleraceus*	Common sow thistle	
Stachys ajugoides var rigida	Rigid hedge nettle	
Stellaria media	Common chickweed	
Symphocarphus albus	Common snowberry	
Toxicodendron diversilobum	Poison oak	
Trifolium campestre	Hop clover	
Trifolium fragiferum	Strawberry clover	
Trifolium hirtum	Rose clover	
Trifolium variegatum	White-tipped clover	
Vicia sativa*	Spring vetch	
Vicia villosa ssp. varia *	Winter vetch	
Vinca major*	Periwinkle	
Vulpia myuros*	Rattail fescue	
Wyethia angustifolia	Narrowleaf mule ears	
Notes: * Non-Native Sources: Abrams, Leroy. Illustrated Flora of the Pacific States, 1984. Bailey, L.H. Manual of Cultivated Plants, 1949 Hickman, James C. editor, The Jepson Manual Higher Plants of California, 1994. Munz, Philip A. and David D. Keck. A California Flora, 1970.		

Table IV.C-1List of Plant Species Observed On-Site

#### Coyote Brush Scrub

Approximately 1.4 acres of the project site is dominated by coyote brush and were mapped as Coyote Brush Scrub. This community supports moderate to dense shrub cover interspersed with non-native annual grasses and forbs in canopy openings. Shrub height varies from 0.3 to 0.7 meters tall. Commonly associated species include: occasional toyon and pyracantha in the shrub layer and a mix of annual grasses such as, slender wild oats, ryegrass, English plantain (*Plantago lanceolata*), and strawberry clover (*Trifolium fragiferum*) in the herbaceous layer.

#### Non-Native Ornamental Trees

Ornamental shrubs and trees are scattered throughout the project site with the largest and most concentrated groupings occurring along the northwest and southeastern portions of site, where there is a

0.1-acre stand of planted Monterey pine (*Pinus radiata*) and 0.5 acres of blue gum (*Eucalyptus* sp.), respectively (refer to Figure IV.C-1).

#### Wildlife Habitats

Coast Live Oak Woodlands provide habitat for a variety of wildlife species, including: turkey, squirrels, and deer that utilize the oak acorns as a major food item in their diets. During field surveys, mule deer (*Odocoileus hemionus*) were observed resting and foraging in this community. Several common bird species were observed flying over the project site and foraging in the Non-Native Annual Grassland community, including: white bushtit (*Psaltiparus minimus*), chickadee (*Parus spp.*), Western bluebird (*Sialia mexicana*), and house finch (*Carpodacus mexicanus*). Western fence lizards (*Scaeloporus occidentalis*) were also observed on rock outcrops and on fallen trees.

#### Wildlife Movement and Corridors

Until recently, most wildlife species lived in well-connected landscapes, with room to move and the ability to meet their needs. Development and other human-related activities have severed natural connections among many landscapes, creating islands of habitat or patches. Habitat fragmentation affects wildlife behavior, foraging activity, reproductive patterns, immigration and emigration or dispersal capabilities, and survivability. Wildlife corridors play an important role in countering habitat fragmentation. A wildlife corridor is a linear landscape element, which serves as a linkage between historically connected habitats or landscapes that are otherwise separated<sup>6</sup> and is meant to provide avenues along which: (1) wildlife can travel, migrate, and meet mates; (2) plants can propagate; (3) genetic interchange can occur; (4) populations can move in response to environmental changes and natural disasters; and (5) individuals can re-colonize habitats from which populations have been locally extirpated.<sup>7</sup> Corridors can consist of a sequence of stepping-stones across the landscape (discontinuous areas of habitat such as isolated wetlands and roadside vegetation), continuous lineal strips of vegetation and habitat (such as riparian strips and ridge lines), or they may be parts of larger habitat areas selected for its known or likely importance to local wildlife.

Due to considerable residential and commercial development within and surrounding the project site, including a network of busy roadways surrounding the site, the project site does not provide viable linkages or migration corridors between habitat areas. To the extent that small and fragmented patches of remnant habitats occur within the project site, they have become virtual islands of habitat and provide limited opportunity for wildlife movement and exchange of genetic material. Wildlife movement between the site and large expanses of undeveloped public land including the Crystal Springs Reservoir

<sup>&</sup>lt;sup>6</sup> McEuen, A. 1993. The Wildlife Corridor Controversy: A Review. Endangered Species Update. September/October 1993, Vol. 10, Nos. 11 & 12.

<sup>&</sup>lt;sup>7</sup> Beir, P. and S. Loe. 1992. In My Experience: A Checklist for Evaluating Impacts to Wildlife Movement Corridors. Wildlife Society Bulletin, Vol. 20, No. 4. (Winter, 1992), pp. 434-440.

area, located two miles to the west, is likely to be very restricted (except for bird species) due to the lack of physical linkages and existing barriers, such as I-280, located 0.75 miles to the west of the project site. Migration through the site may occasionally occur for only the most mobile terrestrial species, such as mule deer as "accidental" incidents, possibly facilitated by disturbances causing an individual to panic and flee the site, and likely only at night when the considerable barriers of traffic and human disturbance activities in the surrounding urban environment are at their lowest levels. Such movement is sporadic and very unlikely to result in a significant exchange in genetic material or linkage of the site to core habitat areas. Therefore, the project site does not act as a true wildlife corridor, movement pathway, or linkage of note between larger habitat areas for terrestrial wildlife.

#### Special-Status Species

The special-status plant and wildlife species evaluated for their potential to occur in the project site are identified in Tables IV.C-2 and IV.C-3 of this DEIR, respectively. Those species rated as having a "medium" potential for occurrence are discussed further below. No special-status species were "present" or had a "high" potential for occurrence. The plants and animals rated as "not expected" to occur or that have a "low" potential for occurrence are not discussed in this section because: (1) these species are not likely to occur in the project site due to the fact that the general habitat and/or micro-habitat requirements for the species are not present, (2) the species distribution does not include the project site, and/or (3) the species was not detected during field surveys.

#### Special-Status Plant Species

Based on the data compilation, background research and botanical site surveys, 48 special-status plant species have been recorded in the vicinity of the project site. Table IV.C-2 provides a list of all special-status plant species considered and evaluated for their potential and summarizes the habitat requirements, blooming period, and potential for species' occurrences within the project site. On May 18, 2003 and June 26, 2008, R. Villasenor & Associates and CAJA biologists, respectively, conducted two separate focused special-status plant surveys on the project site. The survey dates coincided with blooming periods for a majority of special-status plant species with potential to occur on-site.

Specific habitat requirements of potentially present species were evaluated and compared to the conditions observed during the site survey. Based on this evaluation, all of these species were considered "not expected" or had "low potential" to occur on-site due to varying reasons, including a lack of their observation during their reported blooming season, absence of suitable habitat on-site (e.g., serpentine or alkaline soils) and/or a high level of human-related site disturbance. All of the plant species observed within the project site listed in Table IV.C-1 are common to the region and are not considered to be special-status.

The field survey was conducted in mid May 2003 and late June 2008 during times when most of the special-status plant species are expected to be blooming. Some perennial species were identifiable even when not in flower (manzanita [*Arctostaphylos*, spp.], the San Francisco gum plant [*Grindelia hirsutula* var. *maritima*], and Western leatherwood [*Dirca occidentalis*]), and were not observed during the

surveys. Other species would not be expected to occur on the project site due to a lack of suitable habitat such as vernal pools or coastal salt marsh. Many of the species initially identified from the database search are typically associated with serpentine soils. One of these plants, the Crystal Springs lessingia (*Lessingia arachnoidea*), does not typically bloom until July. However, the species would have been identifiable by vegetative parts during the late-June survey if present on the project site. Furthermore, the site does not support serpentine soils, nor were plant species typically associated with this soil type found on the project site, such as ruby chalice fairyfan (*Clarkia rubicunda*), Oregon Western rosinweed (*Calycadenia truncata*), and coyote mint (*Monardella*, spp.). Therefore, Crystal Springs lessingia is not expected to be found on the project site.

Based upon the survey results, a review of species' habitat requirements, and due to the heavily disturbed nature of the project site, it is unlikely that the project site supports a majority of special-status plant species recorded from the project site vicinity. However, there is a low to medium potential for the Non-Native Annual Grassland community on the project site to support three special-status plant species that typically bloom from February to April: caper-fruited tropidocarpum (*Tropidocarpum capparideum*; CNPS 1B), Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*; CNPS 1B), and fragrant fritillary (*Fritillaria liliacea*; CNPS 1B).

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	Common		Sta	Status <sup>1</sup>			
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence
Acanthomintha duttonii	San Mateo Thom-mint	Е	Е	G1/S1.1	List 1B.1	Valley grasslands and chaparral on serpentine soils. Known to occur along Pulgas Ridge immediately west of the project site. Blooms April - June	<b>Not Expected.</b> Site does not support serpentine soils and species was not observed during June 2008 site visit.
Allium peninsulare var francisanum	Franciscan Onion	I	1	G5T2/S2.2	List 1B.2	Clay serpentine soils and known to occur at San Mateo Creek, north of the project site. Blooms March - June	<b>Not Expected.</b> Site does not support serpentine soils and species was not observed during May 2003 and June 2008 site visits. Nearby reference site was searched and plant was found in bloom.
Amsinckia lunaris	Bent-flowered fiddleneck	I	I	G2/S2.2	List 1B.2	Valley and foothill grasslands. Blooms March - June	<b>Not Expected.</b> Suitable habitat, but was not found on site and species was not observed during May 2003 and June 2008 site visits.
Arctostaphylos andersonii	Santa Cruz Manzanita	1	I	G2/S2?	List 1B.2	Broadleaved or North Coast coniferous forest. Blooms November to April	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.
Arctostaphylos hookeri ssp. franciscana	Franciscan manzanita	!	1	G3TXC/S X	List 1A	Coastal Scrub. Blooms February to April	<b>Not Expected.</b> Extinct, only in cultivation. No native populations.
Arctostaphylos hookeri ssp. ravenii	Presidio manzanita	Щ	Ш	G3T1/S1.1	List 1B.1	Rocky serpentine slopes. Blooms February to March	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.

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	Common		Sta	Status <sup>1</sup>			
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence
Arctostaphylos imbricata	San Bruno Mountain manzanita	-	Е	G1/S1.2	List 1B.1	Sandstone outcrops in chaparral and coastal scrub. Blooms February to May	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.
Arctostaphylos montaraensis	Montara manzanita	1	I	G2/S2.2	List 1B.2	Chaparral and coastal scrub. Blooms January to March	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.
Arctostaphylos pacifica	Pacific manzanita	1	ш	G1/S1.1	List 1B.2	Coastal scrub. Blooms February to April	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.
Arctostaphylos regismontana	Kings Mountain manzanita	-	I	G2/S2.2	List 1B.2	Broadleaved upland forest, chaparral, north coast coniferous forest. Granitic or sandstone outcrops. 305- 730 m. <i>Blooms January to April</i>	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and no <i>Arctostaphylos</i> species were observed during the site visits.
Astragalus tener var. tener	Alkali milk- vetch	ł	ł	GIT1/S1.1	List 1B.2	Vernal pools and playas in valley and foothill grasslands. Blooms March - June	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and the species was not observed during the site visits.
Centromadia parryi ssp. parryi	Pappose tarplant	ŀ	I	G4T2/S2.2	List 1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernally mesic, often alkaline sites. 2-420 m. <i>Blooms May - November</i>	<b>Not Expected.</b> Suitable seep or vernal pool habitat not present and species not observed in grassland habitat during site visits.

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	Common		Sti	Status <sup>1</sup>			<b>7</b>
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence <sup>7</sup>
Centromadia parryi ssp. congdonii	Congdon's tarplant	1	1	G4T3/S3.2	List 1B.2	Alkaline soils in Valley and foothill grasslands. Bloom June – November	<b>Not Expected.</b> Marginally suitable grassland habitat is present, but species was not observed during the June 2008 site visit.
Chorizanthe cuspidata var cuspidata	San Francisco Bay Spineflower	1	;	G2T2/S2.2	List 1B.2	Sandy soils of coastal terraces and slopes in coastal scrub, dunes or prairie. Blooms April – July	<b>Not Expected.</b> Suitable sandy soils and vegetation communities do not occur on the site and species not observed during the site visits.
Chorizanthe robusta var. robusta	Robust spine- flower	ш	1	G2T1/S1.1	List 1B.1	Coastal sandy terraces and bluffs. Bloom April – September	<b>Not Expected:</b> Suitable sandy terrace habitat for this plant does not occur on the site and species not observed during the site visits.
Cirsium fontinale var fontinale	Fountain Thistle	E	E	G2T1/S1.1	List 1B.1	Wet seeps in serpentine grasslands. Known to occur along Pulgas Ridge immediately west of project site. Blooms June – October	<b>Not Expected:</b> Suitable habitat for this plant does not occur on the site and species was not observed during the June 2008 site visit.
Cirsium occidentalis var. compactum	Compact Cobwebby Thistle	1	-	G3G4T2/S 2.1	List 1B.2	Coastal dunes, scrub, and prairie, chaparral and on clay soils. Blooms April – June	<b>Not Expected:</b> Site does not support suitable habitats or soils and species was not observed during the site visits.
Cirsium praeteriens	Lost Thistle	:	-	GX	List 1A	Extinct.	Not Expected. Not found on the site.
Collinsia multicolor	San Francisco collinsia	1	-	G2/S2.2	List 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus. 30- 250 m. <i>Blooms March - May</i>	<b>Not Expected.</b> Site does not support suitable habitats or soils and species was not observed during the site visits.
Cordylanthus maritimus ssp. palustris	Pt. Reyes Bird's beak	ł	ł	G4?T2/S2. 2	List 1B.2	Coastal marshes and swamps. Blooms June – October	<b>Not Expected:</b> Suitable habitat for this plant does not occur on the site and species not observed during the June 2008 site visit.

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	Common		Sta	Status <sup>1</sup>			2
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence <sup>7</sup>
Dirca occidentalis	Western Leatherwood	ł	1	G2G3/S2S 3	List 1B.2	Mixed evergreen and woodland communities on mesic sites. Blooms January – April	<b>Not Expected.</b> Site does not support suitable habitats and this perennial species was not observed during the site visits.
Eriophyllum latilobum	San Mateo Woolly Sunflower	щ	Ш	G1/S1.1	List 1B.1	Openings in woodlands, often in roadcuts. Nearest known population is located approximately one mile to the north. Blooms May - June	<b>Not Expected.</b> Suitable habitat, but not found during May 2003 and June 2008 site visits. Nearby reference sites were searched and the plant was found in bloom during the site survey.
Eryngium aristulatum var. hooveri	Hoover's button-celery	I	-	G5T2/S2.1	List 1B.1	Vernal pools. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 5-45 m. <i>Blooms July</i> .	<b>Not Expected.</b> Site does not support suitable vernal pool or seasonal wetland habitat and species was not observed during the site visits.
Fritillaria biflora var ineziana	Hillsborough Chocolate Lily	ł	1	GIQTIQ/S 1.1	List 1B.1	Woodlands and grasslands on serpentine soils. The nearest know population is located at Upper Crystal Springs Reservoir to the west. Blooms March - April	Low to Medium. Although site supports grassland habitat, it does not support serpentine soils and disturbed site conditions and high annual grass cover would likely preclude the presence of this species. Nearby reference site was searched and plant was not found in bloom during May 2003 site visit.

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Table IV.C-2 Special-Status Plant Species

			Knc	Known to Occur in Project Area	r in Project	Area	
	Common		Sta	Status <sup>1</sup>			2
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence
Fritillaria liliacea	Fragrant Fritillary	I	1	G2/S2.2	List 1B.2	Clay serpentine soils and known to occur along Pulgas Ridge, immediately west of the project site. <i>Blooms February - April</i>	Low to Medium. Although site supports grassland habitat, it does not support serpentine soils and disturbed site conditions would likely preclude the presence of this species. Nearby reference site was searched and plant was not found in bloom during May 2003 site visit.
Grindelia hirsutula var. maritima	San Francisco gumplant	I	1	G5T2/S2.1	List 1B.2	Coastal Sea bluffs, scrub, valley and foothill grasslands sandy or serpentine soils. Blooms August – September.	<b>Not Expected.</b> Marginal grassland habitat present, but site does not support sandy or serpentine soils. Furthermore, this perennial species was not found on the site during the June 2008 site visit.
Helianthella castanea	Diablo helianthella	-	ł	G3/S3.2	List 1B.2	Chaparral, oak woodland, foothill grasslands. Bloom April – June	Not Expected. Suitable habitat, but species was not found during the site visits.
Hesperolinon congestum	Marin Western Flax	Т	Т	G2/S2.1	List 1B.1	Valley grasslands and chaparral on serpentine soils. Known to occur at Upper Crystal Springs Reservoir approximately one mile west of project site. Blooms May - July	<b>Not Expected.</b> Site does not support serpentine soils and species not observed during the site visits.
Horkelia cuneata ssp. sericea	Kellogg's horkelia	ł	ł	G4T1/S1.1	List 1B.1	Openings in coastal scrub, chaparral, and closed cone coniferous forest. Bloom April – September	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.
Layia carnosa	Beach layia	Щ	Ц	G2/S2.1	List 1B.1	Coastal sand dunes and scrub. Bloom March-July	Not Expected. Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.

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			S <sub>l</sub> Kno	Special-Status Plant Species Known to Occur in Project Area	s Plant Spec	ies Area	
	Common		Sta	Status <sup>1</sup>			
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence <sup>2</sup>
Lasthenia conjugens	Contra Costa goldfields	Э	1	G1/S1.1	List 1B.1	Valley and foothill grassland, vernal pools, cismontane woodland. Extirpated from most of its range; extremely endangered. 1-445 m. <i>Blooms March - June</i>	<b>Not Expected.</b> Potentially suitable grassland and woodland habitat present, but species not found during the site visits. High level of site disturbance would likely preclude the presence of this species.
Lessingia arachnoidea	Crystal Springs Lessingia	1	1	G1/S1.2	List 1B.2	Woodlands, scrub, and grasslands on serpentine soils. The nearest know population is located at Lower Crystal Springs Reservoir to the north. Blooms July – October	Not Expected. Site does not support serpentine soils.
Lessingia germanorum	San Francisco lessingia	Е	Е	G1/S1.1	List 1B.1	Costal scrub and remnant dunes. Bloom June – November	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and species was not observed during the June 2008 site visit.
Malacothamnus aboriginum	Indian Valley bush-mallow	1	1	G3/S3.2	List 1B.2	Cismontane woodland, chaparral. Granitic outcrops and sandy bare soil, often in disturbed soils. 150-1700 m. <i>Blooms April – October</i>	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.
Malacothamnus arcuatus	Arcuate bush- mallow	1	ł	G2Q/S2.2	List 1B.2	Chaparral. Gravelly alluvium. 80- 355 m. Blooms April - September	<b>Not Expected.</b> Suitable chaparral habitat does not occur on the site and species was not observed during the site visits.
Malacothamnus davidsonii	Davidson's bush-mallow	ł	ł	G1/S1.1	List 1B.2	Coastal scrub, riparian woodland, chaparral. Sandy washes. 180-855 m. <i>Blooms June - January</i>	<b>Not Expected.</b> Suitable habitats are Not Expected and species was not observed during the June 2008 site visit.
Malacothamnus hallii	Hall's bush- mallow	I	I	G1Q/S1.2	List 1B.2	Chaparral. Some populations on serpentine. 10-550 m. Blooms May - September	<b>Not Expected.</b> Suitable chaparral habitat does not occur on the site and species was not observed during the site visits.

Table IV.C-2

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			Kno	Known to Occur in Project Area	· in Project	Area	
C	Common		Sta	Status <sup>1</sup>		1	
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence
Pentachaeta bellidiflora	White-rayed Pentachaeta	Е	Е	G1/S1.1	List 1B.1	Open dry rocky areas in grasslands. Blooms March – May	<b>Not Expected.</b> Limited suitable habitat, but not found on site.
Plagiobothrys chorisianus var. chorisianus	Chris's popcorn- flower	-	-	G3T2Q/S2. 2	List 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 15-100 m. Blooms April - June	<b>Not Expected.</b> Suitable habitats are not present and species was not observed during the site visits.
Potentilla hickmanii	Hickman's cinquefoil	Щ	Щ	G1/S1.1	List 1B.1	Freshwater marshes, coastal bluff scrub, seasonally wet seeps and meadows. Blooms April – August	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.
Potomogeton filiformis	Slender leaved pondweed	1	-	G5/S1S2	List 2.2	Freshwater marshes. Blooms May – July	<b>Not Expected.</b> Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.
Sanicula maritima	Adobe sanicle	1	R	G2/S2.2	List 1B.1	Clay soils of seeps and wet meadows. Blooms February – May	<b>Not Expected:</b> Suitable habitat for this plant does not occur on the site and species was not observed during the site visits.
Silene verecunda ssp vericunda	San Francisco Campion	1	-	G5T2/S2.2	List 1B.2	Coastal scrub, valley grasslands and in serpentine grasslands. Blooms March - June	<b>Not Expected:</b> Marginally suitable grassland habitat present, but species not found during the site visits.
Streptanthus albidus ssp. peramoenus	Most beautiful jewel-flower	1	-	G2T2/S2.2	List 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 120-730 m. <i>Blooms (March) April – September</i> (October)	Not Expected. Limited annual grassland habitat onsite, but species was not observed during the site visits.
Triphysaria floribunda	San Francisco owls clover	1	1	G2/S2.2	List 1B.2	Coastal prairie, valley and foothill grasslands usually serpentine soils. Blooms April - June	<b>Not Expected.</b> Site does not support serpentine soils and species not observed during site visits.
Trifolium depauperatum var. hydrophilum	Saline clover	1	-	G5T2/S2.2	List 1B.2	Coastal prairie, valley and foothill grassland. On serpentine and non-	Not Expected. Disturbed annual grassland habitat onsite, but

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Table IV.C-2 Special-Status Plant Species Known to Occur in Project Area		Special-Status Plant Species Known to Occur in Project Area
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	Common		Sta	tatus <sup>1</sup>			
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Period	Potential for Occurrence <sup>2</sup>
						serpentine substrate (such as at Point Reyes). 10-160 m. Blooms April - June	species was not observed during the site visits.
Tropidocarpum capparideum	Caper-fruited tropidocarpum	I	I	G1/S1.1	List 1B.1	Valley and foothill grassland. Alkaline clay. 0-455 m. Blooms March - April	<b>Low.</b> Limited annual grassland habitat onsite and site does not support alkaline soils. Disturbed site conditions and high annual grass cover are likely to preclude the presence of this species.
Usnea longissima	Long-bearded lichen	ł	1	G4/S4.2	n/a	North coast coniferous forest, broadleaved upland forest. Grows in the "redwood zone" on a variety of trees including big leaf maple, oaks, ash, Douglas fir, and bay. 0-610 m.	<b>Not Expected.</b> Site does not support suitable forest habitat and species was not observed during site visits.
Notes: <sup>1</sup> Status Codes:							

ESA: Endangered Species Act of 1972, as amended

Federally listed as Endangered Ы

Federally listed as Threatened Ы

Federally proposed for delisting DD

Federal candidate species (former Category 1 candidates) C

No designation. ÷

California Endangered Species Act CESA:

State listed as Rare ЧЕК

State listed as Endangered

State listed as Threatened

No designation ł

CNDDB: California Natural Diversity Database

G,T,S-rank CNDDB element ranking. The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range, with G1 being the most rare and G5 the least rare. Subspecies receive a T-rank attached to the G-rank. The state rank (S-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached, with SI being the most rare and S5 the least rare.

CNPS: California Native Plant Society

Plants rare, threatened, or endangered in California, but more common elsewhere Plants listed as rare, threatened, or endangered in California and elsewhere IB0

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# Table IV.C-2 Special-Status Plant Species nown to Occur in Project Area

			Kno	wn to Occu	Known to Occur in Project Area	Area	
	Common		Sta	Status <sup>1</sup>			2 2 2
Scientific Name	Name	Federal	State	CNDDB	CNPS	Habitat/Blooming Feriod	Potential for Occurrence
3 Plants about which we need more information No designation	ed more information						
Recently, CNPS added a decimal t	hreat rank to the Lis	t rank to para	llel that used b	y the CNDDB.	This extension	Recently, CNPS added a decimal threat rank to the List rank to parallel that used by the CNDDB. This extension replaces the E (Endangerment) value from the R-E-D Code. CNPS ranks, therefore,	te R-E-D Code. CNPS ranks, therefore,
read like this: 1B.1, 1B.2, etc. New threat code extensions and their meanings are	v threat code extension	ons and their n	teanings are a	as follows:			
. I Seriously endangered in California (over 80% of occurrences threatened / high degree of immediacy of threat)	alifornia (over 80%)	of occurrences	s threatened / k	iigh degree of in	mediacy of thre	eat)	
.2 Fairly endangered in California (20-80% occurrences threatened)	fornia (20-80% occu	rrences threat	ened)				
.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)	alifornia (<20% of o	ccurrences thr	eatened or no	current threats <b>k</b>	(umout		
3 Endemic to California							
<sup>2</sup> The potential for occurrence is	based on: (1) occur	rences record	ed in the CNL	DB within San	Mateo, Palo A	<sup>2</sup> The potential for occurrence is based on: (1) occurrences recorded in the CNDDB within San Mateo, Palo Alto, Woodside, Half Moon Bay, San Leandro, Redwood Point, Hunters Point, San	o, Redwood Point, Hunters Point, San
Francisco South, and Montara Mo	untain USGS 7.5 mir	nute quadrangi	es; (2) knowle	dge of species re	equirements; an	Francisco South, and Montara Mountain USGS 7.5 minute quadrangles; (2) knowledge of species requirements; and (3) May 2003 and June 2008 field reconnaissance.	ssance.
Sources:							
California Natural Diversity Database. July 2008. Biogeographic Data Branch, Department of Fish and Game.	base. July 2008. Bic	geographic D	ata Branch, De	spartment of Fis	h and Game.		
California Native Plant Society, In	ventory of rare and $\epsilon$	ndangered plo	unts of Califorr	iia, July 2008. 1	Accessed by CA.	California Native Plant Society, Inventory of rare and endangered plants of California, July 2008. Accessed by CAJA Staff at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi on November 6, 2006.	nv/inventory.cgi on November 6, 2006.
U.S. Fish and Wildlife Service, Lis	ted, Proposed, and C	andidate Spec	ies which May	Occur in San M	lateo County, Sc	U.S. Fish and Wildlife Service, Listed, Proposed, and Candidate Species which May Occur in San Mateo County, Sacramento (CA): Sacramento Fish and Wildlife Office, July 2008. Accessed by CAJA	fe Office, July 2008. Accessed by CAJA
Staff at http://www.fws.gov/sacramento/programs/listing%5Fch/.	nento/programs/listin	1g%5Fch/.					

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Table IV.C-3 Special Status Wildlife Species	Known to Occur in Project Area
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Scientific Name/		Sta	Status <sup>1</sup>			Hahitat	Potential for Occurrence <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>		
				Invertebrates	brates		
<i>Caecidotea tomalensis</i> (Tomales isopod)	1	1	G2/S2	ł	1	Permanent bodies of fresh water.	Not Expected. Site does not support habitat this species typically inhabits.
<i>Calicina minor</i> (Edgewood blind harvestman)	1	1	G1/S1	1	1	Open grasslands with serpentine outcrops near permanent springs. Nearest population is located at Lower Crystal Springs Reservoir.	Not Expected. Suitable serpentine outcrop habitat does not occur on the site.
Callophrys mossii bayensis (San Bruno elfin butterfly)	ш	1	G4T1/S1	1	1	Coastal mountains near San Francisco Bay, in the fog-belt of steep north facing slopes that receive little direct sunlight. Found near prolific growths of the larval food plant, stonecrop ( <i>Sedum</i> <i>spathulifolium</i> ), which is a low growing succulent. Stonecrop is associated with rocky outcrops that occur at 900 to 1,075 foot elevation. Adult food plants not fully determined; Montara Mountain colonies are suspected to use Montara Mountain manzanita ( <i>Arctostaphylos montaraensis</i> ) and huckleberry ( <i>Vaccinium ovatum</i> ).	Not Expected. Site does not support habitat this species typically inhabits. Additionally, the site does not support this species larval food plant and it is below the elevation range occupied by the species.
Euphydryas editha bayensis (bay checkerspot butterfly)	Ţ	I	G5T1/S1	I	I	Shallow, serpentine-derived soils in native grasslands supporting larval host plants, dwarf plantain (Plantago erecta) or purple owl's clover (Castilleja densiftora or Castilleja exserta).	Not Expected. Site does not support habitat this species typically inhabits. Additionally, the site does not support this species larval food plant.
Hydrochara rickseckeri (Ricksecker's water scavenger	ł	1	G1G2/S1S 2	1	1	Only known from a few widely scattered localities in the San	Not Expected. Site does not support habitat this species typically

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Scientific Name/		Sta	Status <sup>1</sup>			Hahitot	Dotantial for Occurrence <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	TIAULUA	
beetle)						Francisco Bay area, including Marin, Sonoma, Solano, Alameda, and Contra Costa counties. Generally inhibits weedy shallow, open water associated with freshwater seeps, springs, farm ponds, vernal pools, and slow moving stream habitats.	inhabits.
Lichmanthe ursine (Bumblebee scarab beetle)	-		G2/S2	1	-	Occurs in coastal sand dunes from Sonoma County south to San Mateo County.	Not Expected. Site does not support habitat this species typically inhabits.
<i>Plebejus icorioides missionensis</i> (Mission blue butterfly)	Ш	1	G5T1/S1	1	1	Majority of remaining colonies are found on San Bruno Mountain, San Mateo County. Colonies are located at sites ranging from 690 to 1,180- feet elevation. Coastal chaparral and coastal grasslands dominate the vegetation type where colonies area found. Adults do not wander far from lupine ( <i>Lupinus albifrons</i> , <i>L.</i> <i>formosus</i> , and <i>L. variicolor</i> ), the larval food plant. Adults feed on golden aster ( <i>Chrysopsis villosa</i> ), bluedicks ( <i>Brodiaea pulchella</i> ), Ithuriel's spear ( <i>Brodiaea laxa</i> ), and coast buckwheat ( <i>Eriogonum</i> <i>latifolium</i> ).	<b>Medium.</b> Although no adults were observed in flight during surveys conducted in Spring 2005, the site support larval host plants ( <i>Lupinus</i> <i>formosus</i> ) and adult food plants ( <i>Dichelostemma pulchellum</i> ). Lycaenidae butterflies eggs were found on the lupine shrubs during the survey. Although the results are inconclusive as to which subspecies, if either, is present on site, it is unlikely that Mission blues would be present, based on their known distribution, the habit quality, phenology of the <i>L. formosus</i> plants found on site, and the existence of significant barriers between the closest recorded observation of Mission blue butterflies and the project site.
<i>Speyeria callippe callippe</i> (Callippe silverspot butterfly)	ш	-	G5T1/S1	1	:	Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant is <i>Viola</i> <i>peduculata</i> (Feb-April). Most adults	Not Expected. Site does not support habitat this species typically inhabits. Additionally, the site does not support this species larval food

Scientific Name/		Sti	Status <sup>1</sup>			Hahitat	Potential for Occurrence <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Taunat	
						found on e-facing slopes; males congregate on hilltops in search of females.	plant.
Speyeria zerene myrtleae (Myrtle's silverspot)	Ш	1	G5T1/S1	1	I	Coastal dune or prairie habitat. Populations were formerly found in dunes and bluffs from San Mateo County north to the mouth of the Russian River in Sonoma County. Populations south of the Golden Gate apparently have been extirpated by urban development. Four populations are known to inhabit coastal terrace prairie, coastal bluff scrub, and associated non-native habitats in western Marin County. Adults typically found in areas that are sheltered from the wind, below 820 feet elevation, and within 3 miles of the coast.	Not Expected. Site does not support habitat this species typically inhabits. Additionally, the site does not support this species larval food plant (hookedspur violet [ <i>Viola</i> <i>adunca</i> ]).
				<b>Reptiles and Amphibians</b>	Amphibians		
Actinemys marmorata (Western pond turtle)	1	ł	G3G4/S3	CSC	1	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg- laying.	Not Expected. Site does not support habitat this species typically inhabits.
Ambystoma californiense (California tiger salamander)	Т	ł	G2G3/S2S 3	CSC	I	Need underground refuges, especially ground squirrel burrows & vernal pools or other freshwater - seasonal water sources for breeding.	Not Expected. Site does not support habitat this species typically inhabits.
Rana aurora draytonii (California red-legged frog)	Т	1	G4T2T2/S 2S3	CSC	ł	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent	Not Expected. Site does not have suitable aquatic habitat to support breeding or larval development for

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Scientific Name/		Sta	Status <sup>1</sup>			Hobitot	Dotontial for Commontod
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	пална	
						riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	this species. The nearest known population is approximately one mile west at Crystal Springs Reservoir. However, use of terrestrial habitat on the site is not expected because of the surrounding development.
Thannophis sirtalis tetrataenia (San Francisco garter snake)	Ш	Ш	G5T2/S2	!	I	Prefers densely vegetated ponds near open hillsides where snakes can sun themselves, feed, and find cover in rodent burrows. Temporary ponds and other seasonal freshwater bodies are also used. Snakes avoid brackish marsh areas because their preferred prey (California red-legged frogs) cannot survive in saline water. Emergent and bankside vegetation such as cattails ( <i>Typha</i> spp.), bulrushes ( <i>Scirpus</i> spp.), and spike rushes ( <i>Juncus</i> spp. and <i>Eleocharis</i> spp.) apparently are preferred and used for cover. The area between stream and pond habitats and grasslands or bank sides is used for basking, while nearby dense vegetation or water often provide escape cover.	<b>Not Expected.</b> Site does not support habitat this species typically inhabits. Additionally, use of terrestrial habitat on the site is not expected because of the surrounding development; the nearest known population is located two miles west at Lower Crystal Springs Reservoir.
				Birds	ds		
Accipiter cooperii (Coopers hawk) (nesting)	:	ł	G5/S3	:	1	Nests primarily mature forest, either broadleaf or coniferous, mostly the former; also open woodland and forest edge. Nests in both pine and hardwood groves, and riparian cottonwoods and sycamores. Migrates mostly along ridges and coastlines. Winter habitat is much	Medium. This species is a breeding resident throughout most of California, and occurrence of this species in San Mateo County is fairly common. Additionally, the mature oaks and pines on the site provide suitable nesting habitat. This species may also occasionally

Scientific Name/		Sta	Status <sup>1</sup>				
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Habitat	Fotential for Occurrence
						the same as in the nesting season, although open woodlands and fields may be utilized to a greater extent.	forage on the site.
Asio flammeus (short-eared owl) (nesting)	I	I	G5/S3	CSC	ł	Require broad expanses of open land with low vegetation for nesting and foraging. Suitable habitats include such types as fresh- and salt-water marshes, bogs, dunes, prairies, grassy plains, old fields, tundra, moorlands, river valleys, meadows, savannah, and open woodland. Roost by day on ground, on low open perch, under low shrub, or in conifer.	<b>Low.</b> Occurrence of this species in San Mateo County is rare in the fall and winter, and is rare and restricted to a small portion of the county or to a few locations in the spring and summer. Site provides marginal nesting and foraging habitat.
Athene cunicularia (burrowing owl) (burrow sites)	I	I	G4/S2	CSC	l	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Low. This species is a yearlong resident of California, and occurrence of this species in San Mateo County is rare in the fall and winter and rare and restricted to a small portion of the county or to a few locations in the spring and summer. The site does not support suitable nesting habitat for this species; no burrows or burrow donors (i.e., fossorial mammals) were observed on the site. However, the site does support suitable foraging habitat.
Charadrius alexandrinus nivosus (western snowy plover) (nesting)	H	ł	G4T3/S2	csc	1	Pacific coast population breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. Breeds primarily above the high tide line on coastal beaches, sand spits, dune- backed beaches, sparsely-vegetated dunes, beaches at creek and river	Not Expected. Site does not support habitat this species typically inhabits.

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Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	nabilat	FOURTHAILTOF OCCULTERICE
						mouths, and salt pans at lagoons and estuaries. In winter, found on many of the beaches used for nesting as well as on beaches where they do not nest, in man-made salt ponds, and on estuarine sand and mud flats.	
Circus cyaneus (northern harrier) (nesting)	1	I	G5/S3	CSC	1	Marshes, meadows, grasslands, and cultivated fields. Perches on ground or on stumps or posts. Nests on the ground, commonly near low shrubs, in tall weeds or reeds, sometimes in bog; or on top of low bush above water, or on knoll of dry ground, or on higher shrubby ground near water, or on dry marsh vegetation.	Low. Occurrence of this species in San Mateo County is uncommon in the fall, winter, and spring, and uncommon and restricted to a small portion of the county or to a few locations in the summer. Although the site does not support suitable nesting habitat, the site does support marginal foraging habitat.
<i>Elanus leucurus</i> (white-tailed kite) (nesting)	1	ł	G5/S3	FP	1	Savannah, open woodland, marshes, partially cleared lands and cultivated fields, mostly in lowland situations. Nests in trees, often near a marsh, usually 6-15 meters above the ground in branches near the top of a tree.	Medium. This species is a common to uncommon yearlong resident of California, and occurrence of this species in San Mateo County is uncommon. The mature trees on the site provide suitable nesting habitat. Additionally, this species may occasionally forage in grassland habitat on the site.
Falco peregrines anatum (American peregrine falcon) (nesting)	Q	ш	G4T3/S2	FP	I	Various open habitats from tundra, moorlands, steppe, and seacoast, especially where there are suitable nesting cliffs, to mountains, open forested regions, and human population centers. When not breeding, occurs in areas where prey (primarily birds from medium-sized passerines up to small waterfowl) concentrate, including farmlands, marshes, lakeshores, rivers mouths, tidal flats, dunes and beaches, broad	Low. This species is an uncommon migrant along the coast of California, and occurrence of this species in San Mateo County is rare. The site does not support suitable nesting habitat and supports marginal foraging habitat for this species.

Scientific Name/		Sta	Status <sup>1</sup>			Hahitat	Potential for Occurrence <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Taunat	
						river valleys, cities, and airports. Often nests on ledge or hole on face of rock cliff or crag. River banks,	
						tundra mounds, open bogs, large stick nests of other species, tree	
						hollows, and man-made structures are used locally.	
						Requires dense growth of vegetation associated with moist environments.	Not Expected. Occurrence of this species is fairly common in San
Constitution to the constant						Inhibits freshwater marshes, coastal	Mateo County. However, the site
<i>Geomypus trictus sunuosa</i> (saltmarsh common vellowthroat)	1	ł	G5T2/S2	CSC	ł	swares, swampy пранан инскеts, brackish marshes. salt marshes. and	to be a support nabilats uns species tronically inhabits.
						edges of disturbed weed fields and	
						grasslands that border soggy habitats.	
						Marshlands with unrestricted tidal	Not Expected. Site does not
						influence (estuarine, intertidal,	support habitat this species typically
Laterallus jamaicensis						emergent, regularly flooded).	inhabits. Additionally, occurrence
coturniculus	1	Τ	G4T1/S1	FP	ł	Favors areas dominated by	of this species in San Mateo County
(California black rail)						pickleweed, bulrushes, and matted	is extremely rare.
						salt grass and other marsh	
						Vegetättott. Dogidant of oolt monoboo hondoning	Not Fernoted City door not
						restuetti u sait illaisiles uutuetilig south arm of San Francisco Ray	NUL Expected. Site uses not summart habitat this species trainally
						Limited to areas affected by tides	inhabits.
						where flow is unimpeded by levees,	
						although levees hosting upland	
						plants (e.g., coyote brush	
Melospiza melodia pusillula	1	1	G5T2?/S2?	CSC	ł	Baccharis pilularis], California	
(Alameda song sparrow)						wild rose [ <i>rosa caufornica</i> ], and willows [ Saliy sun Dara usad	
						occasionally. Densest vegetation	
						tolerated may be continuous mats of	
						vegetation in pickleweed	
						(Salicornia spp.) marshes and	
						seaside chaparral, where birds travel	

Scientific Name/		Sta	Status <sup>1</sup>			Habitot	Dotantial for Occurrence <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	TRADUCAL	
						in channels created by water flow and runways of small mammals.	
<i>Nycticorax nycticorax</i> (black-crowned night heron) (rookery site)	1	ł	G5/S3	-	I	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud- bordered bays, marshy spots.	Not Expected. Site does not support habitat this species typically inhabits.
Phalacrocorax auritus (double-crested comorant) (rookery site)	1	ł	G5/S3	CSC	ł	Lakes, ponds, rivers, lagoons, swamps, coastal bays, marine islands, and seacoasts; usually within sight of land. Nests on the ground or in trees in freshwater situations, and on coastal cliffs 8usually high sloping areas with good visibility.	Not Expected. Site does not support habitat this species typically inhabits.
Rallus longirostris obsoletus (California clapper rail)	ш	ш	G5T1/S1	FP	1	Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. In the south and central San Francisco Bay and along the perimeter of San Pablo Bay, rails typically inhabit salt marshes dominated by pickleweed ( <i>Salicornia virginica</i> ) and Pacific cordgrass ( <i>Spartina</i> <i>foliosa</i> ). In the north Bay (Petaluma Marsh, Napa-Sonoma marshes, Suisun Marsh) rails also live in tidal brackish marshes, which vary significantly in vegetation structure and composition.	Not Expected. Site does not site does not support habitat this species typically inhabits. Additionally, occurrence of clapper rail in San Mateo County is uncommon and restricted to a small portion of the county or to a few locations.
Riparia riparia (bank swallow) (nesting)	1	Т	G5/ S2S3	1	1	Open and partly open habitats, frequently near flowing water. Nests in steep sand, dirt, or gravel banks, in a burrow dug near the top of the bank, along the edge of inland water or along the coast, or in gravel pits,	Not Expected. This species is a neotropical migrant and occurrence of this species in San Mateo County is rare in the fall, extremely rare in the winter, and fairly common and restricted to a small portion of the

Scientific Name/		St	Status <sup>1</sup>				
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Habitat	Potential for Occurrence <sup>*</sup>
						road embankments, etc.	county or to a few locations in the summer. The site does not support habitat this species typically inhabits.
<i>Sternula antillarum browni</i> (California least tern) (nesting colony)	Э	Е	G4T2T3Q/ S2S3	FP	1	Inhabits bays and lagoons, nesting on the adjacent open sandy beaches, dunes, or disturbed sites. Nesting is limited to colonies in the San Francisco Bay, Sacramento River delta, and areas along the coast from San Luis Obispo County to San Diego County.	Not Expected. This species is migratory in California, and occurrence of this species in San Mateo County is rare. Additionally, the site does not support habitat this species typically inhabits.
				Fish	h		
Eucyclogobius newberryi (Tidewater goby)	Ш	1	G3/S2S3	CSC	1	Brackish shallow lagoons and lower stream reaches where the water is fairly still, but not stagnant. Prefer a sand substrate component for breeding, but also found on rocky, mud, and silt substrates as well. Found in waters with salinity levels from 0 to 42 ppt, temperature levels from 8 to 25 degrees Celsius, and water depths from 25 to 200 centimeters.	Not Expected. Site does not support habitat this species typically inhabits.
Oncorhynchus mykiss irideus (Central California coast steelhead)	F	ш	G5T2Q/S2	CSC	l	Naturally spawned populations below natural and manmade impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers; tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek,	Not Expected. Site does not support habitat this species typically inhabits.

Name/ Status <sup>1</sup> Dotontial for Occurrence <sup>4</sup>	ESA CESA CNDDB <sup>2</sup> CDFG WBWG <sup>3</sup>	and an unmaned tributary to Cordelia Slough (commonly referred to as Red Top Creek), excluding the Sacramento-San Joaquin River Basin, as well as two artificial propagation programs: the Don Clausen Fish Hatchery, and Kingfisher Flat Hatchery, Scott Creek (Monterey Bay Salmon and Trout Project) Steelhead Program. Spawn in cool, clear streams featuring suitable gravel size, depth, and current velocity. Streamside vegetation and cover area essential for steelhead fry survival.	Mammals	G5/S3 CSC High building, less often in cave, tree over the site. G5/S3 CSC High building, less often in cave, tree over the site.	<i>us venustus</i>	G4G5/S4 Briority hardwood-conifer. Uses caves, site.
Scientific Name/	Common Name			Antrozous pallidus (pallid bat)	Dipodomys venustus venustus (Santa Cruz kangaroo rat)	<i>Myotis thysanodes</i> (fringed myotis)

Scientific Name/		Sta	Status <sup>1</sup>			Hahitot	Dotantial for Acourrance <sup>4</sup>
Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Habitat	
<i>Neotoma fuscipes amectens</i> (San Francisco dusky-footed woodrat)	1	1	G5T2T3/S 2S3	CSC	I	Forest habitats of moderate canopy & moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest- building materials.	<b>Low.</b> Limited suitable habitat present and no woodrat nests were observed during the site visits.
Nyctinomops macrotis (big free-tailed bat)	1	1	G5/S2	CSC	Medium Priority	Low-lying arid areas in southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	<b>Not Expected.</b> Site does not support habitat this species typically inhabits.
Reithrodontomys raviventris (Salt-marsh harvest mouse)	ш	ш	G1G2/ S1S2	Ъ	ł	Found only around the San Francisco, San Pablo, and Suisun Bays. Critically dependent on dense cover and preferred habitat is pickleweed. Seldom found in cordgrass or alkali brush ( <i>Scirpus</i> <i>robustus</i> ). In marshes with an upper zone of peripheral halophytes (salt- tolerant plants), mice use this vegetation to escape the higher tides, and may even spend a considerable portion of their lives there. Mice also move into the adjoining grasslands during the highest winter tides.	Not Expected. Site does not support habitat this species typically inhabits.
Sorex vagrans halicoetes (Salt-marsh wandering shrew)	1	I	G5T1/S1	CSC	1	Inhabits tidal salt marsh plains above cordgrass zone, moist, lower pickleweed-dominated marsh, with abundant invertebrates, tidal debris, and flood escape habitat in the San Francisco Bay.	Not Expected. Site does not support habitat this species typically inhabits.

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Common Name	ESA	CESA	CNDDB <sup>2</sup>	CDFG	WBWG <sup>3</sup>	Habitat	roundal lor Occurrence
<i>Taxidea taxus</i> (American badger)	1	1	G5/S4	CSC	1	Prefers open areas and may also frequent brushlands with little groundcover. Although badger may prefer habitats with more friable soils for digging burrows, which are used for dens, escape, and predation, the hard-baked earth in the middle of an unpaved road is no obstacle. When inactive, occupies underground burrows that are elliptical shaped and eight or more inches in diameter.	<b>Low.</b> Although site contains marginally suitable shrub and forest habitat, site is completely surrounded by development. Additionally, no burrows were observed during site visits.
<ul> <li><sup>1</sup>Status Codes:</li> <li>ESA: ESA Endangered Species Act of 1972, as amended</li> <li>E Federally listed as Endangered</li> <li>T Federally listed as Endangered</li> <li>T Federally proposed for delisting</li> <li>D Federally proposed for delisting</li> <li>C Estat Endangered</li> <li>C State listed as Endangered</li> <li>State listed as Threatened</li> <li>R State listed as Threatened</li> <li>C State listed as Threatened</li> <li>C No designation</li> <li>C State listed as Threatened</li> <li>C No designation</li> <li>C State listed as Threatened</li> <li>C No designation</li> <li>C State listed as Threatened</li> <li>C NDB: California Natural Diversity Database</li> <li>G,T,S,-rank CNDB element ranking. The global rank (G-rank) is a reflection of the overall condition of a Supecies receive a T-rank attached doe</li> <li>C State listed as Threatened</li> <li>C State listed as Threatened</li> <li>C State Species of Special Concern</li> <li>F Fully Protected</li> <li>C Conservation designation</li> <li>C Conservation designation</li> <li>C conservation designations from Western Bat Working Group (WBWG) are intended to provide states, provin being the most rare and S5 the least rare.</li> <li>C Conservation designations from Western Bat Working Group (WBWG) are intended to provide states, provin being the overall status of a given bat species throughout its western North American range conservation designations from the ender state of a given bat species throughout its western north conservation better understanding of the overall status of a given bat species throughout its conservation for the species that meet all of the following criteria: (1) have both CND</li></ul>	1972, as amenu Rer Category . Act Act Database The global . o the G-rank. e. and Game tern Bat Work atus of a giver hat meet all c cable) bats tha	led l candidates) ank (G-rank) i: The state rank ( i bat species thr the following t are recognized	s a reflection of S-rank) is a refl WG) are intend oughout its wesi criteria: (1) hav	f the overall cc lection of the ov ed to provide si tern North Ame ve both CNDD	mdition of an rerall condition rican range. S B Global (G-rc the WBWG.	<ul> <li>Man Code:</li> <li>A. Sch Bulturered Species Act of 1972 as anoted</li> <li>Federally itsel as Endangered</li> <li>Same listed as Reasons</li> <li>California Endangered</li> <li>Same listed as Budagered</li> <li>Same listed as Budagered<td><ul> <li>Stants Code:</li> <li>Stants Code:</li> <li>K.S. Kalameered Species Act of 197, as anomled</li> <li>F. Federally listed as Threatened</li> <li>P. Federally stade as the conditions provide the formation of the condition of an element throughout its global range, with G1 being the most rare and G3 the leave No designation.</li> <li>No designation.</li> <li>State listed as Rate.</li> <li>State listed as Threatened</li> <li>State listed as Threatened to the C-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached herein the not rare and St the last rare.</li> <li>State listed as threatened</li> <li>State listed as threatened</li> <li>State listed concerned</li> <li>State listed as threatened to the C-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached herein throughout California sometimes with a threat designation attached herein throughout is global range, threatened</li> <li>State lister day condition of an element throughou</li></ul></td></li></ul>	<ul> <li>Stants Code:</li> <li>Stants Code:</li> <li>K.S. Kalameered Species Act of 197, as anomled</li> <li>F. Federally listed as Threatened</li> <li>P. Federally stade as the conditions provide the formation of the condition of an element throughout its global range, with G1 being the most rare and G3 the leave No designation.</li> <li>No designation.</li> <li>State listed as Rate.</li> <li>State listed as Threatened</li> <li>State listed as Threatened to the C-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached herein the not rare and St the last rare.</li> <li>State listed as threatened</li> <li>State listed as threatened</li> <li>State listed concerned</li> <li>State listed as threatened to the C-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached herein throughout California sometimes with a threat designation attached herein throughout is global range, threatened</li> <li>State lister day condition of an element throughou</li></ul>
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<sup>4</sup> The potential for occurrence is based on: (1) occurrences recorded in the Francisco South, and Montara Mountain USGS 7.5 minute quadrangles, (2) 1	d on: (1) oco ain USGS 7.5	currences record 5 minute quadran	ded in the CNDL 1gles, (2) knowle	B within San dge of species	Mateo, Palo . requirements,	The potential for occurrence is based on: (1) occurrences recorded in the CNDDB within San Mateo, Palo Alto, Woodside, Half Moon Bay, San Leandro, Redwood Point, Hunters Point, San Francisco South, and Montara Mountain USGS 7.5 minute quadrangles, (2) knowledge of species requirements, and (3) May 2003 and June 2008 field reconnaissance.	ndro, Redwood Point, Hunters Point, San nmaissance.
<u>Sources:</u> California Departnent of Fish and Ga California.	ıme. Califor	nia Interagency	Wildlife Task G	roup. 2005.	California Wi	<u>Sources:</u> California Department of Fish and Game. California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.	versonal computer program. Sacramento,
California Natural Diversity Database. July 2008. Biogeographic Data Branch, Department of Fish and Game. California Native Plant Society, Inventory of rare and endangered plants of California, California Native Plant Soc hin/mvinventory cai on November 6, 2006.	e. July 2008. ry of rare and	Biogeographic . I endangered pla	Data Branch, De <sub>1</sub> wts of California,	partment of Fi. California Na	sh and Game. tive Plant Soc.	California Natural Diversity Database. July 2008. Biogeographic Data Branch, Department of Fish and Game. California Native Plant Society. Inventory of rare and endangered plants of California, California Native Plant Society, Sacramento, July 2008. Accessed by CAJA Staff at http://cnps.web.aplus.net/cgi- bin/inv/inventory cai on November 6, 2006.	CAJA Staff at http://cnps.web.aplus.net/cgi-
Metropulos, P. J. 2005, A Decklist of the Birds of San Mateo County, California. Sequoia Audubon Society. April 2006. U.S. Fish and Wildlife Service, Listed, Proposed, and Candidate Species which May Occur in San Mateo County, Sacram Staff at http://www.fws.gov/ventura/esprograms/listing%5Fch/.	he Birds of Sa roposed, and programs/list	m Mateo County Candidate Spec ing%5Fch/.	, California. Seq ies which May O	uoia Audubon ccur in San Mı	Society. April ateo County, S	Metropulos, P. 2006, M. Checklist of the Birds of San Mateo County, California. Sequoia Audubon Society. April 2006. U.S. Fish and Wildlife Service, Listed, Proposed, and Candidate Species which May Occur in San Mateo County, Sacramento (CA): Sacramento Fish and Wildlife Office, July 2008. Accessed by CAJA Staff at http://www.fws.gov/ventura/esprograms/listing%5Fch/.	ldlife Office, July 2008. Accessed by CAJA

## Special-Status Wildlife Species

Of the 38 special-status wildlife species listed in Table IV.C-3 known to occur in the vicinity of the project site, only five species occur in habitats similar to those found on the project site, and therefore have a medium potential for occurrence. These species include the Mission blue butterfly (*Icaricia icaroides missionensis*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), pallid bat (*Antrozus pallidus*), and fringed myotis (*Myotis thysanodes*). Although some species may occasionally disperse through or forage on-site, the fragmented areas of natural habitats are altered by regular disturbance from surrounding developments. On-site habitats provide limited opportunities for burrow or den occupation by sensitive mammal species or nesting by several special-status bird species. The remaining 33 species have "low potential" or are "not expected" to occur on the site due to varying reasons, including: a lack of suitable habitat on-site, the high disturbance and human activity level on the site, and/or the lack of known or recent documented occurrences in the area.

The five species that have a medium potential for occurrence and therefore may be impacted by the proposed development are discussed below:

## Invertebrates

**Mission Blue Butterfly**. Federally Endangered, CNDDB Ranking G5T1/S1. The Mission blue butterfly (MBB) is listed as federally endangered by the USFWS. The MBB is a small, delicate butterfly in the Lycaenidae (gossamer-winged butterfly) family. Three species of lupine are known to serve as host plants for the Mission blue butterfly larvae: silver leaf lupine (*Lupinus albifrons*), varied lupine (*Lupinus variicolor*), and summer lupine (*Lupinus formosus*). These host plants tend to occur on grasslands on thin, rocky soils within broader coastal scrub habitats.<sup>8</sup> MBB rely on these lupines for egg deposition, larval growth, and diapause.

Adults feed on nectar from numerous plants, though they may prefer wild buckwheat (*Eriogonum latifolium*), golden aster (*Chrysopsis vilosa*), blue dicks (*Brodiaea pulchella*), and Ithuriel's spear (*Brodiaea laxa*).<sup>9</sup> Adults have one generation per year, with a flight period from mid-February to early-July at the Marin Headlands and late May to mid-June at San Bruno Mountain. A small population (15 to 20 plants) of one of the larval host plants for MBB, summer lupine, was found in one location on the steep west facing slope above Ascension Drive. In addition, one of the food plants (*Dichelostemma pulchellum*) for the adult MBB was found throughout the project site. The nearest known population of

<sup>&</sup>lt;sup>8</sup> Rashbrook, V.K. 2002. Survey of the Endangered Mission Blue Butterfly on the Marin Headlands, Spring 2002. Unpublished report prepared for Golden Gate National Recreation Area.

<sup>&</sup>lt;sup>9</sup> Lambert, A. 2001. 2001 Mission Blue Butterfly Survey Milagra Ridge, Golden Gate National Recreation Area. Unpublished report prepared for Golden Gate National Recreation Area.

this butterfly to this project site is on San Bruno Mountain located approximately five miles to the northwest.  $^{10}$ 

Five focused surveys for Mission blue butterflies were conducted by TRA between March 24 and June 24, 2005 at a time of the year the adult MBB would be in flight. None were observed during the site survey (refer to Appendix E of the DEIR). According to the Mission blue butterfly survey report, no adult butterflies were observed on the project site. However, two butterfly eggs were observed on a lupine plant and based on their size and appearance could be from a variety of Lycaenidae butterflies, including the MBB and Pardalis blue butterfly (Plebejus (Icaricia) icaroides pardalis) in the Crystal Springs Reservoir area. The Pardalis blue butterfly is a relatively common butterfly that does not have protected status and is found in areas surrounding the known range of the MBB. It was not possible to determine subspecies from the eggs. Although the results are inconclusive as to which subspecies, if either, are present on site, TRA concluded it is unlikely that MBBs would be present on site. This conclusion is based on the known distribution of MBB and Pardalis blue butterfly, the habit and phenology of the summer lupine plants found on site, and the existence of significant barriers between the closest recorded observation of MBBs and the project site. However, according to the USFWS, if a project site supports larval host plants and is within the range of the MBB, the presence of this species is assumed.<sup>11</sup> Based on recent consultation with USFWS, and a review of other projects in the region with potential to impact MBB, removal of any viable habitat for the endangered butterfly within its known distribution would be considered a "take" by USFWS.

## <u>Birds</u>

White-Tailed Kite. CDFG Fully Protected Species, CNDDB Ranking G5/S3. It is found within savannas, open woodlands, marshes, partially cleared lands, and agricultural fields in coastal and valley lowlands. White-tailed kites breed from February into October, with peak activity from May to August.<sup>12</sup> Nests of loosely piled sticks and twigs are built near the top of dense oak, willow, or other tree stands. Clutch sizes range from 3 to 6 eggs, and incubation last about 28 days.<sup>13</sup> White-tailed kites will occasionally raise two broods per year. The annual grassland and oak woodland communities on the project site support suitable foraging and nesting habitat for this species. According to CNDDB records, the nearest occurrences are seven miles to the east of the project site.

<sup>&</sup>lt;sup>10</sup> California Department of Fish and Game. 2008. California Natural Diversity Database (CNDDB) Rarefind [CD-ROM], Wildlife Habitat Data Analysis Branch, California Department of Fish and Game. Sacramento: California.

<sup>&</sup>lt;sup>11</sup> Telephone conversation with Chris Nagano, USFWS, October 4, 2004.

<sup>&</sup>lt;sup>12</sup> California Department of Fish and Game (CDFG). California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

<sup>&</sup>lt;sup>13</sup> California Department of Fish and Game (CDFG). California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

<u>Cooper's Hawk. CDFG Species of Special Concern, CNDDB Ranking G5/S3</u>. This species nests in woodland habitats, especially in deciduous trees (or also live oaks) in riparian habitats in canyon bottoms on floodplains, which are generally open, interrupted or marginal. A breeding resident throughout most of the wooded portion of the State, this species occurs from sea level to above 2,700 meters (0-9,000 feet). The Cooper's hawk has undergone a dramatic rise in abundance in the western U.S., particularly in suburban and even urban areas.<sup>14</sup> The nearest recorded CNDDB nesting occurrence of this species to the project site is approximately 20 miles to the east along the Hayward shoreline. Cooper's hawk have a medium potential to nest in the oaks or other large trees on-site, as they generally breed in more natural, mature riparian areas. This species is more likely to be found foraging for prey on-site, not nesting.

#### <u>Mammals</u>

**Pallid Bat**. CDFG Species of Special Concern, Western Bat Working Group (WBWG) High Priority, <u>CNDDB Ranking G5/S3</u>. The pallid bat is designated a species of special concern by the CDFG and assigned a conservation status or rarity ranking of G5S3 by NatureServe and the CDFG. It occurs throughout California, except in the high Sierra Nevada from Shasta to Kern counties and the northwestern corner of the State from Del Norte and western Siskiyou counties to northern Mendocino County.<sup>15</sup> The pallid bat inhabits a variety of habitats, such as grasslands, shrublands, woodlands, and forests; however, it is most abundant in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups, or gregariously.<sup>16</sup> Roosts include caves, crevices in rocky outcrops and cliffs, mines, trees, and various man-made structures (e.g., bridges, barns, porches), and generally have unobstructed entrances/exists and are high above the ground, warm, and inaccessible to terrestrial predators. Year-to-year and night-to-night roost reuse is common; however, bats may switch day roosts on a daily and seasonal basis.<sup>17</sup> Mating occurs from late October to February, and maternity colonies of up to 100 individuals form in early April.<sup>18</sup> One or 2 pups are usually born May or June, and are weaned in approximately 6 to 7 weeks. Maternity colonies disperse between August and October.<sup>19</sup> Mature trees

<sup>17</sup> Sherwin, R., Western Bat Working Group, Species Accounts: "Antrozous pallidus", Pallid Bat, 1998. Accessed by CAJA Staff at http://wbwg.org/species\_accounts/species\_accounts.html on February 1, 2008.

- <sup>18</sup> California Department of Fish and Game (CDFG). California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.
- <sup>19</sup> California Department of Fish and Game (CDFG). California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

<sup>&</sup>lt;sup>14</sup> Cooper Ecological and Cartifact. 2008. Griffith Park Wildlife Management Plan. http://www.griffithparkwildlife.org.

<sup>&</sup>lt;sup>15</sup> California Department of Fish and Game (CDFG). California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

<sup>&</sup>lt;sup>16</sup> Sherwin, R., Western Bat Working Group, Species Accounts: "Antrozous pallidus", Pallid Bat, 1998. Accessed by CAJA Staff at http://wbwg.org/species\_accounts/species\_accounts.html on February 1, 2008.

on the project site may provide suitable roost habitat. The nearest recorded CNDDB nesting occurrence of this species to the project site is approximately 2 miles to the southeast of the project site.

**Fringed Myotis**. Western Bat Working Group (WBWG) High Priority, CNDDB Ranking G4G4/S4. This bat species has been found in hot desert scrubland, grassland, xeric woodland, sage-grass steppe, mesic old-growth forest, and multi-aged subalpine coniferous and mixed-deciduous forest. Xeric woodlands (oak and pinyon-juniper) appear to be the most commonly used. Where available, caves, buildings, underground mines, rock crevices in cliff faces and bridges are used for maternity and night roosts, while hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California. Suitable roosting and foraging habitat is available on-site. Mature trees on the project site may provide suitable roost habitat. The nearest recorded CNDDB nesting occurrence of this species to the project site is approximately 2 miles to the southeast of the project site.

# Sensitive Natural Communities

Sensitive natural communities are natural community types that are generally rare or especially valuable because of their special nature or role in an ecosystem and which tend to be vulnerable to disturbance and degradation due to human activities and development. However, these communities may or may not necessarily contain special-status species. These sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by the CDFG (i.e., CNDDB or the USFWS).

Based on a search of the CNDDB occurrences the following sensitive natural communities are recorded in the vicinity of the project site: Southern Coastal Salt Marsh, Valley Oak Woodland, and Serpentine Bunchgrass. Southern Coastal Salt Marsh occurs along the borders of the San Francisco Bay and thus is not associated with the project site. Valley Oak Woodlands occur in the deep alluvial soils of inland valleys. The project site is situated on a steeply sloped hill top and supports only coast live oaks, and therefore does not support this plant community. The sensitive Serpentine Bunchgrass community consists of open grassland dominated by perennial bunchgrasses and other native species, has sparse to moderate vegetation cover with open, rocky patches, and occupies serpentine soils. The project site does not contain serpentine soils and supports predominantly non-native, annual grassland with only a minor native component; it does not support any other plant species typically associated with the Serpentine Bunchgrass community and therefore this sensitive habitat does not occur on the project site. Furthermore, the project site does not support any drainages containing riparian vegetation that may be regulated by CDFG.

In addition to the sensitive natural communities listed by the CNDDB, regulatory and resource agencies consider oak woodlands to qualify as a sensitive community. As previously discussed, Coast Live Oak Woodlands occupy a total of approximately 3.3 acres of the site. Although this community is not

considered to be of high priority for inventorying in the CNDDB,<sup>20</sup> it protected under Public Resources Code (PRC) §21083.4. In compliance with this code, impacts to oak woodlands within a County's jurisdiction must be evaluated and, therefore, are considered to be a sensitive natural community.

## Jurisdictional Wetlands and Other Waters

No Waters of the U.S. or Waters of the State were observed on the project site, including wetlands, streams, ponds, or lakes. Furthermore, such jurisdictional features are not expected to have occurred on the site historically. The project site is situated on a steeply sloped hill top along a ridge that separates the closest jurisdictional water course, Polhemus Creek, from creeks and drainages that drain towards the San Francisco Bay. The project site supports entirely upland (non-wetland) vegetation consisting of coast live oaks, coniferous trees, annual grassland, and scattered coyote brush, with well drained and non-wetland soils; the site lacks drainage-like or depressional topography.

The site is too steep to support any intermittent or perennial water courses nor areas that could hold water for a sufficient length of time to support wetland plants or develop hydric soil conditions. At the time the field survey was conducted in May 2003, the only surface water found was located in tire ruts along a dirt road downslope from an erosional feature that contained denuded soils and upland grassland plant species, located at the east end of the project site. No surface water, evidence of recent ponding, or areas dominated by wetland vegetation were observed on the site during the field reconnaissance conducted on June 27, 2008.

## **REGULATORY SETTING**

## Federal

## Federal Endangered Species Act (ESA)

The ESA of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the ESA. The ESA has four major components: provisions for listing species, requirements for consultation with the USFWS and the NOAA Fisheries, prohibitions against "taking" of listed species, and provisions for permits that allow incidental "take." The ESA also discusses recovery plans and the designation of critical habitat for listed species. Both the USFWS and the NOAA Fisheries share the responsibility for administration of the ESA. During the CEQA review process, each agency is given the opportunity to comment on the potential of the proposed project to affect listed plants and animals.

<sup>&</sup>lt;sup>20</sup> California Department of Fish and Game (CDFG). 2003. The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. September 2003 Edition.

## Clean Water Act (CWA), Section 404 & 401

The Corps and the United States Environmental Protection Agency (U.S. EPA) regulate the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the CWA (33 U.S.C. 1344). Waters of the U.S. are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Parts 328.4(a),(b),(c)). Activities in waters of the U.S. regulated under Section 404 include fill for development, water resource projects (such as dams and levees), infrastructure developments (such as highways and airports) and mining projects. Section 404 of the CWA requires a federal license or permit before dredged or fill material may be discharged into waters of the U.S., unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U. S. to obtain a certification from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters. At the point where the discharge originates or would originate, the discharge would have to comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine RWQCBs.

## Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NOAA Fisheries and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur. In this case the agency would be the CDFG. The consultation would have to address the conservation of birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent.

# Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act

The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior (DOI). As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context

otherwise requires." With a few exceptions, most birds are considered migratory under the MBTA. Disturbances that causes nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend would be in violation of the MBTA.

The Bald Eagle Protection Act (16 U.S.C. 668) was passed in 1940 to protect bald eagles (*Haliaeetus leucocephalus*) and was later amended to include golden eagles (*Aquila chrysaetos*). Under the act it is unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing eagles.

## State

## California Endangered Species Act (CESA)

California enacted similar laws to the ESA, the California Native Plant Protection Act (NPPA) in 1977 and the CESA in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code. To align with the ESA, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the CESA as threatened species, but did not do so for rare plants. Thus, these laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. The CDFG implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the CNDDB, a computerized inventory of information on the general location and status of California's rarest plants, animals, and natural communities. During the CEQA review process, the CDFG is given the opportunity to comment on the potential of the proposed project to affect listed plants and animals.

## Fully Protected Species & Species of Special Concern

The classification of "fully protected" was the CDFG's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or ESA. The California Fish and Game Code sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFG to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the ESA or CESA, but which are nonetheless of concern to the CDFG because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFG, land managers,

consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under ESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during proposed project review.

# California Fish and Game Code, Sections 3503 & 3513

According to Section 3503 of the California Fish and Game Code it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows (*Passer domesticus*) and European starlings (*Sturnus vulgaris*)). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MTBA, prohibiting the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG.

## California Native Plant Society (CNPS)

The CNPS publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version (<u>www.cnps.org/rareplants/inventory/6thedition.htm</u>). The Inventory assigns plants to the following categories:

- 1A Presumed extinct in California;
- 1B Rare, threatened, or endangered in California and elsewhere;
- 2 Rare, threatened, or endangered in California, but more common elsewhere;
- 3 Plants for which more information is needed; and
- 4 Plants of limited distribution.

Additional endangerment codes are assigned to each taxa as follows:

- 1 Seriously endangered in California (over 80 percent of occurrences threatened/high degree of immediacy of threat);
- 2 Fairly endangered in California (20-80 percent occurrences threatened); and
- 3 Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

Plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and are given special consideration under CEQA during proposed project review. Although plants on List 3 and

4 have little or no protection under CEQA, they are usually included in the proposed project review for completeness.

## California Fish and Game Code, Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFG under Sections 1600-1616 of the California Fish and Game Code. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake; generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.<sup>21</sup> Riparian is defined as, "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself."<sup>22</sup> Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFG.

#### Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by federal, state, and local conservation plans, policies or regulations. The CDFG ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its CNDDB. Sensitive vegetation communities are also identified by CDFG on its List of California Natural Communities Recognized by the CNDDB. Impacts to sensitive natural communities and habitats identified in local or regional plans, policies, regulations or by federal or state agencies must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

Although sensitive natural communities have no legal protective status under the ESA and CESA, they are provided some level of protection under CEQA. The CEQA Guidelines identify potential impacts on a sensitive natural community as one of six significance criteria. As an example, a discretionary project

<sup>&</sup>lt;sup>21</sup> California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

<sup>&</sup>lt;sup>22</sup> CDFG, ESD. 1994. Ibid.

that has a substantial adverse effect 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 a significant under CEQA, the potential impact would require mitigation through avoidance, minimization of disturbance or loss, or some type of compensatory mitigation when unavoidable.

## California Public Resources Code §21083.4

Under State Public Resources Code Section §21083.4, a County shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a significant effect is determined, the following mitigation alternatives are given:

- 1. Conserving oak woodlands through the use of conservation easements.
- 2. Plant an appropriate number of trees, including maintaining the plantings and replacing dead or diseased trees; required maintenance of trees terminates seven years after the trees are planted; this type of mitigation should not fulfill more than half of the mitigation requirement for the project; this type of mitigation may also be used to restore former oak woodlands.
- 3. Contribute funds to the Oak Woodlands Conservation Fund.
- 4. Other mitigation measures developed by the County.

## Local

## County of San Mateo General Plan

The following General Plan policies are applicable to the proposed project.

#### 1.20 Importance of Sensitive Habitats

• Consider areas designated as sensitive habitats as a priority resource requiring protection.

## 1.22 <u>Regulation of Development</u>

- Regulate development to protect vegetative, water, fish and wildlife resources.
- Regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish and wildlife resources.
- Place a priority on the managed use and protection of vegetative, water, fish and wildlife resources in rural areas of the County.

## 1.23 <u>Regulate Location, Density and Design of Development to Protect Vegetative, Water, Fish and</u> <u>Wildlife Resources</u>

• Regulate the location, density and design of development to minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.

## 1.24 <u>Protect Vegetative Resources</u>

• Ensure that development will: (1) minimize the removal of vegetative resources and/or; (2) protect vegetation which enhances microclimate, stabilizes slopes or reduces surface water runoff, erosion or sedimentation; and/or (3) protect historic and scenic trees.

#### 1.25 Protect Water Resources

• Ensure that development will: (1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and water quality for vegetative, fish and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.

#### 1.26 Protect Fish and Wildlife Resources

• Ensure that development will minimize the disruption of fish and wildlife and their habitats.

## 1.27 <u>Regulate Development to Protect Sensitive Habitats</u>

• Regulate land uses and development activities within and adjacent to sensitive habitats in order to protect critical vegetative, water, fish and wildlife resources; protect rare, endangered, and unique plants and animals from reduction in their range or degradation of their environment; and protect and maintain the biological productivity of important plant and animal habitats.

## 1.28 Establish Buffer Zones

• Establish necessary buffer zones adjacent to sensitive habitats which include areas that directly affect the natural conditions in the habitats.

## 1.29 Uses Permitted in Sensitive Habitats

• Within sensitive habitats, permit only those land uses and development activities that are compatible with the protection of sensitive habitats, such as fish and wildlife management activities, nature education and research, trails and scenic overlooks and, at a minimum level, necessary public service and private infrastructure.

## 1.30 <u>Uses Permitted in Buffer Zones</u>

Within buffer zones adjacent to sensitive habitats, permit the following land uses and development activities: (1) land uses and activities which are compatible with the protection of sensitive habitats, such as fish and wildlife management activities, nature education and research, trails and scenic overlooks, and at a minimum level, necessary public and private infrastructure; (2) land uses which are compatible with the surrounding land uses and will mitigate their impact by enhancing or replacing sensitive habitats; and (3) if no feasible alternative exists, land uses which are compatible with the surrounding land uses.

#### 1.31 Regulate the Location, Siting and Design of Development in Sensitive Habitats

• Regulate the location, siting and design of development in sensitive habitats and buffer zones to minimize to the greatest extent possible adverse impacts, and enhance positive impacts.

#### 1.32 Performance Criteria and Development Standards

• Establish performance criteria and development standards for development permitted within sensitive habitats and buffer zones, to prevent and if infeasible mitigate to the extent possible significant negative impacts, and to enhance positive impacts.

#### County of San Mateo Tree Ordinances

#### Significant Tree Ordinance

According to the Significant Tree Ordinance No. 2427 of San Mateo County (Part Three of Division VIII of the County Ordinance Code, Chapter 1, Section 12,012) a "significant tree" is defined as any live woody plant rising above the ground with a single stem or trunk of a circumference of 38 inches or more measured at 4.5 feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

The Significant Tree Ordinance requires that a permit application be submitted for the cutting down, removing, poisoning or otherwise killing, destroying, or removing any significant tree or community of trees, whether indigenous or exotic, on any private property. The application shall be accompanied by drawings, photographs and other pertinent data including tree type, diameter/height and health; a map or of location and trees proposed to be cut; description of method to be used in removing or trimming the tree; a description of a tree planting or replacement program; and other pertinent information which the County Community Development Director may require.

## Heritage Tree Ordinance

According to the County's Heritage Tree Ordinance No. 2427 (County Ordinance Code, Chapter 1, Section 11,050), a "heritage tree" means any of the following:

- Class 1 shall include any tree or grove of trees so designated after Board inspection, advertised public hearing and resolution by the Board of Supervisors. The affected property owners shall be given proper written notice between 14 and 30 days prior to inspection and/or hearing by the Board.
- Class 2 shall include any individual coast live oak (*Quercus agrifolia*) trees of more than 48 inches in diameter-at-breast-height (DBH) that are healthy and generally free from disease.

According to requirements outlined in the ordinance, a permit is required to remove, destroy, or trim any heritage tree growing on any public or private property within the unincorporated area of San Mateo County without first obtaining a permit from the San Mateo County Planning Department. Any person desiring to cut down, destroy, move or trim one or more heritage trees on public or private property must apply to the San Mateo County Planning and Building Department for a Heritage Tree Removal/Trimming Permit provided by the Planning and Building Department. The permit application shall identify the affected species, provide the number, size and location of the trees or trees involved, contain a brief statement of the reason for the requested action, and describe any other pertinent information required by the County Development Director.

# **ENVIRONMENTAL IMPACTS**

## **Thresholds of Significance**

In accordance with Appendix G of the CEQA Guidelines, the proposed project could have a significant environmental impact on biological resources if it would:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game or United States Fish and Wildlife Service;
- b) 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 California Department of Fish and Game or United States Fish and Wildlife Service;
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d) Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of a native wildlife nursery site;
- e) Conflict with an local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section IV.A (Impacts Found to Be Less Than Significant) of this DEIR, the potential impacts associated with Thresholds (c), (d), and (f) listed above were determined to result in no impact. Therefore, only Thresholds (a), (b), and (e) listed above are addressed in the following discussion.

## **Project Impacts and Mitigation Measures**

Impact BIO-1 Have a Substantial Adverse Effect, either Directly or through Habitat Modifications, on any Species Identified as a Candidate, Sensitive, or Special-Status Species

#### Special-Status Plant Species

The Non-Native Annual Grassland within the project site has a low to medium potential to support three special-status plants that typically bloom in early spring (February to April): caper-fruited tropidocarpum, Hillsborough chocolate lily, and fragrant fritillary. Because these species were not yet identifiable during surveys conducted in mid May 2003 and late June 2008, their presence or absence on-site has not yet been confirmed, and therefore the project has potential to affect these species if present. If populations of these species are present, vegetation clearing and grubbing, grading, and construction could adversely affect the population(s), resulting in a *potentially significant* impact.

However, the Mitigation Measure BIO-1a would reduce the potentially significant impact to a *less-than-significant* level.

## Mitigation Measure BIO-1a

To avoid substantial adverse affects to special-status plants as a result of project construction, a focused survey shall be conducted in late February or March to determine the presence or absence of special-status plants within the project site. The surveys shall be conducted by a qualified biologist and will follow survey protocols acknowledged by the CNPS, CDFG, and USFWS.<sup>23,24,25</sup> A qualified biologist is

<sup>&</sup>lt;sup>23</sup> California Native Plant Society (CNPS). 2001. CNPS botanical survey guidelines. Pages 38-40 in California Native Plant Society's inventory of rare and endangered vascular plants of California (D.P. Tibor, editor). Sixth edition. Special Publication No. 1, California Native Plant Society, Sacramento, 387 pp.

<sup>&</sup>lt;sup>24</sup> California Department of Fish and Game (CDFG). 2000. Guidelines for assessing the effects of proposed projects on rare, threatened, and endangered plants and natural communities. (Revision of 1983 guidelines.) Sacramento, California, 2 pp.

<sup>&</sup>lt;sup>25</sup> U.S. Fish and Wildlife Service (USFWS). 1996a. Guidelines for conducting and reporting botanical inventories for federally listed, proposed, and candidate plants. Sacramento, California, 2 pp.

an individual who possesses the following qualifications: (1) experience conducting floristic field surveys; (2) knowledge of plant taxonomy and plant community ecology; (3) familiarity with the plants of the area, including rare, threatened, and endangered species; (4) familiarity with the appropriate state and federal statutes related to plants and plant collecting; and (5) experience with analyzing impacts of development on native plant species communities.

Following the completion of the surveys, a survey results report shall be prepared and provided to the County. This report shall be a condition of project approvals and shall include, but shall not be limited to, the following: (1) a description of the survey methods; (2) a discussion of the survey results; and (3) a map showing the development area and the location of any special-status plants encountered.

If no special-status plants are encountered in the development area, no further mitigation would be required, unless additional measures are required by the resource and regulatory agencies as a condition of their permit approvals. However, if special-status plant species are encountered, a Mitigation Program shall be prepared by the qualified biologist and shall include measures such as revising the proposed development plans to allow for avoidance and protection of the on-site population, providing permanent protection of an existing on- or off-site population of the species in the region at a 2:1 acreage ratio, or transplanting the individuals (or, if annuals, collecting and storing seeds) to permanent preserved habitat on- or off-site at a 1:1 acreage ratio. The Mitigation Program shall also outline measures to ensure the protection and management of the population prior to, during, and following project construction if the population will be avoided, including a mechanism to ensure permanent protection of the population from development (e.g., conservation easement) and/or, if applicable, measures for transplanting or protecting, managing, and monitoring the population on- or off-site.

## Special-Status Wildlife Species

Only five special-status wildlife species are known to occur in habitats similar to those found on the project site: the MBB, white-tailed kite, Cooper's hawk, pallid bat, and fringed myotis. These wildlife species and the associated project-related impacts are discussed below.

## Invertebrates

As discussed previously, a small population (15 to 20 plants) of one of the larvae host plants (summer lupine) for the endangered MBB was found in one location on the steep west facing slope above Ascension Drive. In addition, one of the food plants (blue dicks) for the adult MBB was found throughout the site. A site survey was conducted at a time of the year the adult MBBs would be out and flying, although none were observed during the survey. However, according to the USFWS, the presence of the MBB is assumed if the larvae host plants are found and if the project site is within the range of the butterfly.<sup>26</sup> Development components of the proposed project may result in the removal of a few individual larvae host plants associated with the MBB. Specifically, these components include portions

<sup>&</sup>lt;sup>26</sup> Telephone conversation with Chris Nagano, USFWS, October 4, 2004.

of the southwestern lot lines of Lots 22 and 23 and a portion of the drainage infrastructure and trail that are proposed to be developed in this same area. The acreage for Lot "A" (Common Area/Conservation Area) is approximately 4.12 acres. The acreage for the proposed undisturbed and protected area (located within the project site near the corner of Ascension and Bel Air) is 0.45 acres. Thus, as some of the plants are located within Lot "A", some of the food plants associated with the MBB would remain on the site. The proposed plant palette that would be used to landscape this area has not yet been identified; however, the project applicant has indicated that native vegetation would be utilized. As such, it is possible that the project would replace the summer lupine that would be lost during project construction. However, according to the USFWS, removal of the existing population of lupine would constitute a *potentially significant* impact to the MBB.<sup>27</sup>

This impact would be reduced to a *less-than-significant* level with the implementation of Mitigation Measure BIO-1b outlined below.

## Mitigation Measure BIO-1b

The project applicant shall redesign the portion of the proposed project that would be developed in proximity to the existing population of summer lupine to avoid removal of the plant species. Prior to finalizing project site plans, the Applicant shall provide a detailed map of summer lupine occurrences within the project site. This map will be reviewed in order to determine if any changes to the project design are necessary to avoid removal of the butterfly host plant. Such changes to be considered shall include, but are limited to, any one or combination of the following:

- Move all or a portion of the southwestern lot lines for Lots 22 and 23 to not include the summer lupine.
- Relocate the proposed drainage infrastructure that would cross through the location of the summer lupine further up the slope or to such a location that would avoid removal of the summer lupine.
- Relocate the proposed trail that would cross through the location of the summer lupine further up the slope or to such a location that would avoid removal of the summer lupine.
- Relocate the proposed Emergency Vehicle Access (EVA) road to avoid removal of the summer lupine.
- The project applicant shall include MBB larval host plant species of lupine in the conservation easement on the project site.

<sup>&</sup>lt;sup>27</sup> USFWS. 2004. Ibid.

• Prior to issuance of a grading permit by the County of San Mateo, the project Applicant shall consult with USFWS to ensure that project implementation will not result in a "take" of the MBB. Mitigation Measures listed above could meet some or all of USFWS's permit requirements. However, if avoidance of lupine is not possible, it is possible that USFWS will need to issue an incidental take authorization and/or require additional mitigation such as a financial contribution to an existing habitat conservation plan for the MBB, placing a conservation easement over preserved portions of the project site where the lupine is being avoided, or some other conservation plan to protect the viability of the species and its habitat.

## <u>Birds</u>

Two special-status bird species have a "medium" potential to nest on-site, including Coopers hawk and white-tailed kite; in addition, several non special-status migratory species have a medium potential to nest in trees and shrubs on and adjacent to the project site. Bird nests with eggs or young are protected under the MBTA and the California Fish and Game Code. Construction activities including vegetation removal, noise and vibration have a potential to result in direct (i.e., death or physical harm) and indirect (i.e., nest abandonment) impacts to nesting birds; these impacts would be considered *potentially significant*.

However, implementation of Mitigation Measure BIO-1c below, involving either vegetation removal/initiation of construction activities before the nesting season or pre-construction surveys during the nesting season would reduce this impact to a *less-than-significant* level.

## Mitigation Measure BIO-1c

To avoid impacting nesting birds and/or raptors, <u>one</u> of the following must be implemented:

• Conduct vegetation removal and other ground disturbance activities associated with construction during September through March, when birds are not nesting;

## - OR -

• Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season. A qualified wildlife biologist shall conduct a pre-construction raptor survey no more than 30 days prior to initiation of grading to provide confirmation on presence or absence of active nests in the vicinity (at least 300 feet around the project site). If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the CDFG and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 25 feet is required by CDFG for songbird nests, and 200 to 500 feet for raptor nests, depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel restricted from the area. A survey report by the qualified biologist

verifying that the young have fledged shall be submitted to the County prior to initiation of grading in the nest-setback zone.

#### Mammals

Potentially suitable roost habitat is present for two special-status bat species (pallid bat and fringed myotis) on the project site and includes any mature (greater than 25-inch DBH) tree stand and any large snags or felled trees. Removal of roost habitat during the bat hibernation or maternity season has potential to result in harm, death, displacement and/or disruption of bats and/or nursery colony roosts; this impact would be *potentially significant*.

To avoid impacting breeding or hibernating bats, Mitigation Measure BIO-1d would be implemented to reduce this impact to a *less-than-significant* level.

#### Mitigation Measure BIO-1d

To avoid impacting breeding or hibernating bats, tree and snag removal shall occur in September and October, after the bat breeding season and before the bat hibernation season. If snag and tree removal is to take place outside of this time frame, a pre-construction bat survey shall be conducted. If no roosting bats are found during the survey, no further mitigation would be required. If bats are detected, a 50-foot buffer exclusion zone shall be established around each occupied snag or tree until the roosting activities have ceased.

# Impact BIO-2 Have a Substantial Adverse Effect on any Riparian Habitat or other Sensitive Natural Community

#### Tree Removal

According to Figure III-18, and based upon the tree survey report prepared by Mayne Tree Experts Company, Inc. in August 2003 (refer to Appendix E), the proposed project would result in the removal of 37 trees. All of the large pine trees on the project site would remain in place. The tree report determined that the 37 trees proposed to be removed did not qualify to be Heritage Trees as defined by the County of San Mateo Heritage Tree Ordinance. As such, implementation of the proposed project would not result in direct impacts to heritage trees. However, some of these trees may be defined as Significant Trees, as the circumference of several trees may exceed 38 inches; impacts to these trees from the proposed development due to removal or damage may be considered a *potentially significant* impact.

However, implementation of Mitigation Measure BIO-2a would reduce this impact to a *less-than-significant* level.

## Mitigation Measure BIO-2a

Prior to project implementation, the project Applicant shall retain a certified arborist or other qualified professional (approved by the County of San Mateo) to prepare an application for a Significant and/or

Heritage Tree Removal Permit. The arborist shall verify and update tree survey data collected in August 2003 in order to confirm the accuracy of tree's size (circumference), tree health, and other pertinent data collected within the project site. Based on the updated tree survey data and an overlay of current project development plans on the map of existing trees for the project site, the Applicant's arborist shall provide a map and census of trees to be removed by the proposed project that will accompany the tree removal application. The Applicant's arborist shall also prepare a Tree Replacement Plan and determine the appropriate tree replacement ratio in coordination with the County Community Development Director.

# Indirect Effects to Preserved Trees

It is possible that remaining Significant or Heritage trees on the project site and those County-protected trees located outside of the project boundaries, but within proximity to the limits of grading, could sustain detrimental damage during project construction. Possible construction activities that could affect these remaining trees could include, but are not limited to, the compaction of soil around a tree, the severing of roots during trenching of utility lines, the placement of fill or cut slopes at the base of a tree, inappropriate trimming of limbs to allow equipment access, accidental damage to a tree by heavy equipment or by felling other trees, or improper landscape management. Any of these activities could result in the eventual loss of a tree over time. Thus, the project's potential indirect impacts to preserved trees would be *potentially significant*.

However, with the implementation of Mitigation Measure BIO-2b, this indirect impact will be reduced to a *less-than-significant* level.

## Mitigation Measure BIO-2b

Prior to commencement of construction activities, a certified arborist or other County-approved professional shall review the final project plans to determine the potential for damage to occur to any trees that are not proposed for removal. If the arborist determines that any Significant and/or Heritage tree would be adversely affected by the project either through immediate damage or through damage that affects the long-term health of the tree eventually causing disease or death, the project applicant shall replace these identified trees on or near the project site in compliance with the County's tree replacement requirements; the appropriate tree replacement ratio will be determined in coordination with the County Community Development Director. The following measures shall be implemented to avoid and/or minimize for potential indirect impacts to preserved trees before, during, and following construction activities.

## **Pre-Construction**

• <u>Fencing</u>: Protective fencing at least 3 feet high with signs and flagging shall be erected around all preserved trees located adjacent to proposed vegetation clearing and grubbing, grading, or other construction activities. The protective fence shall be installed at a minimum of 5 feet beyond the tree canopy dripline. The intent of protection fencing is to prevent inadvertent limb/vegetation damage, root damage and/or compaction by construction equipment. The protective fencing shall

be depicted on all construction plans and maps provided to contractors and labeled clearly to prohibit entry, and the placement of the fence in the field shall be approved by a qualified biologist prior to initiation of construction activities. The contractor shall maintain the fence to keep it upright, taut and aligned at all times. Fencing shall be removed only after all construction activities are completed.

• <u>Pre-Construction Meeting</u>: A pre-construction meeting shall be held between all site contractors and a registered consulting arborist and/or a qualified biologist. All site contractors and their employees shall provide written acknowledgement of their receiving sensitive natural community protection training. This training shall include, but shall not be limited to, the following information: (1) the location and marking of protected sensitive natural communities; (2) the necessity of preventing damage to these sensitive natural communities; and (3) a discussion of work practices that shall accomplish the purpose of mitigation measures.

#### During Construction

- <u>Fence Monitoring</u>: The protective fence shall be monitored weekly during construction activities to ensure that the fencing remains intact and functional, and that no encroachment has occurred into the protected natural community; any repairs to the fence or encroachment correction shall be conducted immediately.
- <u>Equipment Operation and Storage</u>: Contractors shall avoid using heavy equipment around the sensitive natural communities. Operating heavy machinery around the root zones of trees would increase soil compaction, which decreases soil aeration and, subsequently, reduces water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the protected zones, unless where specifically approved in writing and under the supervision of a registered consulting arborist and/or a qualified biologist.
- <u>Materials Storage and Disposal</u>: Contractors shall not store or discard any construction materials within the fenced protected zones, and shall remove all foreign debris within these areas. However, the contractors shall leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrient supply. In addition, contractors shall avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) shall be disposed of properly. The contractors shall ensure that equipment be parked at least 50 feet, and that equipment/vehicle refueling occur at least 100 feet, from fenced tree protection zones to avoid the possibility of leakage of equipment fluids into the soil.
- <u>Grade Changes</u>: Contractors shall ensure that grade changes, including adding fill, shall not be permitted within the fenced protected zone without special written authorization and under supervision by a registered consulting arborist and/or a qualified biologist. Lowering the grade within the fenced protected zones could necessitate cutting main support and feeder roots, thus jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on

top of the existing grade could compact the soil further, and decrease both water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the fenced protected zone shall not create conditions that allow water to pond.

- <u>Trenching</u>: Except where specifically approved in writing beforehand, all trenching shall be outside of the fenced tree protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root impacts. A registered consulting arborist shall ensure that all pruning cuts shall be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may ultimately result in tree mortality. Use of both root pruning and Air-Spade equipment shall be accompanied only by hand tools to remove soil from trench locations. The trench shall be made no deeper than necessary.
- <u>Erosion Control</u>: Appropriate erosion control best management practices (BMPs) shall be implemented to protect preserved protected trees during and after project construction. Erosion control materials shall be certified as weed free.
- <u>Inspection</u>: A registered consulting arborist shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the project. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the registered consulting arborist following each inspection.

## Post-Construction

- <u>Mulch</u>: The contractors shall ensure that the natural duff layer under all trees adjacent to construction activities shall be maintained. This would stabilize soil temperatures in root zones, conserve soil moisture, and reduce erosion. The contractors shall ensure that the mulch be kept clear of the trunk base to avoid creating conditions favorable to the establishment and growth of decay causing fungal pathogens. Should it be necessary to add organic mulch beneath retained oak trees, packaged or commercial oak leaf mulch shall not be used as it may contain root fungus. Also, the use of redwood chips shall be avoided as certain inhibitive chemicals may be present in the wood. Other wood chips and crushed walnut shells can be used, but the best mulch that provides a source of nutrients for the tree is its own leaf litter. Any added organic mulch added by the contractors shall be applied to a maximum depth of 4 inches where possible.
- <u>Watering Adjacent Plant Material</u>: All installed landscaping plants near the protected tree zones shall require moderate to low levels of water. The surrounding plants shall be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet, nor should drainage allow ponding of water. Irrigation spray shall not hit the trunk of any tree. The

contractors shall maintain a 30-inch dry-zone around all tree trunks. An above ground microspray irrigation system shall be used in lieu of typical underground pop-up sprays.

• <u>Monitoring</u>: A registered consulting arborist shall inspect the trees preserved on the site adjacent to construction activities for a period of two years following the completion of construction. Monitoring visits shall be completed quarterly, totaling eight visits. Following each monitoring visit, a report summarizing site conditions, observations, tree health, and recommendations for promoting tree health shall be submitted to the County. Additionally, any tree mortality shall be noted and any tree dying during the two-year monitoring period shall be replaced at a minimum 2:1 ratio on-site in coordination with the County.

## Loss of Oak Woodland Community

The proposed project construction has potential to adversely affect oak woodlands, which are considered sensitive natural communities under the PRC §21083.4. The proposed project would result in the removal of approximately 2.8 acres of Coast Live Oak Woodland. The removal of this oak woodland represents a loss of approximately 85 percent of the total 3.3 acres of this community on the site. This is a substantial loss of oak woodland and is considered to be a *potentially significant* impact.

However, with the implementation of Mitigation Measure BIO-2c, this indirect impact will be reduced to a *less-than-significant* level.

#### Mitigation Measure BIO-2c

Mitigation for the approximately 2.8 acres of Coast Live Oak Woodland that would be removed by project construction shall be accomplished through <u>one</u> or <u>a combination of</u> the following mitigation options:

Establish Oak Woodland Conservation Easement: Under California PRC §21083.4, mitigation • for conversion of oak woodlands can be accomplished, in part, by conserving existing oak woodland habitat. For every acre of oak woodland impacted on the project site, one acre of the same oak woodland type shall be protected off-site in perpetuity through a conservation easement or fee title dedication, to be approved by the County and CDFG. The proposed open space areas would be protected under a permanent conservation easement or fee title dedication, to be approved by the County and CDFG, and implemented prior to project construction. The easement or agreement would specify that the oak woodland habitat is to remain in perpetuity, and shall specify the land management and maintenance practices designed to protect the habitat, shall include a baseline report documenting the existing habitat conditions (i.e., a tree survey conducted by a registered professional forester or a certified arborist), shall include a habitat monitoring plan, shall include an oak woodland education program for project residents, shall designate the party responsible for all actions related to management and maintenance, and shall specify limitations and restrictions on land use (i.e., access, fencing, grazing, tree planting or pruning, response to catastrophic events such as wildfire or pest invasion).

Plant Replacement Trees On-site and Prepare/Implement Mitigation and Monitoring Plan: Under California PRC §21083.4, mitigation for conversion of oak woodlands can be accomplished, in part, by planting an appropriate number of trees, including maintaining the plantings and replacing dead or diseased trees. Mitigation for the approximately 2.8 acres of oak woodland that would be removed by project construction shall be accomplished through planting replacement trees at a ratio to be determined in coordination with the County Community Development Director (refer to Mitigation Measure BIO-2a). As part of the proposed project, conservation areas will be set aside that to accommodate replacement tree plantings. These areas will be protected under a permanent conservation easement or fee title dedication, to be approved by the County and CDFG, and implemented prior to project construction. The easement or agreement shall specify that the oak woodland habitat is to remain in perpetuity, and shall specify the land management and maintenance practices designed to protect the habitat. It shall also specify limitations and restrictions on land use (i.e., access, fencing, grazing, tree planting or pruning, response to catastrophic events such as wildfire or pest invasion).

A Tree Mitigation and Monitoring Plan will be prepared by an arborist or other County-approved professional showing the species, size, spacing and location of plantings and the location and species of established vegetation. The plan shall be subject to approval by the County. The mitigation oaks shall be maintained for a period of no less than seven years from the date of planting, and replaced if mortality should occur during that seven-year period. Irrigation shall be required for the first five years following planting; the trees should be able to survive without irrigation for the last two years of the seven-year maintenance period. During the seven-year maintenance period, dead or dying trees shall be replaced with trees of the same species and size in order to achieve an 80 percent survival rate at the end of the seven-year period. If an 80 percent survival rate is not achieved at the end of the seven-year period, all dead or dying trees at that time shall be replaced.

The Tree Mitigation and Monitoring Plan shall identify who is responsible for maintaining and replacing trees during the maintenance period. The property owner or other party responsible for maintaining the replacement trees shall submit an annual report to the County on or before July 1<sup>st</sup> of each year documenting the condition of the trees and identifying which trees have been replaced or will need to be replaced. An agreement to maintain the replacement trees in accordance with the Tree Mitigation and Monitoring Plan shall be signed by the owner of the property on which the trees are located and by any other party who has been designated as responsible for maintaining the replacement trees and by the applicant if the trees are planted off the project site, and a security shall be provided to the County in an amount sufficient for the County to maintain and potentially replace the trees for a seven-year period if the responsible party fails to do so. The security may be in the form of a letter of credit, certificate of deposit or other security as approved by the County. The amount of the security shall be determined by an estimate from a professional landscaper submitted by the property owner or the applicant for the cost of maintaining the trees and potentially replacing them over the seven-year maintenance period plus 10 percent to administer said maintenance and tree replacement contract or in an

amount established by the County after professional consultation. During the seven-year maintenance period, if the responsible party fails to maintain the replacement trees as required herein, the County shall be authorized to use the security to fund replacing dead or dying trees or maintenance of the trees. At the end of the seven-year maintenance program, the certified arborist shall conduct an inspection of the replacement trees. If the required 80 percent survival rate has not been achieved, all dead or dying trees shall be replaced and any funds remaining in the security shall be forfeited. If the required 80 percent survival rate has been achieved, any funds remaining in the security shall be released.

• <u>Contribute to Oak Woodlands Conservation Funding</u>: Contribute a fee to the California Wildlife Conservation Board's Oak Woodlands Conservation Fund or other mitigation fund established by the County using the following formula: [Fee = 1.0 x acres of impacted oak woodland x current land value]. All contributions to the state Oak Woodlands Conservation Fund or other mitigation fund shall specify that these moneys will be used to purchase mitigation oak woodlands in the County. An administration fee equal to 10 percent of the mitigation fee shall also be required to cover the County's costs associated with this option. The in-lieu fee shall be prorated for the development plans and collected at the time of project approval. The determination of appropriate fund contribution shall be approved by the County and CDFG, and shall be contributed, prior to the initiation of project construction.

## **CUMULATIVE IMPACTS**

Cumulative impacts can result from individually minor, but collectively significant, impacts taking place over a period of time. The following cumulative impact analysis is based on a review of related projects in the vicinity of the project site (refer to Table III-1) and of existing conditions in the project vicinity through an evaluation of available aerial photographs.<sup>28</sup>

The list of projects in Table III-1 includes 22 projects of various land uses, including single- and multifamily residential, commercial, retail, office, library, police station, College of San Mateo master plan, and a water pipeline. These related projects all consist of approved, proposed, or projects currently under construction that are located in the Count of San Mateo and the City of San Mateo. A majority of these projects are: (1) proposed in heavily urbanized areas, which lack biological resources similar to those present on the project site; or (2) are "infill" projects, resulting in the removal of existing development and replacing it with new development. In the cases of these types of projects, the amount and quality of the biological resources at or near the sites is low and significant impacts to biological resources are not expected to occur.

Although a few of the related projects in undeveloped areas of San Mateo County may have a significant impacts on similar biological resources including: special-status species (specifically the MBB), sensitive

<sup>&</sup>lt;sup>28</sup> Google Earth, version 4.0. Aerial photograph of Project Site Vicinity. July 15, 2008.

plant communities (oak woodlands), and protected trees, these projects would typically be required to implement mitigation measures similar to those for the proposed project, which would reduce these impacts to a less-than-significant level. Compliance with the permit requirements for take of the MBB and tree preservation/replacement regulations of the jurisdiction in which the project is located would ensure that these projects would not significantly affect these resources.

Implementation of the proposed project in conjunction with related projects could result in a regional loss of undeveloped land and associated biological resources; however, as mentioned above, the majority of the related projects are located in already-developed areas that generally support few biological resources, particularly resources that are considered sensitive. Additionally, although common wildlife species may be displaced or lost as a result of construction activities and grading operations of the proposed project and related projects, implementation of such projects would not reduce regional populations of common wildlife species to below self-sustaining levels or otherwise substantially affect these populations. Overall, wildlife species diversity in the project vicinity is expected to be relatively low, and most of the species present are expected to be those that are tolerant of, and adapted to, urban conditions.

Lastly, the biological habitats on the project site (oak woodlands, grassland for raptor foraging, MBB habitat, nesting habitat for birds, and roosting habitat for bats) are too small, fragmented, and/or isolated by surrounding development to support substantial and viable sensitive biological resources. Conversion of on-site habitats would not result in a cumulatively considerable impact in combination with impacts from other projects in the region, especially in comparison with the high quality and large extent of similar habitats in surrounding undeveloped areas within the project site vicinity. For example, the Crystal Springs Reservoir area contains significant areas of undeveloped lands protected by the San Francisco Water District that support a mosaic of large and contiguous expanses of oak woodland, open water habitat, wetland complexes, and other important habitats that have been documented to support a suite of sensitive plant and animal species.

Therefore, provided the mitigation measures listed above are implemented, the proposed project's contribution to significant cumulative biological resources impacts would be *less than significant*.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of mitigation measures, impacts to biological resources would be *less than significant*.

# IV. ENVIRONMENTAL IMPACT ANALYSIS D. GEOLOGY & SOILS

## INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of geology and soils with respect to the proposed Ascension Heights Subdivision project ("proposed project") and includes an assessment of potential impacts associated with the development of the proposed project on the geology and soils of the project site. The following discussion presents the findings and conclusions of a third party geotechnical/geological peer review conducted by Treadwell & Rollo, Inc. (T&R). This section is based on the following reports (refer to Appendix F of the DEIR):

- *Soils Investigation Report*, prepared by Terrasearch, Inc., November 12, 1979, revised February 15, 1980;
- *Feasibility Geotechnical Investigation*, prepared by R.C. Harlan and Associates (H&A), July 8, 1981;
- *Geotechnical and Engineering Geologic Investigation*, prepared by Michelucci & Associates (M&A), December 16, 2002;
- Third Party Geotechnical/Geological Review, prepared by T&R, November 20, 2003;
- *Third Party Review, Ascension Heights Subdivision, San Mateo County, California*, prepared by M&A, January 15, 2004;
- Third Party Geotechnical/Geological Review, prepared by T&R, January 22, 2004; and
- Supplemental Geologic Information, Response to County Review Comments, Ascension Heights Subdivision, San Mateo, California, prepared by T&R, December 12, 2008.

## METHODOLOGY

The methodology used to determine the environmental setting and impacts of the proposed project to geology and soils included the following:

- review of previous geologic and geotechnical reports prepared for the site;
- site reconnaissance and review of aerial photographs;
- limited exploration of the subsurface soil and bedrock conditions by excavating sixteen test pits;
- evaluation of the physical and engineering properties of the subsurface soils and bedrock by evaluating previous laboratory tests on selected samples; and

• preparation of report as a summary of findings, and to present preliminary conclusions and recommendations.

#### **ENVIRONMENTAL SETTING**

#### **Regional and Local Setting**

The project site is within the Coast Ranges geomorphic province, which is characterized by northwest trending valleys and ridges. These are controlled by a series of folds and faults that resulted from the collision of the Farallon and North American plates and subsequent strike-slip faulting along the San Andreas Fault zone.

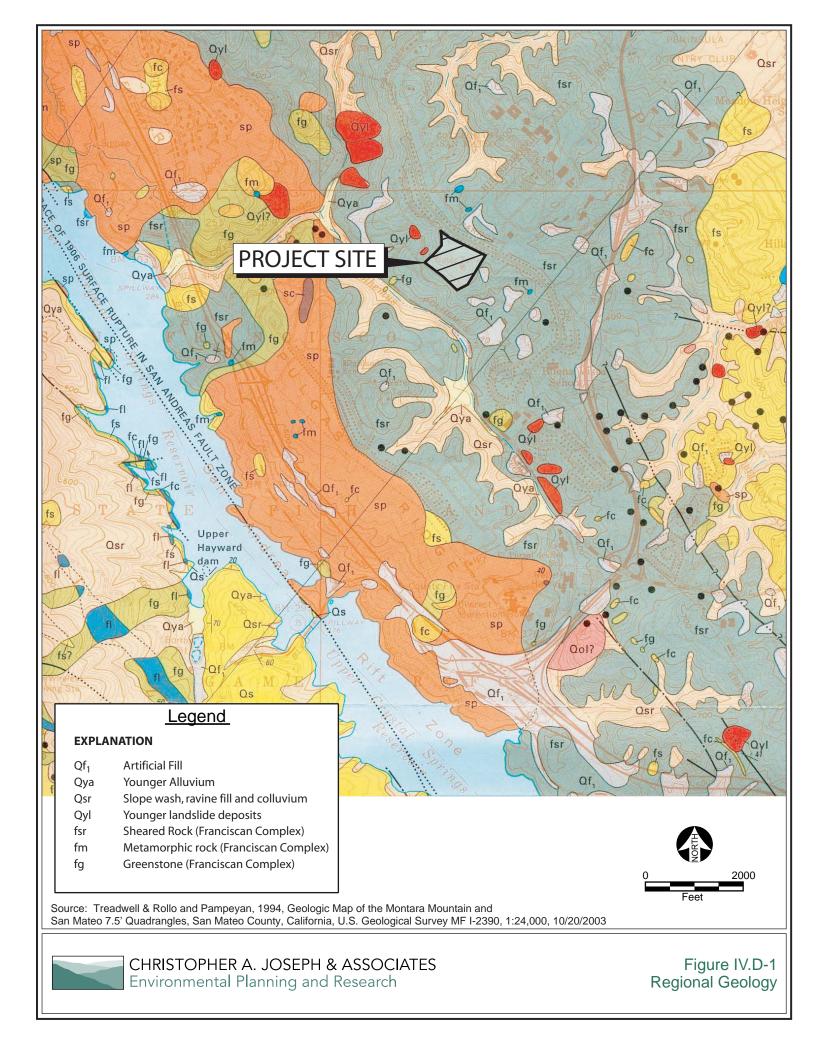
As discussed in Section III (Project Description), surface elevation of the site ranges from approximately 410 to 610 feet above mean sea level (msl). General information on soils in the area of the project site was obtained from the United States Department of Agriculture (USDA) Soil Conservation Service (subsequently referred to as Natural Resources Conservation Service [NRCS]). Bedrock in the project site vicinity consists of melange (fsr) belonging to the Franciscan Complex. The melange typically consists of relatively weak, highly sheared shale, siltstone and sandstone containing variably sized inclusions of sandstone, greenstone, chert, serpentinite, and other rock types. Bedrock is overlain by colluvium deposits that are reported in the NRCS Soil Survey to vary from 40 to 60 inches thick in the site vicinity. These deposits include varying amounts of sand, silt, clay, and weathered rock fragments that are transported by gravity to the base of the slope (refer to Figure IV.D-1).

#### **Project Site History**

Historical site conditions were observed by reviewing aerial photographs dating back to 1946. Standard aerial photograph review and photogeologic mapping techniques were employed to identify significant geologic features at the project site such as tonal contrasts, vegetation patterns, and abrupt changes in topographic slope.

#### **Development History**

The earliest available aerial photographs, dated 1946, show the project site and surrounding vicinity as being undeveloped. By 1955, Parrott Drive and the accompanying residences were present, adjacent to the northeast boundary of the project site. The top of the knoll at the project site had been graded flat and the present-day California Water Service Company (Cal Water) water tank had been built. Two unpaved roads connecting the water tank to the north corner of the project site are visible in the 1955 photographs. Bel Aire Road and Ascension Drive first appear in the 1961 aerial photographs, along with adjacent cut slopes on the northwest and southwest slopes of the project site. The cut slopes were benched. Remnants of construction roads were visible as hillside benches and notches near the cut slopes. Most of the residences along Bel Aire Road and Ascension Drive were present opposite the project site cut slopes. By



1969, all residences along Bel Aire Road and Ascension Drive were present. Cul-de-sacs for Kristin Court and CSM Drive, near the southeast border of the project site, had been cut and graded. Residences were present along the cul-de-sacs by 1972. No additional development at the project site or adjacent properties was observed in the aerial photographs taken after 1972, with one exception; minor grading was observed west of the Kristin Court residences in the 1989 photographs.

#### Historical Slope Conditions

The pre-development site conditions observed in the 1946 photographs show that the northwestern slope of the knoll is composed of a broad, gentle swale. The ground surface had a slight hummocky appearance indicative of surficial soil creep. Two relatively narrow, gentle swales were located on the southwestern slope of the knoll. Hummocky ground surfaces within each swale indicated the presence of shallow earth flows and/or creep zones in the swales. It was observed that a small, shallow scarp on the northeastern slope of the knoll may have been a small excavation such as a test pit. This feature becomes less prominent over time.

The 1961 photographs show that most of the former creep area on the northwestern slope had been removed by the cut for Bel Aire Road. Likewise, the lower portions of the two shallow swales on the southwestern slope had been removed by the cut for Ascension Drive. Possible remnants of creeping soil in the upper portions of both swales may have remained after the Ascension Road cut.

By 1969, portions of the northwestern and southwestern cut slopes were extensively eroded with numerous gullies that disrupted the benches. Two former construction roads, one located at the top of the northwestern cut slope and the other located between the northwestern and southwestern cut slopes, had eroded into drainage gullies. A localized area of gully erosion was observed on the southeast slope of the knoll, downslope of the water tank. That gullied area appears to have been created during a reported release from the tank described in M&A (2002).

In 1972, the cut slopes were mostly re-vegetated with grass except at the heavily gullied areas, which showed increased gully erosion compared to the previous photographs. By 1977, the small scarp observed in the 1946 aerial photographs was no longer visible, and the gullied area downhill of the tank was less pronounced and mostly re-vegetated with grass. Project site conditions remained relatively unchanged through the 1980s and 1990s. During that time period, the aerial photographs showed increased erosion in areas of erosional gullies.

#### **Project Site Geology**

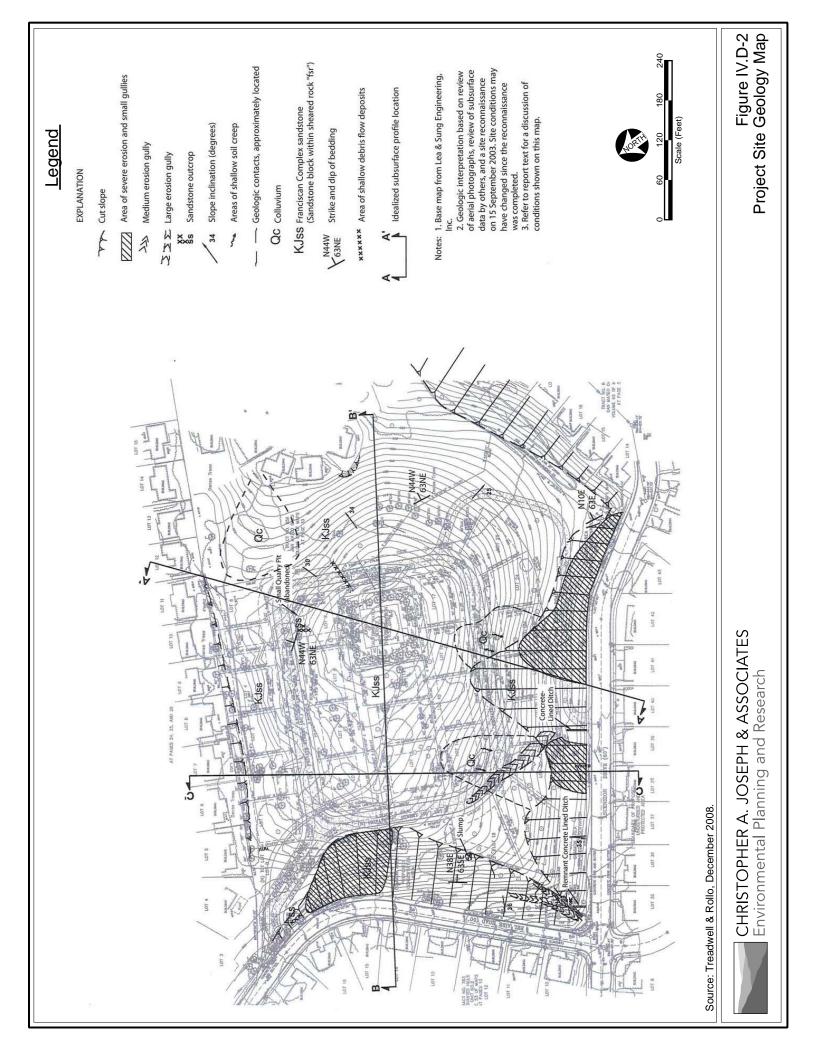
Terrasearch, Inc. performed a soil investigation for the project site in 1979. The project site exploration included eight exploratory borings that extended to depths of 15 to 20 feet in the northeast half of the project site. Franciscan Complex bedrock was encountered consisting of hard sandstone with occasional claystone interbeds. Fine sandy silts and silty sands that varied in thickness from 1 to 2.5 feet overlay the sandstone.

H&A performed a geotechnical feasibility study of the project site in 1981. Based on geologic mapping, aerial photograph interpretation, and review of previous exploration by other consultants, it was concluded that the project site was underlain by sandstone and minor greenstone of the Franciscan Complex. The sandstone was described as typically brown, moderately hard, highly to moderately weathered, fine to medium grained, and closely fractured, with local areas of "both slightly weathered, hard rock and completely weathered, soft rock" (H&A, 1981). Bedding was not well developed, but was generally inclined to the northeast at a low angle. The greenstone was described as ranging from brown, slightly hard, highly weathered and extremely fractured to gray, hard, slightly weathered and moderately fractured. Colluvium and artificial fill were observed overlying the bedrock, with the colluvium consisting of a brown sand, silt, and clay mixture containing scattered angular gravel fragments of sandstone and greenstone, with 1 to 2 feet of gray clayey topsoil present at the surface. H&A estimated the colluvium thickness to range from 1 to 15 feet, with 5 feet being the average thickness.

M&A explored the project site in 2002 using 19 borings and 16 test pits. The bedrock at the project site was described as dense to very dense tan to yellow brown sandstone that generally becomes less weathered, stronger, and more cemented with depth. The bedrock was observed to be overlain by a thin (less than 3 feet thick) layer of brown sandy to silty clay (colluvium/residual soil) that tested very low in expansion potential. Areas of thicker colluvium postulated by H&A were not encountered in M&A's nor Terrasearch's exploratory borings and test pits. M&A also pointed out that no shale or sheared rocks typical of Franciscan Complex melange were encountered in any of the test pits or borings. Bedrock structure data were limited to one test pit (TP-3) in the west-central portion of the project site. The M&A report indicated that at TP-3, two fracture orientations were measured and M&A concluded the orientations were favorable from a slope stability standpoint.

T&R preformed a geologic reconnaissance of the project site in fall 2003 and December 2008. During the 2003 site visit, areas mapped having colluvium (Qc) appeared to be somewhat thicker than that observed by M&A and Terrasearch (refer to Figure IV.D-2). It was estimated that the maximum thickness would be less than 5 feet. These colluvium deposits coincide with remnant swales, the lower portions of which were removed by the slope cut for Ascension Drive. The remaining areas of the project site were interpreted to be underlain by Franciscan Complex bedrock with a veneer of colluvium generally less than 3 feet thick. Bedrock was also mapped (refer to Figure IV.D-2) as sandstone (KJss), but was described in logs of previous test pits and borings as also containing minor amounts of siltstone. The mapped sandstone unit was interpreted to be a large block of sandstone within the Franciscan Complex melange (fsr). No areas of artificial fill were visible in the aerial photographs or during this project site reconnaissance, except for minor "sliver" fills along remnant construction roads near the northwest and southwest project site slopes.

Many erosional gullies were observed on-site during this 2003 site reconnaissance and aerial photograph review. The gullies were found on the cut slopes on the northwest and southwest knoll faces adjacent to Bel Aire Road and Ascension Drive. A much smaller, localized area of gully erosion was observed on the southeast slope downhill of the water tank, which can be attributed to the reported release of water from the tank during the 1960s.

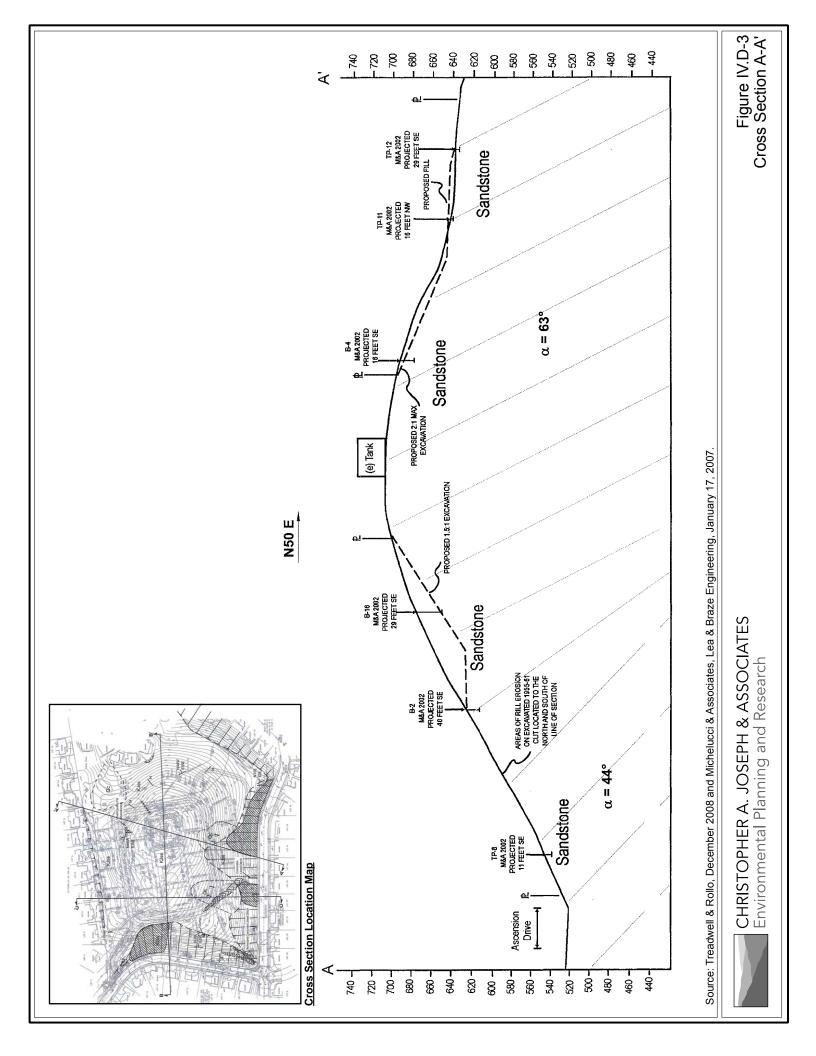


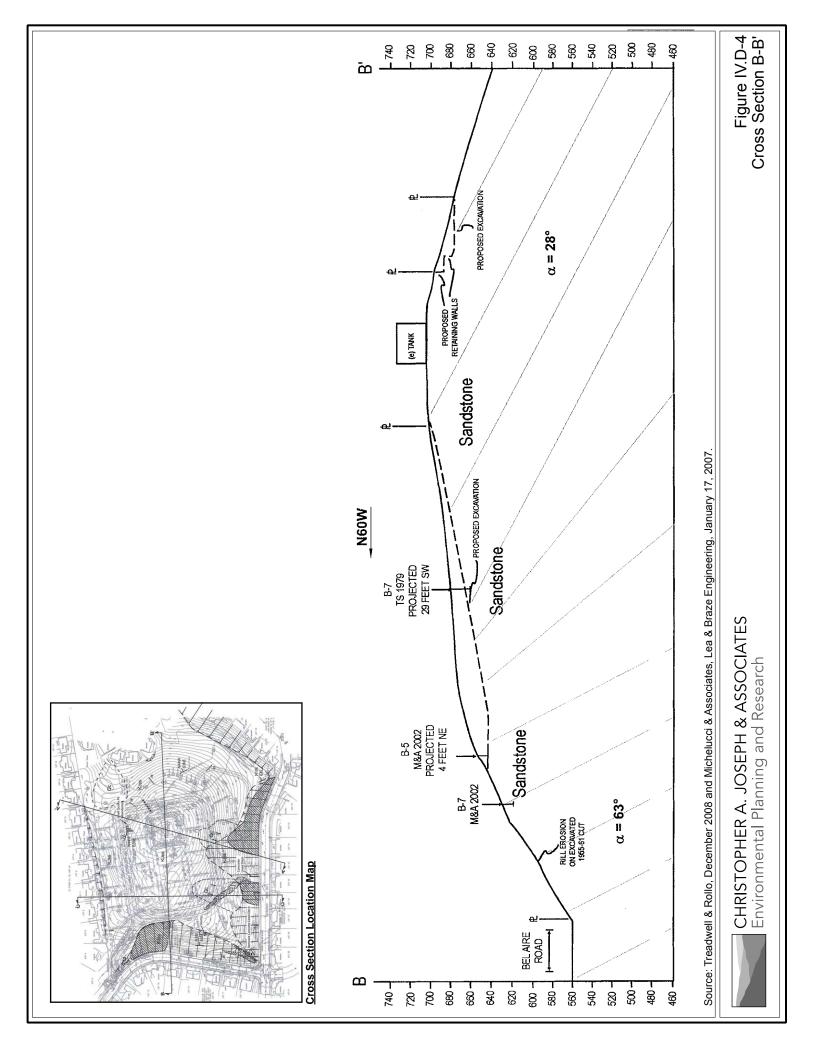
As stated previously an additional site reconnaissance was conducted by T&R in 2008 to confirm the presence or absence of greenstone. The H&A feasibility geotechnical investigation report dated July 8, 1981 stated "*The property is underlain by bedrock consisting mainly of sandstone and some greenstone of the Franciscan Formation*". None of the other investigation reports prepared for the site by Terrasearch, Inc. (revision date February 15, 1980), M&A (dated December 16, 2002) or the T&R 2003 third party review report described observations of greenstone on the site.

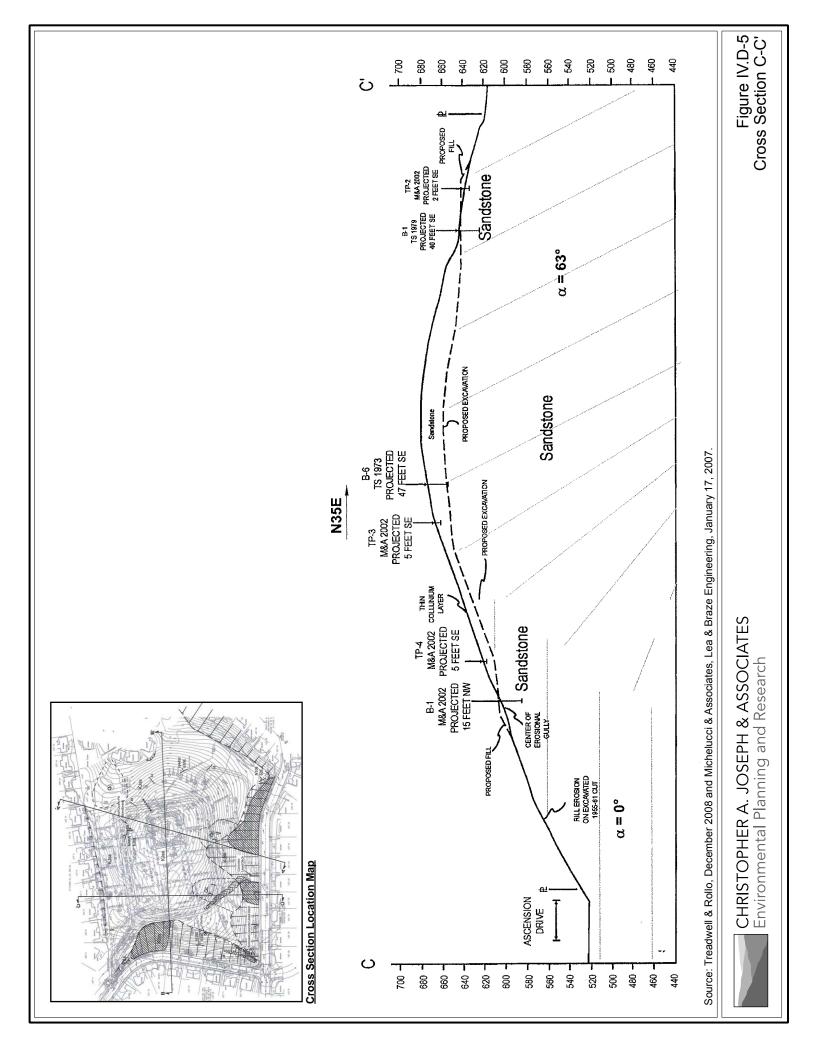
During this 2008 site visit, site geological conditions were confirmed and/or clarified. This was completed by observing and measuring bedding attitudes at three locations on the site. As a result, sandstone bedrock was observed in outcrops at various locations around the site, including a previous small quarry pit. This small abandoned quarry pit is located on the northeast side of the site peak and is characterized by a crescent shaped, near vertical cut slope up to approximately 5 to 6 feet in height, with a mound of debris (tailings) located just downslope. The quarry cuts expose sandstone bedrock beneath a thin veneer of soil. Based on review of prior reports and site observations, T&R concluded that the site is underlain by sandstone with no greenstone/sandstone contact present. Deep colluvium in swales on the southwest and northeast sides of the site and small scale debris-flow deposits in an area previously identified as "medium erosion gully" were also observed. Per T&R, if the colluvium remains on-site, it may be susceptible to soil creep and small scale debris flows. Figures IV.D-3 through IV.D-5 provide representative geologic cross-sections, which show the apparent bedding, adjusted for the direction of the sections. Additionally, Figure IV.D-2 shows the locations of the three bedding attitudes recorded.

#### Groundwater

During Terrasearch, Inc.'s analysis of the project site, free groundwater was not encountered in any of the test borings. However, moisture was noticed in Test Boring Number 7 at a depth of about 12 feet. Further, during H&A's geotechnical site analysis, the depth to the groundwater table was not determined; however, per this report it was expected to be relatively deep, reflect the surface topography, and to fluctuate with precipitation. Similarly as part of M&A's 2002 site analysis, groundwater was not encountered in any of the borings. Per M&A, groundwater levels tend to fluctuate seasonally and could rise to depths explored in the future. Shallow, seasonal "perched" groundwater sometimes occurs in the topsoil layer when the soil is underlain by dense, less pervious, bedrock. M&A observed groundwater seepage from the base of weathered rock and above the less pervious rock along Ascension Drive. A portion of M&A's field investigation was conducted shortly following a rainfall period of approximately 2 days with precipitation on the order to 2 to 3 inches. During this investigation M&A observed active seepage of water from the toe of the cut slope adjacent to Ascension Drive and from the base of the weathered rock horizon (overlying less weathered rock) 1 to 2 feet below the ground surface. Per M&A, erosion occurs primarily within this zone, and that groundwater, except possibly as relatively slow seepage, does not penetrate to greater depth.







#### Seismicity and Seismic Hazards

Seismic hazards include ground motion, ground surface fault rupture, liquefaction, settlement, lateral spreading, and seismically-induced slope instabilities.

The project site is located in the seismically active region of northern California. The numerous faults in the region include active, potentially active, and inactive faults. These major groups are based on criteria developed by the California Geological Survey (CGS), formerly known as the California Division of Mines and Geology, for the Alquist-Priolo Earthquake Fault Zoning Program. By definition, an active fault is one that has had surface displacement within Holocene times (about the last 11,000 years). A potentially active fault is a fault that has demonstrated surface displacement during Quaternary time (the last 1.6 million years). Inactive faults have not moved in the last 1.6 million years. Earthquake Fault Zones, formerly known as Special Studies Zones, have been established along active known faults in California in accordance with the Alquist-Priolo Earthquake Fault Zoning Act (Act) passed in 1972.

The project site is within a region characterized by the seismically active San Andreas Fault system, which is the principal tectonic element of the North American/Pacific plate boundary in California. Movements along this plate boundary in the Northern California region are primarily translational, resulting in mostly right-lateral strike-slip faulting along the San Andreas Fault system. Seismic and aseismic slip on the San Andreas Fault system is partitioned into subsidiary structures that distribute plate movements across the Coast Ranges province, between the off-shore Continental Shelf areas to the west and the Sacramento Valley to the east.

The San Andreas Fault zone is located approximately 1.6 kilometers southwest of the project site. Other major active faults in the region include the San Gregorio, Hayward, and Calaveras faults. A list of major active faults in the region, including their distances from the project site and maximum moment magnitudes ( $M_w$ ), is provided in Table IV.D-1. Moment Magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

Fault Name	Distance from Site (km)	Direction from Site	Maximum Moment Magnitude
San Andreas - 1906 Rupture	1.6	Southwest	7.9
San Andreas - Peninsula	1.6	Southwest	7.2
Monte Vista	13	Southeast	6.8
San Gregorio - North	14	West	7.3
Hayward - Southern	28	Northeast	6.9
Hayward - Total	28	Northeast	7.1
Hayward - Northern	32	Northeast	6.6
San Andreas - North Coast South	38	Northwest	7.5
Hayward - Southeast Extension	40	East	6.4
Calaveras - Northern	40	Northeast	7.0

Table IV.D-1Regional Active Faults and Seismicity

Fault Name	Distance from Site (km)	Direction from Site	Maximum Moment Magnitude
Mount Diablo Thrust	46	Northeast	6.7
Calaveras - Central	48	East	6.6
San Andreas - Santa Cruz Mountains	49	Southeast	7.2
Concord	51	Northeast	6.5
Source: Treadwell & Rollo, 2003.			

Table IV.D-1Regional Active Faults and Seismicity

Since 1800, four major earthquakes have been recorded on the San Andreas Fault in the greater San Francisco Bay and Monterey Bay areas. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas Fault. The estimated  $M_w$  for this earthquake is approximately 6.25. In 1838, an earthquake occurred with an estimated MM intensity of about VIII-IX, corresponding to a  $M_w$  of about 7.25. The San Francisco earthquake of 1906 caused the most significant damage in the history of the San Francisco Bay area in terms of loss of lives and property damage. This earthquake created a 400-kilometer surface rupture along the San Andreas fault from Shelter Cove to San Juan Bautista. It had a maximum MM intensity of XI, a  $M_w$  of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The most recent large earthquake to affect the Bay Area was the Loma Prieta earthquake of October 17, 1989 with a  $M_w$  of 6.9. The epicenter of this earthquake was in the Santa Cruz Mountains, approximately 68 kilometers southeast of the project site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated  $M_w$  for the earthquake is about 7.0. In 1861, an earthquake of unknown magnitude (probably a  $M_w$  of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill Earthquake ( $M_w = 6.2$ ).

In 1999, the Working Group on California Earthquake Probabilities (WGCEP, 1999) at the U.S. Geologic Survey (USGS) predicted a 70 percent probability of a  $M_w$  of 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2030. The WGCEP revised their estimate in 2003 to a 62 percent probability of a  $M_w$  of 6.7 or greater earthquake during the period of 2003 to 2032. WGCEP 2007 was commissioned to develop an updated, statewide forecast, the latest result of which is the Uniform California Earthquake Rupture Forecast (UCERF), Version 2.<sup>1</sup> Organizations sponsoring WGCEP 2007 include the USGS, CGS, and the Southern California Earthquake Center (SCEC). The comprehensive new forecast builds on previous studies and also incorporates abundant new data and improved scientific

<sup>&</sup>lt;sup>1</sup> USGS, CGS, SCEC, The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2), prepared by 2007 Working Group on California Earthquake Probabilities, 2008. Accessed by CAJA Staff at http://pubs.usgs.gov/of/2007/1437/of2007-1437\_text.pdf.

understanding of earthquakes.<sup>2</sup> The WGCEP 2007 estimate predicted a 63 percent probability of a  $M_w$  of 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2037. More specific estimates of the probabilities for select faults in the Bay Area are presented in Table IV.D-2.

Fault Segment	Probability (WGCEP, 1999) (percent)	Probability (WGCEP, 2003) (percent)	Probability (WGCEP, 2007) (percent)	
Hayward-Rodgers Creek	32	27	31	
San Andreas	21	21	21	
Calaveras	18	11	7	
San Gregorio	10	10	6	
Source: Treadwell & Rollo, 2003; USGS, CGS, SCEC, The Uniform California Earthquake Rupture Forecast, Version 2				
(UCERF 2), prepared by 2007 Working Group on California Earthquake Probabilities, 2008. Accessed by CAJA				
Staff at http://pubs.usgs.gov/of/2007/1437/of2007-1437_text.pdf.				

# Table IV.D-2WGCEP Estimates of 30-Year Probability of aMoment Magnitude (Mw) 6.7 or Greater Earthquake for Select Faults

#### **Ground Motion**

Ground motion is generated during an earthquake as two blocks of the Earth's crust slip past each other. In general, ground motion is greatest near the epicenter, increases with increasing magnitude, and decreases with increasing distance. However, the ground motion measured at a given site is influenced by a number of criteria, including depth of the epicenter, proximity to the projected or actual fault rupture, fault mechanism, duration of shaking, local geologic structure, source direction of the earthquake, underlying earth material, and topography.

Earthquake magnitude is a quantitative measure of the strength of an earthquake or the strain energy released by it, as determined by seismographic or geologic observations. Earthquake intensity is a qualitative measure of the effects a given earthquake has on people, structures, or objects, which varies to place to place within the area affected by the earthquake. Earthquake magnitude is measured on the Richter scale or as  $M_w$ , and intensity is described by the MM intensity scale. A related form of measurement is peak ground acceleration, which is a measure of ground shaking during an earthquake. Peak ground acceleration values are reported in units of gravity (g). Structures founded on thick soft soil deposits are more likely to experience more destructive shaking, with higher amplitude and lower frequency, than structures founded on bedrock. In addition, thick soft soil deposits at far distances from earthquake epicenters may result in seismic accelerations significantly greater than expected in bedrock. As a general rule, the severity of ground shaking increases with proximity to the epicenter of the

<sup>&</sup>lt;sup>2</sup> USGS, CGS, SCEC, Fact Sheet - Forecasting California's Earthquakes-What Can We Expect in the Next 30 Years?, 2008. Accessed by CAJA Staff at http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf.

earthquake. The Probabilistic Seismic Hazard Analysis (PSHA) from CGS estimates a peak horizontal ground acceleration at the site having a 10 percent probability of exceedance in 50 years to be 0.67g.<sup>3</sup>

Ground shaking is a seismic hazard that can cause damage to structures. As described above, several faults exist within close proximity of the project site. As such, the project site could be subjected to moderate to severe ground shaking in the event of a major earthquake on any of the faults referenced above or other faults in northern California. However, the risk of hazard associated with ground shaking at the project site is comparable to the risk experienced in the project area in general. This is common to virtually all developments in the greater San Francisco Bay Area.

Structures founded on thick soft soil deposits are more likely to experience more destructive shaking, with higher amplitude and lower frequency, than structures founded on bedrock. In addition, thick soft soil deposits far distances from earthquake epicenters may result in seismic accelerations significantly greater than expected in bedrock.

#### Fault Rupture

Ground surface rupture results when the movement along a fault is sufficient to cause a gap or break along the upper edge of the fault zone on the surface. Damage due to surface rupturing is limited to the actual location of the fault line break, unlike damage from ground shaking, which can occur at great distances from the fault. Per the M&A and T&R site analysis no evidence of surface features that are indicative of active faulting were observed at the site during review of aerial photographs and ground reconnaissance. Additionally, this analysis determined that the site does not lie within a Alquist-Priolo Earthquake Fault Zone and that the nearest mapped active fault to the site, the San Andreas Fault, is located approximately 1.6 kilometers to the southwest. Further, as discussed in the T&R (November 2003) report, based on a review of the Natural Hazards section of the General Plan, which states that with the exception of some right-lateral displacement on the trace of the San Andreas fault in 1906, surface rupture has not historically been a frequent occurrence in the county. Based on the sites location outside of an Earthquake Fault Zone and the lack of evidence for active faulting at the site, the fault rupture potential at the site is very low.

#### Liquefaction and Settlement

In addition to triggering landslides, strong ground shaking caused by large earthquakes can induce ground failures, such as liquefaction and cyclic densification. Liquefaction is a phenomenon in which saturated, cohesionless soil experiences a temporary loss of strength due to the buildup of excess pore water pressure, especially during cyclic loading such as that induced by earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand; however, low plasticity silts and clay can also liquefy. Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is densified by earthquake vibrations, causing ground surface settlement. A site's susceptibility to these

<sup>&</sup>lt;sup>3</sup> California Geological Survey, Probabilistic Seismic Hazards Mapping Ground Motion Page. Accessed by CAJA Staff at http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamap.asp on October 21, 2008.

hazards relates to the site topography, soil conditions, and/or depth to groundwater. These features are discussed in detail above.

The Geotechnical Hazard Synthesis Map for San Mateo County (1976) includes the project site in a zone described as having "poor to good earthquake stability". The degree of stability presumably depends on the inherent strength of the bedrock materials, which consist of serpentinite and melange in the designated zone. It is expected that the earthquake stability of the project site would be in the upper end of the specified range based on the presence of relatively strong sandstone bedrock. A compilation of ground failure occurrences induced by earthquakes in the region between 1800 and 1970 included no instances of historical earthquake-induced ground failure at the project site (Youd and Hoose, 1978).

Subsurface exploration by others shows that moderately hard to hard sandstone is present at depths less than 3 feet below the existing ground surface. Based on the shallow bedrock depths and presence of clay in the near-surface soil, the potential for liquefaction and cyclic densification at the project site is low.

#### Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel, or excavation. Generally in soils, this movement is due to failure along a weak plane, and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally toward the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Lateral spreading can occur within areas having potential for liquefaction. As discussed above, subsurface exploration shows that moderately hard to hard sandstone is present at depths less than 3 feet below the existing ground surface and hence it was determined that the potential for liquefaction is low, the potential for lateral spreading is also considered to be low for the project site during seismic events.

#### Landslides and Slope Instabilities

A planning-level hazard map prepared by the USGS in 1985 indicates the northeast slope of the knoll has a low susceptibility of failing during a major earthquake, while the remaining project site slopes have a moderate to high susceptibility. Historical landslide activity in the subdivision adjacent to the project site indicates Franciscan Complex melange in the site vicinity can be highly susceptible to landslides. For clarity, the discussion of landslide hazards has been divided into deep-seated landsliding, shallow landsliding, and temporary cut slope stability.

#### Deep-Seated Landslide Hazards

M&A concludes there are no indications of previous and existing deep-seated slope instability at the project site and that the risk of deep-seated slope failures developing in the future is low. However, deep-seated landslides have occurred in the project site vicinity. In 1983, a landslide occurred between Rainbow Drive and Starlite Drive, approximately 800 feet northwest of the project site. The north

boundary (headscarp) of the 1983 landslide extended into the back yards of several Starlite Drive properties and threatened several homes. Applied Earth Consultants (1983) concluded the 1983 landslide occurred as a result of oversteepening of the slope during mass grading for the subdivision in the 1950's/1960's, localized grading in 1979, and high rainfall during the two years preceding the landslide. Final repair and reconstruction of the slope was completed using engineered fill in 1985. Subsequently, a portion of the repaired slope failed again in February 1998, and required the installation of a pier and grade beam wall at the northwestern portion of the original slide repair.

In 1997, a landslide occurred between Polhemus Road and Rainbow Drive, approximately 1,200 feet northwest of the project site. The landslide threatened several residences and a large-diameter water supply pipeline, and destroyed a pier-and-grade-beam retaining wall installed behind the residences. Stabilization of the landslide consisted of a tie-back retaining wall and engineered fill. Prior to stabilization, interim measures for protecting the water pipeline included placing a temporary fill buttress in Polhemus Creek near Polhemus Road.

Despite the occurrence of deep-seated landslides in the project site vicinity, the project site shows no readily visible evidence of past deep-seated landsliding. This conclusion is supported by subsurface exploration completed by other consultants, and by the site reconnaissance and review of aerial photographs. The more stable condition of the project site slopes is attributed to the surrounding areas and to the presence of a single large (or multiple abutting smaller) sandstone blocks within melange bedrock beneath the project site. This bedrock condition contrasts with melange in the surrounding areas that has a substantial proportion of weak, sheared clayey matrix material that is more susceptible to slope failure.

#### Shallow Landslide Hazards

M&A observed shallow, limited extent soil slumps on pre-development aerial photographs, which were largely removed by site grading during the late 1950s. A relatively broad, shallow, bowl-shaped area was observed on the southwest slope. Test pits and exploratory borings performed within the bowl-shaped area encountered bedrock within a few feet from ground surface, and indicated the area is not a deep-seated landslide. Areas of active soil creep were observed in the 1946 aerial photographs along the northwestern and southwestern slopes. Virtually all of the observed creeping soil areas were removed by subsequent slope cuts made during construction of Bel Aire Road and Ascension Drive.

While any remaining native soil is subject to future surficial creep, it is expected that the rate of creep to be minor and typical of similar slopes in the San Francisco Bay area.

#### Temporary Cut Slopes

M&A (2002) stated that there are no adverse bedding and/or joint orientations in the bedrock underlying the project site, but measured only two fracture attitudes from the many test pits that were excavated around the project site. These attitudes were taken from the southwest slope of the knoll and are not adverse to the slope in that location. However, if the jointing were consistent across the project site, the orientation would be adverse on the northeast slope of the knoll. Because the approximate center of the

project site occupies the top of a knoll, with slopes in every direction, it is conceivable that adverse bedding and/or joints would be encountered at one or more locations at the project site. Any adverse bedding that exists would increase the potential for landsliding.

#### Expansive Soil

Expansive soils shrink or swell with changes in moisture content. Clay mineralogy, clay content, and porosity of the soil influence the change in volume. The shrinking and swelling caused by expansive clay-rich soil can result in damage to overlying structures. The NRCS Soil Survey describes soils in the site vicinity as loam, clay loam, and clay having a moderate to high shrink-swell potential. Project site soils encountered in studies by Terrasearch and M&A contained more sand and silt than reported by the NRCS. Furthermore, M&A reported a sample of colluvium collected from a depth of one foot below the ground surface had a very low plasticity index of 4 and a low liquid limit of 23. These data indicate a low shrink-swell potential for near-surface soils, which are consistent with colluvium derived from Franciscan sandstone bedrock.

#### Soil Erosion

The site reconnaissance and aerial photograph review show the on-site road cuts along Bel Aire Road and Ascension Drive to be heavily gullied (refer to Figure III-3 for a site reference). According to the NRCS Soil Survey, the soil conditions at the project site are likely to result in rapid to very rapid runoff with a high to very high potential for soil erosion. Considering the runoff conditions, soil conditions, and inclinations of on-site cut and natural slopes, the erosion potential for the existing slopes is high, especially at the steeper road cuts along Bel Aire Road and Ascension Drive.

#### **REGULATORY SETTING**

#### Federal

#### Federal Earthquake Hazards Reduction Act

In 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes through the establishment and maintenance of an effective earthquake hazards and reduction program. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The agencies responsible for coordinating NEHRP are the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF) and the USGS. In 1990 NEHRP was amended by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of the agency responsibilities, program goals, and objectives. The four goals of the NEHRP are as follows:

- Develop effective practices and policies for earthquake loss-reduction and accelerate their implementation;
- Improve techniques to reduce seismic vulnerability of facilities and systems;

- Improve seismic hazards identification and risk-assessment methods and their use; and
- Improve the understanding of earthquakes and their effects.<sup>4</sup>

#### State

#### Alquist-Priolo Earthquake Fault Zoning Act

Alquist-Priolo Earthquake Fault Zoning Act is the State law that focuses on hazards from earthquake fault zones. The purpose of this law is to mitigate the hazard of surface fault rupture by regulating structures designated for human occupancy near active faults. As required by the Act, the CGS has delineated Earthquake Fault Zones along known active faults in California.

#### California Building Standards Code

The California Building Standards Code applies to all occupancies throughout the State. However, City or County's may establish more restrictive building standards. The effective date of the 2007 CBC is January 1, 2008. The California Code of Regulations (CCR), also known as Title 24, California Building Standards Codes contain the laws regarding the construction of buildings. Title 24, Part 2 of the California Building Code (CBC) specifies standards for geologic and seismic hazards, other than surface faulting. Chapter 23 of the CBC addresses seismic safety, and includes regulations for earthquake-resistant design and construction.

#### Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1997 to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to map areas subject to seismic hazards. A geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design before a development permits will be granted. Additionally the Act requires a Standardized Natural Hazards Disclosure Statement form be completed by real estate sellers if a property is within one of the designated natural hazards areas.

#### Local and Regional

#### County of San Mateo General Plan

- 2.1 <u>Protect and Preserve Soil as a Resource</u>
  - Protect and preserve the availability and quality of soil as a resource for its ability to sustain healthy plant, animal, and human life within San Mateo County.

<sup>&</sup>lt;sup>4</sup> National Earthquakes Hazards Reduction Program. Accessed by CAJA Staff at http://www.nehrp.gov/ on June 6, 2006.

#### 2.2 <u>Minimize Soil Erosion</u>

• Minimize soil erosion through application of appropriate conservation practices.

#### 2.17 <u>Regulate Development to Minimize Soil Erosion and Sedimentation</u>

- Regulate development to minimize soil erosion and sedimentation; including, but not limited to, measures which consider the effects of slope, minimize removal of vegetative cover, ensure stabilization of disturbed areas and protect and enhance natural plant communities and nesting and feeding areas of fish and wildlife.
- 2.23 <u>Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil</u> <u>Erosion</u>
  - Regulate excavation, grading, filling, and land clearing activities to protect against accelerated soil erosion and sedimentation.

#### 2.25 Regulate Topsoil Removal Operations Against Accelerated Soil Erosion

- Regulate topsoil removal operations to protect against accelerated soil erosion and sedimentation through measures which ensure slope stabilization and surface drainage control.
- 2.29 Promote and Support Soil Erosion Stabilization and Repair Efforts
  - Promote and support efforts aimed at stabilization of ongoing soil erosion and repair of erosion caused land scars.

#### 15.20 Review Criteria for Locating Development in Geotechnical Hazard Areas

• Avoid unnecessary construction of roads, trails, and other means of public access into or through geotechnical hazard areas.

#### 15.24 Incorporate Geotechnical Concerns During Review of Proposals for New Development

• Incorporate geotechnical concerns into the review of proposals for new development through measures including but not limited to: siting and design of roads, grading, utilities, improvements and structures;

#### **ENVIRONMENTAL IMPACTS**

#### Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant geology/soils environmental impact if it would:

- a) Expose people or structures to potential, substantial adverse effects, including the risk of loss, injury, or death involving:
  - i. Rupture of a known 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 know fault.
  - ii. Strong seismic ground shaking.
  - iii. Seismic-related ground failure, including liquefaction.
  - iv. Landslides;
- b) Result in substantial soil erosion or the loss of topsoil;
- c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- d) Be located on expansive soil, as defined by the California Building Code, creating substantial risks to life or property; or
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section V.C (Impacts Found To Be Less Than Significant) of this DEIR, the potential impacts associated with Threshold (a.-i), (a.-iii), (d) and (e) listed above were determined to result in a less-than-significant impact. Therefore, only Thresholds (a-ii), (a.-iv), (b), and (c) listed above are addressed in the following discussion.

#### **Project Impacts and Mitigation Measures**

As discussed in Section III (Project Description), approximately 131,480 cubic yards (c.y.) of earth material would be graded for the proposed project on slopes averaging 40 percent (see Figure III-3). Specifically, the grading phase of the proposed project would require approximately 96,000 c.y. of cut material (with a maximum depth of 25 feet) and 35,480 c.y. of fill material (with a maximum depth of 10 feet). Approximately 60,520 c.y. of soil would be exported from the site to an off-site location.

Potential geologic and seismic hazards at the project site include seismic ground shaking, landslides & soil instabilities, and soil erosion.

## Impact GEO-1 Strong Seismic Ground Shaking

The project site is located in a seismically active region, and development of the proposed project would expose future users to seismic ground shaking. During the service life of the proposed project, the site is likely to experience at least one moderate to severe earthquake that could produce potentially damaging ground shaking. The probabilistic seismic hazard analysis from the CGS estimates a peak horizontal ground acceleration at the site having a 10 percent probability of exceedance in 50 years to be 0.67g. Seismic ground shaking could damage the proposed 25 homes and associated infrastructure. However,

the project applicant would be required to design and construct the project in conformance to the most recently adopted CBC design parameters. The parameters shown in Table IV.D-3 for the seismic design of the project were derived from Chapter 16 of the 2007 CBC.

CDC Seisinic Design Parameters for the Project		
Maximum Considered Earthquake (MCE) S <sub>s</sub>	$S_s = 2.18g$	
MCE S <sub>1</sub>	$S_1 = 1.23g$	
Site Class	Class B	
Site Coefficient F <sub>A</sub>	F <sub>A</sub> = 1.0	
Site Coefficient F <sub>V</sub>	F <sub>V</sub> = 1.0	
MCE spectral response acceleration parameters at short period, S <sub>MS</sub>	$S_{MS} = 2.18g$	
$\begin{array}{lll} MCE & spectral & response \\ acceleration parameters at one- \\ second period, S_{M1} \end{array}$	$S_{M1} = 1.23g$	
Design Earthquake (DE) spectral response acceleration parameters at short period, S <sub>DS</sub>	$S_{DS} = 1.45g$	
$\begin{array}{ccc} DE & spectral & response \\ acceleration parameters at one- \\ second period, S_{D1} \end{array}$	$S_{D1} = 0.82g$	
Source: Treadwell & Rollo, 2008.		

Table IV.D-3CBC Seismic Design Parameters for the Project

The CBC specifies that all proposed structures on the project site should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance with the current CBC requirements would reduce the potential for structures and infrastructure on the project site to sustain damage during an earthquake event therefore, project impacts related to ground shaking would be *less than significant* and no mitigation measures are required.

#### Impact GEO-2 Landslides & Soil Instabilities

#### Deep-Seated Landslide Hazards

It is expected that small localized areas of weak rock or sheared matrix material within the melange could be present at the project site. If slopes are not properly graded during site development, they could be subject to deep-seated failure where the localized "weak zones" extend beneath the sandstone. This concern is particularly relevant for the neighboring residences along the northeast project site boundary. The slope was previously cut steeply to create level back yards and proposed site grading includes placing fill in proximity to the cut slope. Therefore, project impacts related to deep-seated landslides would be *significant*.

#### Shallow Landslide Hazards

M&A concluded that a primary geotechnical consideration to increase the factor of safety with respect to shallow slope stability would involve the proposed repair of existing erosional features and improvement of drainage in these areas. It is anticipated that the proposed grading would remove most if not all of the remaining areas of active soil creep. Per T&R, if the deep soil, fill, or colluvium remains on-site, it may be susceptible to soil creep and small scale debris flows. Considering that relatively steep slope inclinations are planned for the new development, the project site could become susceptible to debris-flow type failures. Evidence of such failures was not observed in the aerial photographs. Although, the project would include the removal/repair of the existing drainage systems, as well as the development of an on-site storm drain system, consisting of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters (see Figures III-17 and III-18); however, unexpected changes in drainage from the proposed site development could result in concentrated storm water runoff onto the project site slopes. This runoff would have the potential to trigger debris-flow type landslides that could endanger neighboring streets and properties. Additionally, localized minor "sliver" fills associated with the remnant construction roads could also be susceptible to creep and/or failure. Therefore, project impacts related to shallow landslide hazards would be *significant*.

#### Temporary Cut Slopes

As discussed previously, it is conceivable that adverse bedding and/or joints would be encountered one or more locations at the project site. Any adverse bedding that exists would increase the potential for landsliding. The presence of adverse bedding and joints would be primarily a concern during construction when steep temporary cuts into rock may expose unstable slabs or wedges of bedrock. Therefore, project impacts related to slope instabilities due to adverse bedding in temporary cut slopes would be *significant*.

#### Hazards to Adjacent Properties

It should be recognized that while the project site bedrock conditions are relatively favorable from a deepseated landslide standpoint, bedrock conditions beneath the neighboring properties are unlikely to be as favorable. Although, the project would include the removal/repair of the existing drainage systems, as well as the development of an on-site storm drain system, consisting of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters (see Figures III-17 and III-18); it is possible that if runoff from the project site is not properly managed, the project could contribute surface and groundwater to the neighboring slopes, potentially resulting in slope and soil instabilities. Therefore, project impacts related to hazards to adjacent properties would be *significant*.

Overall, the project site is subject to geologic and soil instabilities. Without proper soil conditioning, site preparation, subsurface drainage, and foundation design, the structures and infrastructure at the project site could sustain substantial damage. Project impacts related to geologic and soil instabilities would be *significant*. The following mitigation measures would reduce Impact GEO-2 to a *less-than-significant* level:

#### Mitigation Measure GEO-2

- The applicant shall retain a qualified engineering geologist to observe all excavations for evidence of weak zones, adverse bedding and joints, within bedrock. Weak zones can be identified by: (1) adversely oriented bedding, joints or shears, or (2) the presence of sheared clayey material typical of the melange matrix. Any weak zones shall be evaluated to determine whether they present a potential zone for future landsliding based on planned final site grades and appropriate mitigation shall be included. Additionally, such zones shall be protected from groundwater derived from infiltrating rainfall, irrigation, and leaking pipes by installing appropriate subdrains and sloping surface grades.
- Where new fill slopes are planned on residential lots, the applicant shall retain a qualified engineering geologist to perform settlement and slope stability analyses to evaluate the static and seismic performance of the proposed sloped fill. Where encountered, the potential hazard posed by these conditions shall be evaluated from a standpoint of temporary and permanent slope stability. Also, the engineering geologist shall provide technical input and review surface and subsurface drainage plans and specifications for compliance with the geologist's recommendations.
- All unnecessary fill utilized during site grading shall be removed off-site after construction activities are completed.
- The applicant shall retain a qualified engineering geologist to provide technical input and review of the surface and subsurface drainage systems for the purpose of reducing the potential for adverse impacts, such as shallow and deep-seated landslides, on and adjacent to site. Common design issues that may required technical input include: (1) the location of surface and subsurface drainage alignments, especially within filled slopes, (2) selection of water discharge locations, (3) separation of surface and subsurface water collection pipes, (4) location of pipe cleanouts, and (5) recommendations for controlling groundwater flow through trench backfill.
- The site storm water drainage system (including individual systems for each residence) shall include redundancies to prevent discharge of uncontrolled runoff onto the site slopes in the event one or more components of the storm water system becomes clogged or otherwise incapacitated. Concentrated runoff shall not be allowed to flow over graded slopes or over areas of thick soil, colluvium or fill.

#### Impact GEO-3 Soil Erosion or Loss of Topsoil

As discussed previously, according to the NRCS Soil Survey, the soil conditions at the project site have high to very high potential for soil erosion. Without proper implementation of erosion control measures during construction and operation of the project, the project site could sustain substantial soil erosion and loss of topsoil.

As discussed in Section IV.E (Hydrology & Water Quality), the proposed storm drain system would consist of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters (see Figures III-17 and III-18). The proposed on-site pipeline system would include two separate storm drain pipelines that would be installed within the northern and southern portions of the site. Each individual lot would also have its own separate retention system comprising of a two large underground diameter pipes. Each lot retention system has been oversized in order to compensate for the runoff from the on-site private roadway (i.e., Lot "C"). This system will retain stormwater runoff in each lot prior to entering the existing off-site municipal storm drain system via Lines A or B. Two separate on-site continuous deflective separation (CDS) hydrodynamic separator runoff treatment devices would also be included as part of the drainage system. The project also would include the removal/repair of the existing drainage systems and eroded slopes on the site. Hence, the project would reduce the potential for erosion over the existing condition. Further, although the landscaping of the common areas/conservation areas is not determined at this time, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat, which would reduce the potential for erosion to occur over the lifetime of the project. However, without mitigation, project impacts related to soil erosion or loss of topsoil would be *significant*.

In addition to the measures outlined in Mitigation Measure GEO-2, the following mitigation measures would reduce Impact GEO-3 to a *less-than-significant* level:

#### Mitigation Measure GEO-3

One or more of the following methods shall be incorporated into the final site grading plan, subject to approval by the County Community Development Director:

- Excavate and remove materials affected by erosion in areas where the topography allows a cut to daylight at acceptable inclinations.
- Excavate a key at the base of the slope or resistant rock in the erosion area. Rebuild the slope with compacted, drained, engineered fill over a geogrid to allow for slope reconstruction at a steep inclination.
- Construct structural retaining walls or terrace walls in the erosion areas. A wall can be constructed at the top of the eroded area and then trim the erosional features away from below the wall.

Additionally, all of the following measures shall be implemented:

- Permanent erosion control measures shall be placed on all slopes, including all slopes shall be hydroseeded.
- The project geotechnical consultant shall be involved in reviewing the final grading and drainage plans, as well as perform construction observation services during grading to ensure that erosion control mitigation measures are performed. Based on the results of design-level investigations,

more aggressive permanent erosion control measures shall be evaluated to minimize surface runoff velocities and erosion potential. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared with the grading plans to fulfill regulatory requirements.

Although the abovementioned mitigation measures (i.e., Mitigation Measures GEO-2 and GEO-3) would reduce project impacts to less-than-significant levels, the following additional mitigation measure is recommended to further ensure that the proposed project remains in compliance with the abovementioned measures.

#### Mitigation Measure GEO-4

To ensure the applicant's geotechnical consultant are given the opportunity to participate in the final design and construction phases of the project, the applicant's consultant (Registered Geotechnical Engineer and Registered Engineering Geologist) shall review and approve the final grading, drainage, and foundation plans and specifications. Also, upon completion of construction activities, the applicant's consultant shall provide a final statement indicating whether the work was performed in accordance with project plans and specifications, and the consultant's recommendations. All mitigations and final design recommendations will be reviewed and approved by the County prior to issuance of applicable permits and approval of the Final Map.

## **CUMULATIVE IMPACTS**

Geotechnical impacts related to future development of the related projects listed in Table III-1 would involve hazards related to site-specific soil conditions, erosion, and ground shaking during earthquakes. The impacts on each site would be specific to that site and its users and would not be common or contribute to (or shared with, in an additive sense) the impacts on other sites. In addition, development on each site would be subject to uniform site development and construction standards that are designed to protect public safety. Therefore, cumulative geology & soils impacts would be *less than significant* and no additional mitigation measures are required.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the mitigation measures listed above and compliance with applicable State and local regulations would reduce project impacts related to geology & soils to a *less-than-significant* level.

## IV. ENVIRONMENTAL IMPACT ANALYSIS E. HYDROLOGY & WATER QUALITY

## INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) evaluates potential impacts of the proposed Ascension Heights Subdivision project ("proposed project") with regard to surface water hydrology. In addition, this section addresses the potential impacts of the proposed project with regard to surface water quality during construction and demolition, and longer-term operational phases of the proposed project. The following discussion presents the findings and conclusions of a third- party hydrological peer review conducted by Schaaf & Wheeler. This section analysis is based on the following reports (refer to Appendix G of the DEIR):

- *Hydrology Study: Ascension Heights Subdivision*, prepared by Lea & Sung Engineering, Inc., February 27, 2003;
- *Review of Hydrology Study for Ascension Heights Subdivision in San Mateo*, prepared by Schaaf & Wheeler, August 20, 2003;
- *Hydrology Study: Ascension Heights Subdivision*, prepared by Lea & Braze Engineering, Inc., October 17, 2006;
- Drainage Report, prepared by Lea & Braze Engineering, Inc., July 16, 2007;
- *Review of Revised Hydrology Study for Ascension Heights Subdivision in San Mateo*, prepared by Schaaf & Wheeler, September 18, 2008;
- *Hydrology Study for Ascension Heights memorandum(s)*, prepared by Lea & Braze Engineering, Inc., January 12, 2009 and January 19, 2009; and
- Additional Peer Review of Revised Hydrology Studies for Ascension Heights Subdivision in San Mateo County, prepared by Schaaf & Wheeler, January 21, 2009.

## METHODOLOGY

The methodology used to determine the environmental setting and impacts of the proposed project to hydrology and water quality included the following:

- review of previous hydrological reports prepared for the site;
- review of existing County and regulatory setting requirements related to hydrology & water quality;
- utilization of the Bay Area Hydrology Model (BAHM) to provide hydromodification calculations;

- site reconnaissance; and
- preparation of updated reports as a summary of findings, and to present preliminary conclusions and recommendations.

## **ENVIRONMENTAL SETTING**

#### Surface Water Hydrology

The 13.25-acre project site is approximately 8 miles from the Pacific Ocean. It is located in a relatively hilly area, approximately 3 miles away from the nearest mountain range. The site is situated on a hillside property along a ridge that slopes steeply (25 percent to 95 percent grade), to a gentler slope toward the top of the hill (or knoll); with average slopes at 40 percent. Surface elevation of the site ranges from approximately 410 to 610 feet above mean sea level (msl). This surrounding topography separates the closest jurisdictional water course, Polhemus Creek, from creeks and drainages that drain towards the San Francisco Bay. Crystal Springs Reservoir Dam is located approximately one mile to the northwest of the project site. Per the San Mateo County Dam Failure Inundation Areas Map, the project area is located just outside an inundation area; however, nearby roadways such Crystal Springs Road and Polhemus Road are at risk. In addition, according to the most recent FEMA Digital Q3 Flood Data Map, the project site is located outside the 100- and 500-year floodplain.<sup>1</sup> No waters of the U.S. or waters of the State were observed on the project site, including wetlands, streams, ponds, or lakes during site surveys. Additionally, no surface water, evidence of recent ponding, or areas dominated by wetland vegetation were observed (refer to Section IV.C, Biological Resources).

The Natural Resources Conservation Service (NRCS) Soil Survey describes soils in the site vicinity as loam, clay loam, and clay having a moderate to high shrink-swell potential. Project site soils encountered in studies by Terrasearch and Michelucci & Associates (M&A) contained more sand and silt than reported by the NRCS. Furthermore, M&A reported a sample of colluvium collected from a depth of one foot below the ground surface. Based on review of prior reports and site observations, Treadwell & Rollo, Inc. (T&R) concluded that the site is underlain by sandstone with no greenstone/sandstone contact present. Deep colluvium in swales on the southwest and northeast sides of the site and small scale debrisflow deposits in an area previously identified as "medium erosion gully" were also observed. Refer to Section IV.D (Geology & Soils) for a more detailed discussion on geology and soils.

The project site is relatively undeveloped with the exception of a potable water tank (owned by California Water Supply Company (Cal Water)) and cell site transmitter, enclosed by fencing and surrounded by Monterey pine trees, which are located at the top of the knoll.<sup>2</sup> Additionally, a paved service road extends

<sup>&</sup>lt;sup>1</sup> ESI and FEMA, Hazard Information and Awareness. Accessed by CAJA Staff at http://mapserver2.esri.com/cgi-bin/hazard.adol?s=0&c=-122.337673,37.537313&p=1&cd=z&d=0 on October 27, 2008..

<sup>&</sup>lt;sup>2</sup> These structures and the areas immediately surrounding the structures are not part of the proposed project.

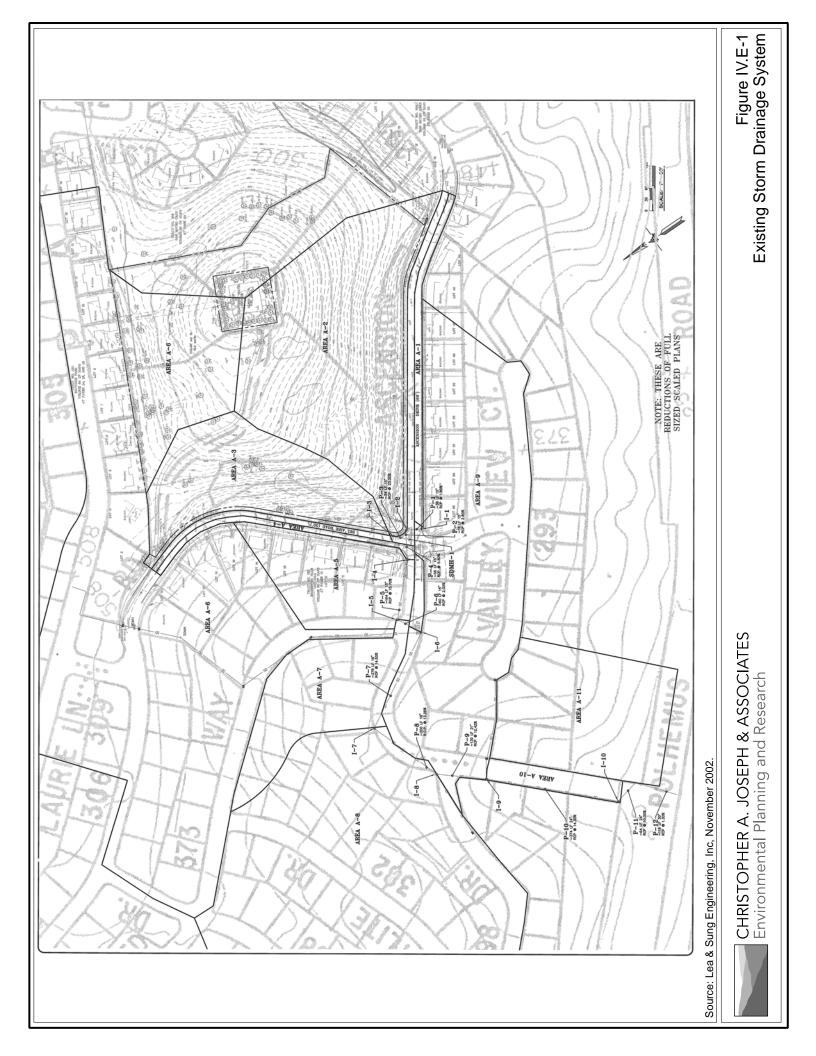
from Bel Aire Road at the site's northwestern boundary and provides access to the water tank and cell transmitter site. The site supports a variety of native and non-native grasses, shrubs, and trees. Additional land disturbances to the site include cut slopes and shelves along the lower slopes immediately and drainage structures above Ascension Drive and Bel Aire Road.

The drainage structures currently on the site were installed to help alleviate the severe erosion problems that occur on the site. However, these structures are no longer effective, and most runoff from the site drains overland and onto adjacent roadways and properties. Specifically, the existing runoff from the western and southern portions of the project site flows overland to the storm drains that are located in Bel Aire Road and Ascension Drive. Runoff from a small portion of the southeastern side of the site also flows to the storm drain in Ascension Drive. The eastern-northern side of the site currently drains into the yard areas of the houses on CSM Drive and Parrott Drive. Both of the storm drains in Bel Aire Road and Ascension Drive, as well as other storm drain lines in the surrounding areas to the northwest drain through a series of inlets into the main line, which follows Ascension Drive westward from the intersection of Ascension Drive and Polhemus Road and outfalls under Polhemus Road into Polhemus Creek (see Figure IV.E-1).

Detailed hydrology calculations for the existing drainage system are provided in Appendix G of this DEIR. The results of these calculations show that generally, the existing system is able to handle to current pre-development runoff, with the exception of two storm drain pipes. The 15-inch pipe that crosses Ascension Drive at Enchanted Way is sloped at 2 percent. Existing flows exceed capacity of this pipe by almost 20 percent, due primarily to its flat slope. The 30-inch outfall pipe that crosses Polhemus Road is also over capacity. This pipe is sloped at 1.3 percent and also has capacity problems due to its flat slope.

#### Groundwater Hydrology

During Terrasearch, Inc.'s analysis of the project site, free groundwater was not encountered in any of the test borings. However, moisture was noticed in Test Boring Number 7 at a depth of about 12 feet. Further, during R.C. Harlan & Associates (H&A) geotechnical site analysis, the depth to the groundwater table was not determined; however, per this report it was expected to be relatively deep, reflect the surface topography, and to fluctuate with precipitation. Similarly as part of Michelucci & Associates (M&A) 2002 site analysis, groundwater was not encountered in any of the borings. Per M&A, groundwater levels tend to fluctuate seasonally and could rise to depths explored in the future. Shallow, seasonal "perched" groundwater sometimes occurs in the topsoil layer when the soil is underlain by dense, less pervious, bedrock. M&A observed groundwater seepage from the base of weathered rock and above the less pervious rock along Ascension Drive. A portion of M&A's field investigation was conducted shortly following a rainfall period of approximately 2 days with precipitation on the order to 2 to 3 inches. During this investigation M&A observed active seepage of water from the toe of the cut slope adjacent to Ascension Drive and from the base of the weathered rock horizon (overlying less weathered rock) 1 to 2 feet below the ground surface. Per M&A, erosion occurs primarily within this



zone, and that groundwater, except possibly as relatively slow seepage, does not penetrate to greater depth (refer to Appendix F of the DEIR for more detailed information).

#### **REGULATORY SETTING**

#### Federal and State

#### California State Water Resources Control Board and Regional Water Quality Control Boards

The California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) have the authority in California to protect and enhance water quality, both through their designation as the lead agencies in implementing the Section 319 non-point source program of the federal Clean Water Act (CWA) and from the state's primary water-pollution control legislation, the Porter-Cologne Water Quality Control Act. The San Francisco Bay office of the RWQCB (Region 2) office guides and regulates water quality in streams and aquifers of the San Francisco Bay Area (Bay Area) through designation of beneficial uses, establishment of water-quality objectives, administration of the National Pollution Discharge Elimination System (NPDES) permit program for storm water and construction site runoff, and Section 401 water quality certification where development results in fill of jurisdictional wetlands or waters of the U.S. The Region 2 office and the Central Coast office (Region 3) of the RWQCB share jurisdiction in San Mateo County; however, it is the Region 2 office which has jurisdiction over the area of the project site.

#### San Francisco Bay Water Quality Control Plan ('Basin Plan')

The San Francisco Bay office of the RWQCB (Region 2) regulates water quality in the Bay Area in accordance with the Water Quality Control Plan or 'Basin Plan'.<sup>3</sup> The Basin Plan presents the beneficial uses, which the RWQCB has specifically designated for local aquifers, streams, marshes, rivers, and the Bay, as well as the water quality objectives, and criteria that must be met to protect these uses.

#### NPDES Municipal Stormwater Permit

The 1987 amendments to the CWA [Section 402(p)] provided for U.S. Environmental Protection Agency (U.S. EPA) regulation of several new categories of non-point pollution sources within the existing NPDES program. Phase I of the stormwater runoff program relied on NPDES permit coverage to address urban runoff discharges from "medium" to "large" municipal separate storm systems (MS4s) located in cities or counties with populations of 100,000 or more, from plants in industries recognized by the U.S. EPA as being likely sources of storm water pollutants, and from construction activities that disturb more than 5 acres. The U.S. EPA has delegated management of California's NPDES permit program to the SWRCB and the RWQCB. The Phase II Final Rule, published on December 8, 1999 was the next step in

<sup>&</sup>lt;sup>3</sup> Regional Water Quality Control Board, San Francisco Bay (Region 2), 2007, Water Quality Control Plan (Basin Plan) with Amendments, January 18. Accessed by CAJA Staff at http://www.waterboards.ca.gov/sanfranciscobay/basin\_planning.shtml on October 27, 2008.

the U.S. EPA's effort to preserve, protect, and improve water quality by expanding the Phase I program to require certain regulated small MS4s and construction activities that disturb 1 to 5 acres to implement programs and practices to control polluted stormwater runoff through NPDES permits. On March 10, 2003, new regulations came into effect that extended permit coverage to dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre of land, but are part of a larger common plan of development that in total disturbs one or more acres.

Dischargers of projects that disturb more than one acre of land during construction are required to submit a Notice of Intent (NOI) to the SWRCB and apply for coverage under the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. Administration of these permits has not been delegated to cities, counties, or RWQCB, but remains with the SWRCB. Construction activity subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of Best Management Practices (BMPs) to reduce or eliminate sediment and other pollutants in storm water, as well as non-storm water discharges. Required elements of a SWPPP include: (1) site description addressing the elements and characteristics specific to the site; (2) descriptions of BMPs for erosion and sediment controls; (3) BMPs for construction waste handling and disposal; (4) implementation of approved local plans; (5) proposed post-construction controls, including description of local post-construction erosion and sediment control requirements; and (6) non-storm water management. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a specified water body.

In addition to the NPDES permitting program, the RWQCB regulates water quality in the Bay Area in accordance with the Water Quality Control Plan or "Basin Plan."<sup>4</sup> As stated above, the Basin Plan presents the beneficial uses that the RWQCB has designated for significant surface waters, groundwaters, marshes, and mudflats, as well as the water-quality objectives and criteria that must be met to protect these uses. The Basin Plan does not identify Polhemus Creek as a significant surface water body.

Regional Water Quality Control Board, San Francisco Bay (Region 2), 2007, Ibid.

#### Local

#### San Mateo Countywide Stormwater Pollution Prevention Program (STOPPP)

The STOPPP is part of the NPDES permit issued to the San Mateo City/County Association of Governments (C/CAG)<sup>5</sup>, each incorporated city and town in the County, and the County of San Mateo. The CWA and the California Porter-Cologne Water Quality Control Act require that large urban areas discharging storm water into the San Francisco Bay or the Pacific Ocean have an NPDES storm water discharge permit. San Mateo, Santa Clara, Alameda, Marin, and Contra Costa Counties have each obtained these permits. Certain types of businesses must also apply for individual coverage by filing a NOI with the SWRCB. At this time, new residential subdivisions in San Mateo County are not required to apply for individual coverage.

#### Hydromodification Management Plan (HMP)

The RWQCB is interested in protecting creeks from excessive erosion and sedimentation caused by increases in flows associated with new development and redevelopment. On February 19, 2003, the RWQCB adopted an amendment to the San Mateo Countywide STOPPP NPDES Permit, Order No. 99-059, to incorporate specific new development and redevelopment requirements, including requirements for a Hydromodification Management Plan (HMP). The requirements apply to development projects that exceed certain thresholds of impervious surface area. Provision C.3.f of the NPDES permit, "Limitation on Increase of Peak Stormwater Runoff Discharge Rates," describes the HMP requirements. "The HMP will be implemented so that post-project runoff shall not exceed estimated pre-project rates and/or durations ..." Runoff controls are not required for projects where the potential for erosion, or other impacts to beneficial uses, is minimal.

The Draft HMP was submitted to the RWQCB staff on November 12, 2004, and the staff responded with a comment letter dated January 25, 2005. The letter provided additional direction regarding the completion of the Final HMP, and the letter's comments were clarified in a follow-up meeting held on February 23, 2005 with the RWQCB staff. At the February 2005 meeting, the RWQCB staff also expressed its support for using the currently planned Bay Area Hydrology Model (BAHM) for helping the municipalities to achieve a consistent and verifiable way to implement the HMP requirements. The May 12, 2005 Final HMP has been updated based on the RWQCB staff's comments on the November 12, 2004 Draft HMP. The Final HMP responds to the January 25, 2005 RWQCB letter and the direction provided

<sup>&</sup>lt;sup>5</sup> San Mateo City/County Association of Governments (C/CAG). Accessed by CAJA Staff at http://www.ccag.ca.gov/ on October 27, 2008.

C/CAG deals with issues that affect the quality of life in general; transportation, air quality, storm water runoff, hazardous waste, solid waste and recycling, land use near airports, and abandoned vehicle abatement.

by RWQCB staff at the abovementioned meeting.<sup>6</sup> The project location is in an area of San Mateo County that is non-exempt from the HMP.

#### Bay Area Hydrology Model (BAHM)

The BAHM is a tool for analyzing the potential hydrograph modification effects of land development projects and sizing structural solutions to mitigate the increased stormwater runoff from these projects. This software was developed for use in three counties in the San Francisco Bay Area: Alameda, San Mateo and Santa Clara. The BAHM incorporates local rainfall and climate data as well as calibrated model parameters for an internal modeling engine using Hydrologic Simulation Program - Fortran (HSPF). The software's input and reporting interfaces allow both project designers and municipal reviewers to check designs without previous experience with simulation modeling.

# **ENVIRONMENTAL IMPACTS**

#### **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant hydrology and water quality environmental impact if it would:

- (a) Violate any water quality standards or waste discharge requirements;
- (b) Substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- (c) 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 which would result in substantial erosion or siltation on- or off-site;
- (d) 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 which would result in flooding on- or off-site;
- (e) Create or contribute runoff water which would exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff;
- (f) Otherwise substantially degrade water quality;

<sup>&</sup>lt;sup>6</sup> San Mateo Countywide Storm Water Pollution Prevention Program, Hydromodification Management Plan (HMP), May 12, 2005. Accessed by CAJA Staff at http://www.flowstobay.org/documents/business/newdevelopment/HMP%20Report%20Final.pdf on October 27, 2008.

- (g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- (h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- (j) Expose people or structures to inundation by seiche, tsunami, or mudflow.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section V.C (Impacts Found to be Less Than Significant) of this DEIR, the potential impacts associated with Thresholds (g), (h), (i), and (j) listed above were determined to result in less-than-significant impacts. Therefore, only Thresholds (a), (b), (c), (d), (e) and (f) listed above are addressed in the following discussion.

# **Project Impacts and Mitigation Measures**

### Proposed Drainage Conditions

Based on an assumption of maximum allowable building footprint, Lea & Braze Engineering, Inc. estimated that the proposed project would create 198,198 square feet (4.55 acres) of impervious surface (2.25 acres of new roadway and sidewalk surface; 2.30 acres of new homes and driveways) and must therefore comply with C.3 Provisions. San Mateo County has regulatory authority to administer the permit and enforce its requirements.

The proposed storm drain system would consist of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters (see Figures III-17 and III-18). The proposed on-site pipeline system would include two separate storm drain pipelines (i.e., consisting mainly of smooth-walled high density polyethylene (HDPE) plastic) that would be installed within the northern and southern portions of the site (i.e., North [Line "A"] and South [Line "B"]). Line A would connect the individual drainage systems associated with Lots 1-10 and the water tank parcel (not part of the project) and convey the summation of stormwater into the northern treatment system (located along the main site entrance) before exiting the site via a new underground storm drain line along Bel Aire Road (refer to Figure III-17). Additionally, Line B would connect the individual drainage structures for Lots 11-25 and from the Emergency Vehicle Access (EVA) road for conveyance of stormwater into the southern treatment system (located near the southern project boundary adjacent to the EVA road and Ascension Drive) before exiting the site via a new pipeline running underground along Ascension Drive. The new off-site storm drain lines will connect into a common manhole at the intersection of Bel Aire Road and Ascension Drive. The system would then connect into the existing County storm drain system, following Ascension Drive down to Polhemus Road, with the treated runoff ultimately released into Polhemus Creek.

Each individual lot will have its own separate retention system comprising of a two large underground diameter pipes. Lots 1-10, 14-18, and 20 will have 2- to 24-inch diameter by 50-foot long retention pipes. Lots 11-13 and 21-25 will have 2- to 24-inch diameter by 60-foot long retention pipes. Lot 19 will have 2- to 36-inch diameter by 60-foot long retention pipes. Each lot retention system has been oversized in order to compensate for the runoff from the on-site private roadway (i.e., Lot "C"). This system will retain stormwater runoff in each lot prior to entering the storm drain system via Lines A or B. As stated above, two separate on-site continuous deflective separation (CDS) hydrodynamic separator runoff treatment devices would be included as part of the drainage system. These chambers are designed to remove as many pollutants as possible. The CDS requires a regular maintenance schedule to perform properly; it is anticipated that any Covenants, Conditions and Restrictions (CC&Rs) for the development will require a CDS maintenance agreement. As mentioned previously, the project site currently has extensive soil erosion on portions of the site. This surface erosion is proposed to be repaired as part of the project.

# Impact HYDRO-1 Violate Water Quality Standards, Waste Discharge Requirements or Degrade Water Quality

A significant impact may occur if a project discharges water that does not meet the quality standards of agencies, which regulate surface water quality and water discharge into storm water drainage systems. Significant impacts would also occur if a project does not comply with all applicable regulations with regard to surface water quality as governed by the SWRCB. These regulations include compliance with the NPDES, STOPPP and HMP requirements to reduce potential water quality impacts. Implementation of the proposed project could affect the quality of runoff from the project site.

#### Construction-Related Impacts

The proposed project has the potential to violate water quality standards or waste discharge requirements during the construction and demolition activities. Construction activities must meet the NPDES requirements for storm water quality and comply with all applicable regulations with regard to surface water quality as governed by the SWRCB. As discussed previously, the SWRCB mandates that projects that disturb one or more acres of soil or less than one acre, but are part of a larger development disturbing one or more acres must obtain coverage under the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit). The General Permit requires that prior to construction activity project applicants file a NOI with the SWRCB and prepare a project-specific SWPPP that incorporates BMPs to control erosion and to protect the quality of surface water runoff during the construction period. Because the grading and excavation required for the proposed project would involve a footprint of greater than one acre, the proposed project would be required to file an NOI and prepare a SWPPP. Water quality impacts during construction of the proposed project could occur from potential chemical spills associated with construction equipment.

Three general sources of short-term construction and demolition storm water pollution associated with the proposed project are: (1) the handling, storage, and disposal of construction and demolition materials

containing pollutants; (2) earth moving activities which, when not controlled, may generate soil erosion and soil transportation, via storm runoff or via mechanical equipment; and (3) the maintenance and operation of construction equipment.

#### Construction/Demolition Materials

The project construction site would contain a variety of construction materials that are potential sources of storm water pollution. Categories of such materials include: adhesives; cleaning agents; landscaping, plumbing, painting, heating/cooling, and masonry materials; floor and wall coverings; and construction debris. Construction material spills can be a source of storm water pollution and/or soil contamination, which would generate a potentially significant impact to water quality.

As stated above, and as described in Section III (Project Description) of this DEIR, the project applicant would prepare a SWPPP that incorporates BMPs to control erosion and to protect the quality of surface water runoff during the construction period. The SWPPP would identify which structural and nonstructural BMPs will be implemented, such as sandbag barriers, temporary desilting basins near inlets, gravel driveways, dust controls, employee training, and general good housekeeping practices.

Specifically, the following SWPPP BMPs are required to prevent construction/demolition debris from entering the storm drainage system.

- During construction and operation, all waste shall be disposed of in accordance with all applicable laws and regulations. Properly labeled recycling bins shall be utilized for recyclable construction materials including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and vegetation. Non-recyclable materials and wastes must be taken to an appropriate landfill. Toxic wastes must be discarded at a licensed, regulated disposal site by a licensed waste hauler.
- All leaks, drips and spills occurring during construction/demolition shall be cleaned up promptly and in compliance with all applicable laws and regulations to prevent contaminated soil on paved surfaces that can be washed away into the storm drains.
- If materials spills occur, they should not be hosed down. Dry cleaning methods shall be employed whenever possible.
- Construction/demolition waste containers shall be covered with tarps or plastic sheeting if left uncovered for extended periods. All waste containers shall be well maintained.
- The project owner/developer shall conduct street sweeping and truck wheel cleaning to prevent dirt in storm water.
- The project applicant shall provide regular sweeping of private streets and parking lots within the project site with equipment designed for removal of hydrocarbon compounds.

With the implementation of required BMPs listed above and regulatory compliance associated with the demolition of existing facilities, short-term impacts on water quality from construction materials would be *less than significant*.

#### Site Grading and Excavation

Soil erosion is the process by which soil particles are removed from the land surface by wind, water and/or gravity. Soil particles removed by storm water runoff are considered pollutants that if discharged to the storm drainage system eventually reach the Pacific Ocean and can have negative impacts on aquatic habitat. Grading activities can greatly increase erosion processes, which would generate a potentially significant impact to water quality.

However, the following SWPPP BMPs are required to prevent construction silt from entering the storm drainage system.

- The amount of exposed soil shall be limited and erosion control procedures implemented for those areas that must be exposed.
- Appropriate dust suppression techniques, such as watering or tarping, shall be used in areas that must be exposed.
- The area shall be secured to control off-site migration of pollutants.
- Construction entrances shall be designed to facilitate removal of debris from vehicles exiting the site, by passive means such as paved/graveled roadbeds, and/or by active means such as truck washing facilities.
- Truck loads shall be tarped.
- Roadways shall be swept or washed down to prevent generation of fugitive dust by local vehicular traffic.
- Simple sediment filters shall be constructed at or near the entrances to the storm drainage system wherever feasible.

In addition, all onsite grading and site preparation would comply with applicable provisions of San Mateo Ordinance Code, which addresses grading, excavations, and fills. With the implementation of the applicable grading and building permit requirements and the required BMPs listed above, short-term impacts on water quality from site grading would be *less than significant*.

#### Equipment Maintenance

Poorly maintained vehicles and heavy equipment that leak fuel, oil, antifreeze or other fluids are also common sources of storm water pollution and soil contamination on the construction site, which would generate a potentially significant impact to water quality.

However, the following SWPPP BMPs are required to prevent construction/demolition silt from entering the storm drainage system.

- All leaks, drips and spills occurring during construction shall be cleaned up promptly and in compliance with all applicable laws and regulations to prevent contaminated soil on paved surfaces that can be washed away into the storm drains.
- If materials spills occur, they should not be hosed down. Dry cleaning methods shall be employed whenever possible.
- The project applicant shall conduct truck wheel cleaning and truck washing to prevent dirt in storm water.
- The project applicant shall keep vehicles in good working order.

With the implementation of the required BMPs listed above, short-term impacts on water quality from equipment maintenance would be *less than significant*.

#### **Operational Impacts**

The proposed project has the potential to violate water quality standards or waste discharge requirements during operation. Urban runoff might include waste associated with typical residential uses including: motor oil; grease; paints; solvents; trace metals from pavement runoff; nutrients and bacteria from pet wastes; and landscape maintenance debris that may be mobilized in wet-season storm runoff from housing and roadway areas, parking areas, and in dry-season "nuisance flows" from landscape irrigation. Dry product spills could enter the storm drain via runoff in wet weather conditions or dry-season "nuisance flows."

As stated above, the RWQCB adopted an amendment to the San Mateo Countywide STOPPP NPDES Permit, Order No. 99-059, to incorporate specific new development and redevelopment requirements. The requirements apply to development projects that exceed certain thresholds of impervious surface area. Beginning in August 2006, any project that creates at least 10,000 square feet of impervious surface must comply with C.3 Provisions of the NPDES permit. In 2003, the San Mateo Countywide NPDES Municipal Stormwater Discharge Permit (NPDES Permit No. CAS0029921) was amended to include stricter requirements for post-construction stormwater control measures. New development projects such as the proposed project are required by the NPDES permit to incorporate site design, source control, and treatment measures to the "maximum extent practicable" and to use stormwater control measures that are technically feasible (likely to be effective) and not cost prohibitive. C.3 Provisions of the NPDES permit describe these requirements. Since more than 10,000 square feet of impervious surface would be created by the proposed project the project must comply with C.3 Provisions of the NPDES permit and incorporate various prescribed measures into the project design. Per the analyses conducted by Schaaf & Wheeler, the proposed on-site detention and drainage systems as described above (i.e., individual retention systems and CDS) may serve to meet C.3 Provisions.

Schaaf & Wheeler has also concluded that proposed site design measures would serve to alleviate potentially significant impacts, including the following:

- Preservation of existing trees and vegetation: Lot "A" is proposed by the applicant as a common/conservation area and preserves a significant number of the existing trees on-site;
- Using self-treated areas: Lot "A" would be left in its natural condition and storm water runoff treatment is not required for this drainage;
- Minimizing impervious surfaces: If maximum allowable building coverage is assumed for each lot, approximately 40 percent of the total site would be covered by impervious surface at build-out. While this percentage is higher than in the existing condition, it is reasonably comparable to existing development within adjacent neighborhoods; and
- Storing rainwater on-site: While rainwater would not be stored on-site indefinitely (e.g., in cisterns), "retention pipes" (actually detention pipes) are proposed to limit storm water runoff to existing rates.

Source control measures are applicable at the individual lot and house design stage, and are not expected to be addressed at this time. The use of alternative surfaces such as permeable pavements is beyond the scope of the applicant's project at this time, and would be left largely to individual lot owners. The use of alternative surfaces allowing infiltration would need to be balanced with erosion control issues on site as well. While passive storm water treatment measures such as bioswales, buffer strips, flow through planter boxes, infiltration trenches, extended detention, and bioretention may be preferred by the RWQCB, the use of a properly sized CDS treatment unit is an acceptable means of treatment, particularly if the applicant has discussed its use and maintenance with the County. Individual lot owners would likely be encouraged to incorporate storm water treatment features on-site. These issues shall be addressed at the Final Map design stage.

As discussed above, prior to obtaining a grading permit, the project applicant would be required to submit a SWPPP. The SWPPP would detail the treatment measures and BMPs to control pollutants and an erosion control plan that outlines erosion and sediment control measures that would be implemented during the post-construction phases of project development. In addition, the SWPPP would also describe the post-construction BMPs used to reduce pollutant loadings in runoff and percolate once the site is occupied (e.g., grassy swales, wet ponds, and educational materials) and would set forth the BMP monitoring and maintenance schedule and responsible entities during the post-construction phases. The RWQCB would enforce compliance with the SWPPP; therefore, project operation impacts related to water quality would be *less than significant*.

Although all construction-related and operational water quality impacts would be less than significant the following mitigation measure is included.

# Mitigation Measure HYDRO-1

In accordance with the State of California's General Permit for Construction Activities (General Permit) the applicant shall prepare a SWPPP. The SWPPP shall comply with the requirements of the General Permit and be incorporated into the construction documents. The SWPPP would provide specific information regarding BMPs for both the construction and post-construction stormwater management that would be incorporated into the project. As part of the coverage under the General Permit the applicant would file a NOI with the SWRCB within 30 days prior to the start of construction.

# Impact HYDRO-2 Substantially Deplete Ground Water Supplies or Substantially Interfere with Ground Water Recharge

A significant impact may occur if a project includes deep excavations resulting in the potential to interfere with groundwater movement, withdrawal of groundwater, or the paving of existing permeable surfaces that are located above groundwater basins. Based on an assumption of maximum allowable building footprint, Lea & Braze Engineering, Inc. estimated that the proposed project would create 198,198 square feet (4.55 acres) of impervious surface (2.25 acres of new roadway and sidewalk surface; 2.30 acres of new homes and driveways) and must therefore comply with C.3 Provisions.

As stated previously, free groundwater was not encountered at the site. However, moisture was noticed at a depth of about 12 feet. The depth to the groundwater table has not been determined; however, per H&A it is expected to be relatively deep, reflect the surface topography, and to fluctuate with precipitation. Per M&A, groundwater levels tend to fluctuate seasonally and could rise to depths explored in the future. Shallow, seasonal "perched" groundwater sometimes occurs in the topsoil layer when the soil is underlain by dense, less pervious, bedrock. M&A observed groundwater seepage from the base of weathered rock and above the less pervious rock along Ascension Drive. After a rainfall period of approximately 2 days active seepage of water from the toe of the cut slope adjacent to Ascension Drive and from the base of the weathered rock horizon (overlying less weathered rock) 1 to 2 feet below the ground surface was observed by M&A. Per M&A, erosion occurs primarily within this zone, and that groundwater, except possibly as relatively slow seepage, does not penetrate to greater depth.

There are no aquifers below the site or in the vicinity of the site. The proposed project does not propose any groundwater wells or pumping activities. Potable water demands created by the project would be served by Cal Water, which is ultimately supplied by the Hetch Hetchy reservoir. Therefore, project impacts would be *less than significant* and no mitigation measures are required.

### Impact HYDRO-3 Alteration of Drainage Patterns Resulting in Erosion or Siltation

The term "hydromodification" refers to the vulnerability of stream channels to increased flow peaks and/or durations of peak runoff associated with urbanization and related land uses, which collectively can cause channel incision, channel widening, increased sediment transport and degradation of riparian corridors and associated wetlands or habitats. Erosion and sedimentation are typically of greatest potential concern during the project construction-phase. After a project has been built and the landscaping has been installed, erosion from residential development sites is usually minimal.

### Hydromodification Management Plan (HMP)

As part of the project analysis, the Lea & Braze Engineering, Inc. ran the BAHM for the proposed project to produce HMP calculations in order determine the associated hydromodification impacts. Lea & Braze Engineering, Inc. indicated that the new development would increase runoff by less than one percent. Lea & Braze Engineering, Inc. concluded that hydromodification due to site development would not be a significant problem and that implementing a mitigation plan would be cost prohibited and technically problematic. As part of the DEIR, Schaaf & Wheeler peer reviewed this information, conducted a separate BAHM and concurred with their findings based on the following conclusions.

Polhemus Creek is the nearest receiving water where potential hydromodification is of concern. The creek is a quarter mile away from the project and all of the project's offsite runoff is conveyed to the creek through hardened drainage elements such as pavement, gutters, and storm drain pipe. The BAHM was used to analyze pre-project and post-project flow-duration curves at the Polhemus Creek outfall from the County storm drain system to which the proposed development would connect. At this location, approximately 811 acres are tributary to Polhemus Creek, including the 13.25-acre project site, which represents 1.6 percent of the tributary watershed. Figure IV.E-2 shows the watershed area analyzed.

The watershed contains various soil types and land uses that were inputted into the BAHM and then changed based on how the proposed development affects the model parameters. Table IV.E-1 provides a summary of the BAHM parameters utilized. It is noted that the watershed is estimated to be approximately 35 percent impervious in its existing condition. SCS Hydrologic Soil Types are calculated using data from the NRCS National Cooperative Soil Survey (Web Soil Survey 2.1) for San Mateo (Eastern Part) and San Francisco Counties.

BAHM Input				
BAHM Parameter	Pre-Project (acres)	Post-Project (acres)		
Forest Cover on B Soil	341.0	341.0		
Shrub Cover on C or D Soil	186.0	181.5		
Impervious Cover	284.0	288.5		
Total	811.0	811.0		
Source: Additional Peer Review of Revised Hydrology Studies for Ascension Heights Subdivision in San Mateo County, prepared by Schaaf & Wheeler, January 21, 2009.				

Table IV.E-1 BAHM Input



Source: Schaaf & Wheeler, January 2009.

CHRISTOPHER A. JOSEPH & ASSOCIATES Environmental Planning and Research

# Figure IV.E-2 Watershed Analyzed for Hydromodification Impacts

Table IV.E-2 presents BAHM output for the location of interest, as well as the corresponding flowduration curves are shown in Figure IV.E-3. The approximate average increase in flow is about 0.2 percent. Most development is on rock (orthents). BAHM lumps Type C and Type D soils together, which makes the BAHM results conservative considering that orthents are usually less pervious than typical C or D soils. If BAHM had an option for rock instead of C/D soil, the calculated increase in flow might be even less. In reality, if top soil is imported for landscaping purposes, improvements on individual lots could potentially further mitigate the very small calculated increase in post-developed flows.

#### Table IV.E-2 BAHM Output

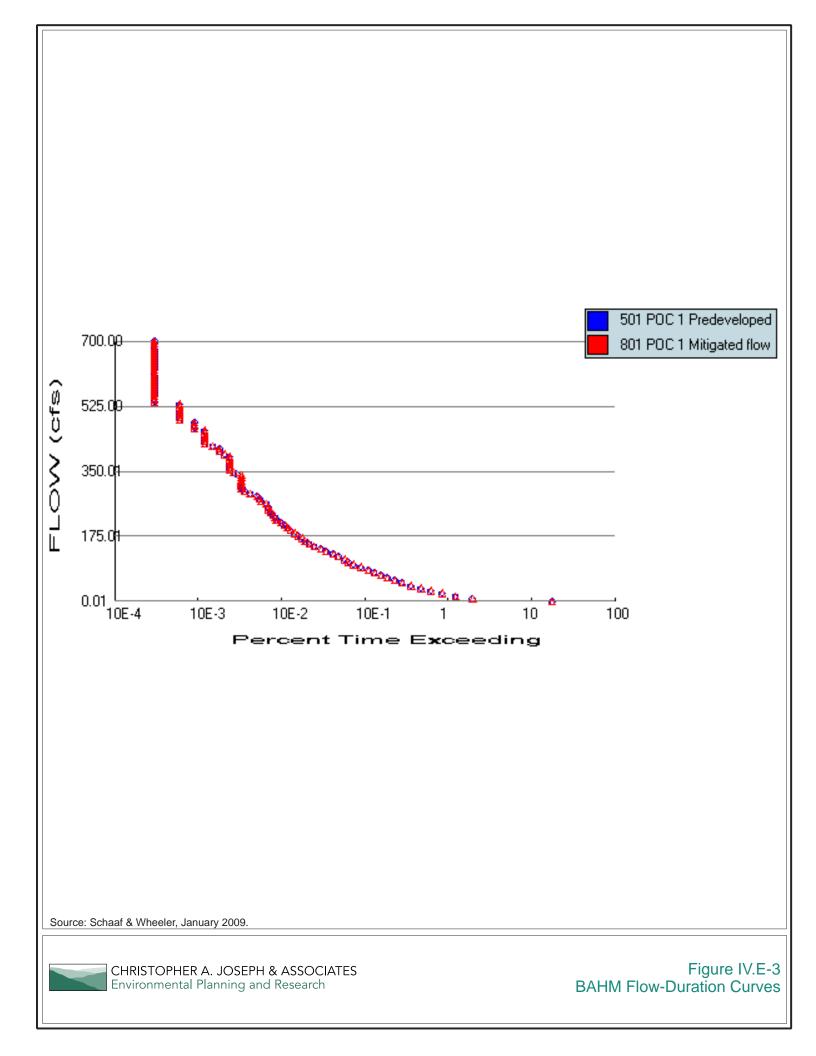
Return Period	Polhemus Creek Discharge (cfs)	
	Pre-Project	Post-Project
2-Year	182.0	182.3
5-Year	359.1	359.8
10-Year	421.4	422.4
25-Year	630.5	631.1
<i>Note: cfs = cubic feet per second</i>		

Source: Additional Peer Review of Revised Hydrology Studies for Ascension Heights Subdivision in San Mateo County, prepared by Schaaf & Wheeler, January 21, 2009.

The Municipal Regional Permit Tentative Order (NPDES No. CA S612008; December 4, 2007) states that "the post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control," which is from 10 percent of the two-year flow to the ten-year flow. For the proposed project, the post-project flow duration curve does not exceed the pre-project flow curve by an average of more than 0.2 percent over the entire length of the curve corresponding to the range of flows to control. While not explicitly meeting the NPDES requirements, the proposed development clearly has little impact on Polhemus Creek hydromodification.

Further, it is noted that the Central Coast RWQCB is adopting criteria that requires no more than a one percent increase in the post-project flow duration curves from the one-year to the ten-year return periods. The "one-year" flow is equivalent to the flow that is exceeded one hundred times in one hundred years based on partial-duration analysis. A technique derived by Walter Langbein can be used to transform a frequency curve derived from annual events into a corresponding partial duration curve.<sup>7</sup> Based on the Langbein criteria, the "one-year" annual return period based on the flood-frequency analysis presented in Table IV.E-2 is about 130 cubic feet per second (cfs) or about 72 percent of the two-year flow. Therefore if the average increase in flow from 10 percent of the two-year flow to the ten-year flow is less than one percent (0.2 percent is less than one percent), it is less than one percent from the one-year flow to the ten-year flow.

<sup>&</sup>lt;sup>7</sup> Beard, Statistical Methods in Hydrology, 1966.



San Mateo County offers an HMP exemption where the cost of plan implementation is greater than two percent of the total project cost. Lea & Braze Engineering, Inc. cites a "tremendous amount of money" as the cost to implement, and Schaaf & Wheeler agree with this conclusion. Alternatives such as allowing runoff to percolate or the construction of surface storage facilities pose a public safety threat due to the steepness of the site and slope stability issues. Therefore, the only possible implementation alternative would be an underground horizontal pipe. Lea & Braze Engineering, Inc. found the longest required pipe length to be 840 feet. The entire project site is about 700 feet by 700 feet, with a total change in elevation across the site (to the drainage outlet) of more than 100 feet. Installing a buried system would not be feasible. Hence, the applicant is proposing to request a HMP exemption from the County.

### Drainage Patterns On-Site and Vicinity

The existing drainage patterns on the project site and vicinity would be altered by the proposed drainage improvements. The proposed project would be developed in areas where runoff currently flows overland and currently drains to the west and south to the existing storm drain system in Bel Aire Road and Ascension Drive or into the yard areas of the houses located downslope from the project site on the north and east. As described in detail above under the Proposed Drainage Conditions discussion, the proposed storm drain system would consist of County-approved underground pipes, inlets, drainage structures and retention systems, and concrete valley gutters (see Figures III-17 and III-18). As such, runoff that currently flows overland, uncontrolled, would be redirected into the proposed drainage system, thereby reducing the potential for erosion over the existing condition. Furthermore, per County standards, no grading shall be allowed during the winter season to avoid potential soil erosion unless approved, in writing, by the County Community Development Director. Per Section 8605.5 of the County Grading Ordinance, the period from October 15 to April 15 has been determined to be the period in which heavy rainfall normally occurs in the County. During this period, no land disturbing activity would be authorized under a permit if the Community Development Director determines that such work will endanger the public health or safety or cause excessive erosion.

Additionally, as mentioned previously, the project site currently has extensive soil erosion on portions of the site. This surface erosion is proposed to be repaired as part of the project. The new valley gutters and storm drain infrastructure would be designed and constructed to take a significant amount of runoff away from these areas and thus, prevent future erosion. The proposed storm drainage infrastructure would improve site conditions relative to erosion.

Therefore, project impacts to alteration of drainage resulting in erosion/siltation, or hydromodification would be *less than significant* and no mitigation measures are required.

# Impact HYDRO-4 Create or Contribute Runoff Water Which Would Exceed the Capacity of Existing or Planned Storm Drain Systems

By increasing the amount of impervious area, development of the proposed homes and roadways would increase the volume and peak rate of surface runoff at the project site. According to studies conducted by Lea & Braze Engineering, Inc. for the proposed project, the proposed on-site drainage has adequate

capacity to accommodate a 10-year storm event. Hence, the proposed storm drain system would be designed to be capable of accommodating 10-year runoff. However for CEQA analysis, the generally accepted threshold for impact analysis is a 100-year return period. Lea & Braze Engineering, Inc. did not provide post-development calculations for the 100-year storm event, including discharge to Polhemus Creek; therefore, as part of the DEIR analysis Schaaf & Wheeler provided 100-year calculations based on the 10-year spreadsheets provided by the Lee & Braze Engineering, Inc. in their 2006 Hydrology Study (refer to Appendix G for calculation sheets).

Under existing conditions the 100-year discharge to Polhemus Creek would be 73 cfs with a velocity of 14.9 feet per second (fps) at the outfall. Capacity in the existing County storm drain system would be exceeded at two locations (refer to "P-6" and "P-12" within the Additional Peer Review of Revised Hydrology Studies for Ascension Heights Subdivision in San Mateo County prepared by Schaaf & Wheeler on January 21, 2009; Appendix G). The total estimated flow in excess of pipe capacity is 28 cfs. The applicant proposes to upsize these two storm drain segments, from 15-inch diameter to 21-inch diameter and from 30-inch diameter to 36-inch diameter, as mitigation. Post-developed 100-year storm drain capacity calculations include these proposed storm drain upgrades. A simplified volumetric calculation was used to model the effect of the applicant's proposal to store excess stormwater runoff storage and meter the release at individual home sites.

Once the proposed project is developed, the 100-year discharge to Polhemus Creek would be 72 cfs with a velocity of 10.2 fps at the outfall. Improved storm drain capacity would be exceeded at one location labeled "P-C9", but only by 0.5 cfs. The total estimated flow in excess of pipe capacity would drop from 28 cfs to almost zero. (It may be noted that by upsizing the existing 18-inch storm drain at this location to a 21-inch storm drain, estimated flow would not exceed storm drain capacity.) Very high flow velocities are predicted for both the 10-year and 100-year events, so precautions to protect against pipe damage and scour at the Polhemus Creek outfall should be incorporated as part of the final design.

Overall, project impacts related to exceedance of storm drain capacity would be *potentially significant*.

The following mitigation measure would reduce Impact HYDRO-4 to a *less-than-significant* level:

#### Mitigation Measure HYDRO-4

- The project applicant shall replace the existing 15-inch pipe that crosses Ascension Drive and Enchanted Way with a new 21-inch storm drain pipe; and
- The project applicant shall replace the existing 30-inch outfall that crosses Polhemus Road with a 36-inch pipe sloped at 2 percent.

# **CUMULATIVE IMPACTS**

Development of the proposed project in conjunction with construction activities, increased impervious surfaces, and alterations to drainage patterns associated with other development in the vicinity of the project site would increase impervious surface coverage in the watershed in which the project is located,

could increase storm water runoff, could contribute to flooding, and could provide substantial sources of polluted runoff, affecting receiving water quality. The project applicants of all the related projects listed in Table III-1 would be required to comply with Phase II NPDES Municipal Storm Water Permit requirements for small municipalities in order to minimize the contribution of sediment and other pollutants associated with development in the region. Comprehensive SWPPPs and monitoring programs would be required to be implemented by all storm water dischargers associated with specified industrial and construction activities, in compliance with the State's General Permits. Such plans would include BMPs or equally effective measures that reduce the potential for those projects to result in water quality impacts during construction and long-term operation.

The project site is located within an area that is almost entirely surrounded by development. Of the 22 related projects listed in Table III-1, only one of the projects (the Water Supply Pipeline Improvement project) is located within the same drainage area as the proposed project. This includes development of a tunnel beneath Polhemus Road from Crystal Springs Road to Bunker Hill Drive to improve water delivery via the Crystal Springs Bypass Pipeline that was partially buried in the winter of 1996/1997. Given that this project would be developed beneath the existing roadway, the tunnel would not result in an increase in impervious surface and would not result in an increase in runoff.

With implementation of the mitigation measures prescribed above, project-specific impacts to exceedance of storm drain capacity would be less than significant. Given the developed nature of the area, the future volume and velocity and peak flow of runoff affecting the storm drain system that would be used by the proposed project would not change substantially beyond that calculated for post-project conditions. For the reasons stated above, cumulative impacts to hydrology and water quality would be *less than significant* and no mitigation measures are required.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

Hydrology and water quality impacts would be *less than significant*.

# IV. ENVIRONMENTAL IMPACT ANALYSIS F. LAND USE & PLANNING

# INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of land use and planning with respect to the proposed Ascension Heights Subdivision project ("proposed project"). The Land Use & Planning section describes the existing land use setting and uses of the project site and adjacent areas. It includes the identification of current General Plan policies and zoning designations. The purpose of this section is to provide the environmental and regulatory background necessary to analyze potential impacts to land use associated with the proposed project.

# METHODOLOGY

The impacts of the proposed project on land use were analyzed qualitatively, focusing on consistency between planned and permitted uses under applicable land use plans and zoning regulations. The determination of compatibility is based on the anticipated environmental effects of proposed uses and the sensitivity of adjacent uses to those effects. The evaluation assesses the consistency of the proposed project with the policies of the County of San Mateo General Plan and the County of San Mateo Zoning Regulations.

# **ENVIRONMENTAL SETTING**

# **Project Site and Surrounding Areas**

The 13.25-acre project site is located at the eastern corner of Bel Aire Road and Ascension Drive, within the San Mateo Highlands area of unincorporated San Mateo County (see Figure III-1). The site is characterized as a hillside property with slopes that range from nearly flat on top of sites ridge to 1.5 to 1 (horizontal to vertical) on the flanks, most between 2 to 1 and 3 to 1. A potable water tank and cell site is located at the top of the hill. This area of the site is owned by the California Water Service Company (Cal Water) and is not a part of the proposed project. The project site is relatively undeveloped with the exception of a paved service road that extends from Bel Aire Road at the sites northwestern boundary, providing access to the water tank parcel. Vegetation on-site includes native and non-native trees, grassland and shrubs.

Single-family residential homes immediately bound the project site to the north and east; with Ascension Drive to the south and Bel Aire Road to the west. The predominate land uses surrounding the site include single-family neighborhoods, including Baywood Park neighborhood to the northeast, the Enchanted Hills neighborhood to the southeast and southwest, and the Starlite Heights neighborhood to the northwest. The College of San Mateo is located less than 0.25-miles northeast of the project site, immediately east of Parrott Drive.

## Land Use Designation and Zoning

#### County of San Mateo General Plan

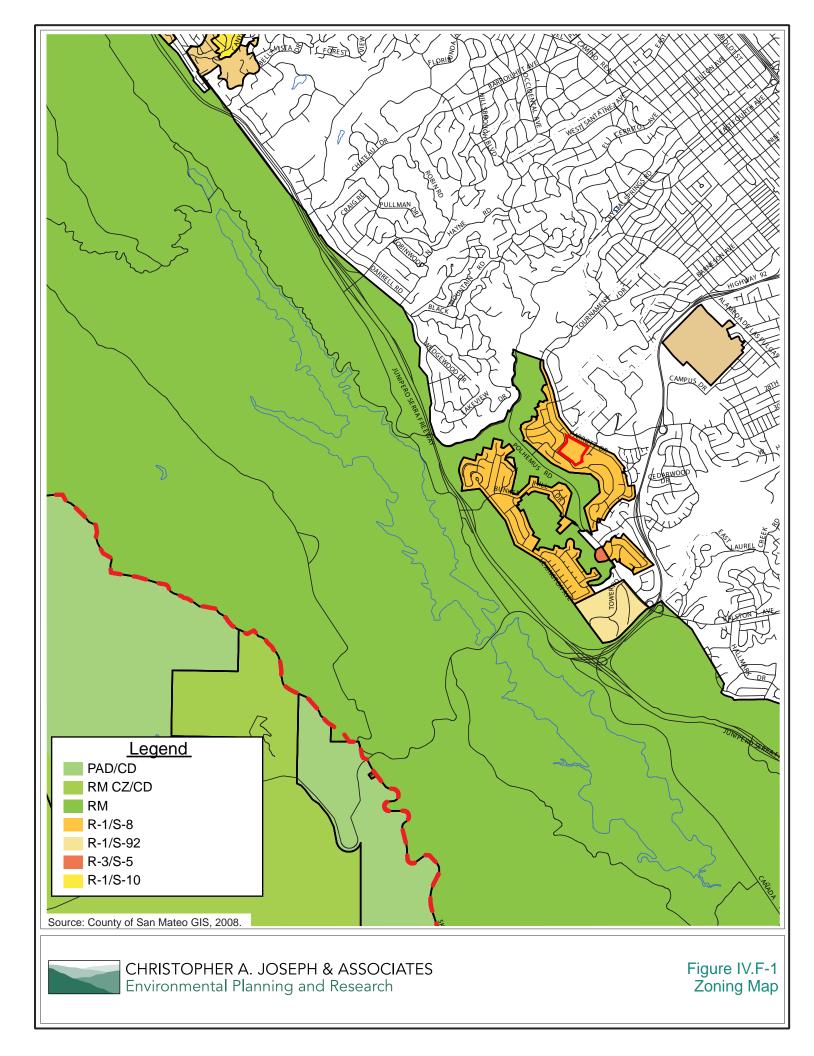
According to the County of San Mateo General Plan, the project site is located in area considered an "Urban Neighborhood," which is defined as a single-family residential area that appears and functions as a residential neighborhood of contiguous cities. The General Plan land use designation for the project site is Medium Low-Density Residential, which allows the development of 2.4 to 6.0 dwelling units (du) per net acre (du/acre). The criteria for this land use designation are as follows:

- Existing medium low density areas;
- Hillside areas with steep slopes;
- Adjacent to sensitive habitats;
- Hazardous areas; and/or
- Not within areas of high perceived noise levels.

# County of San Mateo Zoning Regulations

The project site is zoned one-family residential district (R-1) and residential density district Number 8 (S-8), which allow for the following uses (refer to Figure IV.F-1):

- One-family dwellings;
- Public parks and playgrounds;
- Crop and tree farming and truck gardening;
- Home occupations;
- Accessory buildings and accessory uses appurtenant to a residential use provided; however, that such accessory buildings shall not be constructed until the main building shall have been constructed;
- Keeping of pets in association with a one-family dwelling;
- Limited keeping of pets in association with a second unit;
- Animal Fanciers in association with a one-family dwelling, subject to an animal fanciers' permit issued in accordance with County Ordinance Code, Division III, Part Two, Chapter 6.3;
- Catteries in association with a one-family dwelling, subject to a kennel/cattery permit issued in accordance with County Ordinance Code, Division III, Part Two, Chapter 12;



- Reverse vending machines at public facilities;
- Small collection facilities for recyclable materials at public facilities, subject to obtaining a building permit, provided that there is no additional mechanical processing equipment on site, that collection facilities shall not be located within 50 feet of a residence, nor decrease traffic or pedestrian circulation or the required number of on-site parking spaces for the primary use, and all litter and loose debris shall be removed on a daily basis; and/or
- Large Residential Day Care Facilities for Children (Family Day Care Homes; 7 to 12 children), subject to a large family day care permit issued in accordance with the County Zoning Regulations, Chapter 22, Section 6401.2.

# Development Regulations

The following development standards set forth in the County of San Mateo Zoning Regulations apply to the R-1/S-8 Districts:

Average Width: 50 feet (ft)
Minimum Lot Area (per du): 7,500 square feet (sf)
Front Yard Setback: 20 ft
Side Yard Setback: 5 ft
Backyard Setback: 20 ft
Height: 3 stories or 36 ft

Maximum Coverage: 40 percent

*Parking*: Two spaces per du; each off-street parking space shall have an area of not less than 171 sf exclusive of access drives or aisles, and shall be of usable shape, location, and condition. There shall be adequate provision for ingress and egress to all parking spaces. Parking spaces required in connection with residential uses shall be provided in private garages, carports, or storage garages located on the same building site as the main building.

# San Mateo County Service Areas (CSA)

The County Service Area (CSA) #1 provides contract management ensuring enhanced police and fire protection services for the residents of the unincorporated area west of the City of San Mateo and east of Interstate 280 (I-280) by providing Sheriff's patrol units, emergency and non-emergency response, fire prevention, public education, fire safety planning, community support activities, station and equipment maintenance and training. Enhanced police and fire protection services are funded through property taxes, as well as a special supplemental parcel tax, which must be approved by the voters every four

years. Original boundaries of CSA #1 were drawn to encompass the original Thomas Subdivision (current known as Ascension Heights Subdivision); however, a small portion of the proposed project is not within the CSA boundaries (refer to Figure III-11). If all homes to be constructed are to receive the same level of police and fire protection, the highlighted territory would need to be annexed to CSA #1, so that CSA #1 has both the jurisdiction and the funding to provide such service. Annexation would require application to Local Agency Formation Commission (LAFCO).

### San Mateo County Lighting Districts

San Mateo County Public Works provides street lighting for San Mateo County residents and businesses through street lighting districts. Public Works personnel maintain and service the fixtures on both PG&E and County owned poles. PG&E provides electricity and an electrical connection to each street light. PG&E is paid a fixed monthly fee for electrical energy to these fixtures. District revenue is provided by an annual assessment on tax bills for properties located in County Lighting Districts.<sup>1</sup> The closest lighting district to the project site is the Bel Aire Lighting District. The applicant proposes to annex the project site into the Bel Aire Lighting District. Annexation would require application to LAFCO.

# **REGULATORY SETTING**

#### **Federal and State**

### Bay Area Clean Air Plan

The project area is within the San Francisco Bay Area Air Basin, under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD is responsible for bringing and/or maintaining air quality in the Basin within federal and State air quality standards. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement attainment strategies to ensure that future emissions will be within Federal and State standards.

The BAAQMD has prepared a series of Clean Air Plans (CAP) in response to the Federal Clean Air Act (CAA), the most recent and rigorous of which was approved in December 2000. The 2000 CAP continues the air pollution reduction strategy established by the 1991 CAP. The 2000 CAP is the third triennial update to the 1991 CAP, following previous updates in 1994 and 1997. The 2000 CAP is designed to address attainment of the State standards for ozone ( $O_3$ ). The BAAQMD is beginning the process to prepare the 2009 Bay Area CAP.<sup>2</sup> The 2009 Bay Area CAP will:

<sup>&</sup>lt;sup>1</sup> San Mateo County Public Works Department, Lighting Districts. Accessed by CAJA Staff at http://www.co.sanmateo.ca.us/smc/department/home/0,,5562541\_9876731\_12120794,00.html on October 28, 2008.

<sup>&</sup>lt;sup>2</sup> Bay Area Air Quality Management District (BAAQMD), 2009 Clean Air Plan. Accessed by CAJA Staff at http://www.baaqmd.gov/pln/plans/ozone/ on October 21, 2008.

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement "all feasible measures" to reduce O<sub>3</sub>;
- Consider the impacts of O<sub>3</sub> control measures on particulate matter, air toxics, and Greenhouse Gases (GHG) in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2009 2012 timeframe.

This DEIR analysis utilizes the 2000 adopted CAP. The 1997 CAP contained stationary and mobile source control measures, which included: developing rules to reduce vehicle trips to and from major residential developments, shopping centers, and other indirect sources; encouraging cities and counties to plan for high density development; and clustering development with mixed uses in the vicinity of mass transit stations. The 2000 CAP includes changes in the organization and scheduling of some existing control measures, some new stationary source control measures, revisions to previous stationary source measures, and deletion of some control measures no longer deemed feasible by BAAQMD staff. The transportation control measures (TCMs) are unchanged from the 1997 CAP. The 2000 CAP continues to discourage "urban sprawl," while strongly endorsing high-density mixed-use developments near transit centers that reduce the need for commuting by personal vehicles.

# San Francisco Bay Water Quality Control Plan ('Basin Plan')

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was developed by the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. The Basin Plan is intended to show how the quality of the surface and ground waters in the San Francisco Bay Region should be managed to provide the highest water quality reasonably possible. Specifically, the Basin Plan lists the following: various water uses in the region; describes the water quality that must be maintained to allow those uses; and describes the programs, projects, and other actions that are necessary to achieve the standards established in this plan.

The Basin Plan implements a number of state and federal laws, the most important of which are the California Porter-Cologne Water Quality Control Act and the federal Clean Water Act (CWA). The U.S. Environmental Protection Agency (U.S. EPA) has delegated responsibility for implementation of portions of the CWA to the State and Regional Boards, including water quality planning and control board programs, such as the National Pollutant Discharge Elimination System (NPDES).

# City/County Association of Governments of San Mateo County (C/CAG), Congestion Management Plan (CMP)

The passage of Proposition 111 and 108 in 1990 included a requirement every urban county within California to designate a Congestion Management Agency (CMA) that would prepare, implement, and biennially update a Congestion Management Program (CMP) that includes all jurisdictions within the county. In San Mateo County, the City/County Association of Governments (C/CAG) was designated as

the CMA. Subsequent legislation (Assembly Bill [AB] 2419) allowed existing CMAs to discontinue participation in the Program. San Mateo C/CAG voted to continue to participate in and adopt a CMP. According to the state legislation, the purpose of a CMP is to develop a procedure to alleviate or control anticipated increases in roadway congestion and to ensure that federal, state, and local agencies join with transit districts, business, private, and environmental interests to develop and implement comprehensive strategies needed to develop appropriate responses to transportation needs.

The main requirements of the CMP legislation are summarized as follows:

- The CMA must specify a system of highways and roadways for which traffic Level of Service (LOS) standards shall be established. The CMP's Roadway System shall include at a minimum all state highways and principal arterials. No highway or roadway designated as a part of the CMP Roadway System shall be removed from the system (in future CMPs);
- LOS Standards intended to measure roadway congestion must be established for all state highways and principal arterials included in the CMP's Roadway System. LOS is a qualitative description of roadway operations ranging from LOS A (free flow conditions) to LOS F (completely jammed conditions). The CMP may not establish any standard below LOS E unless the LOS was F at the time that the standard was established;
- The Performance Element includes performance measures to evaluate current and future multimodal system performance for the movement of people and goods in San Mateo County;
- The CMP must contain an element promoting the use of alternative transportation modes and ways to reduce future travel demand. Improving a county's jobs/housing balance and implementing travel demand management strategies are specifically mentioned as ways of attaining the objectives of this element of the CMP;
- The purpose of this element of the CMP is to create and implement a program to analyze the impacts of land use decisions made by local jurisdictions on regional transportation systems. Estimates of the costs associated with mitigating the projected impacts must be included in the CMP, with some exceptions; and
- The CMP must contain a 7 year program of projects expected to maintain or improve traffic LOS and transit performance, and to mitigate the impacts of local land use decisions. Projects contained in the CIP must also conform to transportation-related air quality mitigation measures.

In addition to these elements, a CMP must also include a uniform database and a computer-based transportation model that will be used to determine the quantitative impacts of proposed or planned land developments on a county's transportation systems. Finally, the CMA (San Mateo C/CAG) is charged with monitoring the implementation of all elements of the CMP and determining conformance with the CMP's requirements and recommendations.

California Government Code, Section 65089(b)(1)(A) requires that the CMA specify a system of roadways for which LOS Standards will be set and monitored. All State highways and principal arterials are to be included in the CMP's Roadway System. However, this statute does not specifically define what

constitutes a principal arterial. Once a roadway is included in the CMP's Roadway System, the roadway cannot be removed (in a future CMP).

## California Building Standards Commission - Green Building Standards

The California Building Standards Commission has taken the opportunity, along with other state agencies, to develop green building standards that will establish California as a leader in the efforts to reduce GHG emissions from structures. The code as adopted includes mandatory features with a delayed effective date for housing, and voluntary standards for hospitals and other non-residential occupancies. The Commission will continue to work with state agencies and the many stakeholders as they develop a comprehensive set of mandatory provisions in the 2010 edition of the California Green Building Standards Code. The green building standards were adopted by the California Building Standards Commission on July 17, 2008, as amended for publication in the 2007 California Green Building Standards Code, CCR, Title 24, Part 11.

#### Local

CEQA requires an analysis of consistency with plans and policies as part of the environmental setting (see CEQA Guidelines, Section 15125). An EIR uses the policy analysis as an indicator of the resources that might be affected by a project and considers the importance a policy gives a resource in determining the significance of the physical impact. Conversely, the EIR considers the potential significance of the related physical impacts when analyzing a particular policy. Inconsistency with a policy may indicate a significant physical impact, but the inconsistency is not itself an impact. Using this approach, this DEIR provides a detailed analysis of policies of the County of San Mateo General Plan and analyses of other applicable plans and policies, so that the decision-makers may determine project consistency. The physical impacts of the proposed project are analyzed in other sections of the DEIR.

The General Plan Guidelines published by the State Office of Planning and Research (OPR) defines consistency as, "An action, program, or project is consistent with the General Plan if, considering all its aspects, and it will further the objectives and policies of the General Plan and not obstruct their attainment." Therefore, the standard for analysis used in this DEIR is based on general agreement with the policy language and furtherance of the policy intent (as determined by a review of the policy context). The determination that the proposed project is consistent or inconsistent with the General Plan policies is ultimately the decision of the County of San Mateo.

# County of San Mateo General Plan

California State law (Government Code, Section 65300) requires that each county and city, including charter cities, prepare and adopt a comprehensive, long-term general plan for its future development. This general plan must contain seven elements, including: land use, circulation, housing, conservation, open space, noise and safety. Of these, State law mandates that the land use element must correlate with the circulation element. In addition to these, State law permits counties to include optional elements in their general plans, thereby providing local governments with the flexibility to address the specific needs

and unique character of their jurisdictions. California State law also requires that the day-to-day decisions of a county follow logically from and be consistent with the general plan. More specifically, Government Code, Sections 65860, 66473.5 and 65647.4 require that zoning ordinances and subdivision and parcel map approvals be consistent with the general plan. Goals, objectives and programs established for each element of the General Plan must meet the existing and future needs and desires of the community. These goals, objectives and programs are specific, action-oriented and promoted during the life of the General Plan. The County of San Mateo General Plan was adopted in 1986 and sets forth goals and policies for the future development of the County, designating the location of desired future land uses within the County.

The General Plan consists of an overview and 16 elements, including: (1) Vegetative, Water, Fish and Wildlife Resources; (2) Soil Resources; (3) Mineral Resources; (4) Visual Quality; (5) Historical and Archeological Resources; (6) Park and Recreation Resources; (7) General Land Use; (8) Urban Land Use; (9) Rural Land Use; (10) Water Supply; (11) Wastewater; (12) Transportation; (13) Solid Waste; (14) Housing; (15) Natural Hazards; and (16) Man-Made Hazards.

# County of San Mateo Zoning Regulations

The County of San Mateo Zoning Regulations for the project area were first adopted in 1957 and have been amended through August 2000. Development guidelines for properties within the County of San Mateo are established by the Zoning Regulations.

# County of San Mateo Subdivision Regulations

The County of San Mateo Subdivision Regulations were adopted on January 14, 1992. These regulations control the division of land, the movement of lines between parcels, the removal of parcel lines, and the determination of parcel legality within the unincorporated territory of San Mateo County.

# County of San Mateo Green Building Ordinance

On February 26th 2008, the San Mateo County Board of Supervisors approved a Green Building Ordinance that will apply to building projects within the unincorporated areas of San Mateo County. On October 7, 2008 the Board of Supervisors adopted an ordinance amending the regulations clarifying standards and requirements to improve the effectiveness of the Green Building Program. The purpose of the Green Building Program is to enhance public health and welfare by encouraging green building measures in the design, building and maintenance of buildings. Green Building Practices are intended to achieve the following goals:

- To encourage the conservation of natural resources;
- To reduce waste in landfills generated by construction projects;
- To increase energy efficiency and lower energy usage;

- To reduce operating and maintenance costs for buildings; and
- To promote a healthier indoor environment.

#### Local Agency Formation Commission (LAFCO)

The State Legislature has set forth specific policy direction to LAFCO in carrying out its duties and responsibilities under the Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000. Specifically, LAFCO is directed to:

- Encourage orderly growth and development....logical formation and determination of local agency boundaries" (Government Code, Section 56001);
- Encourage and provide for "planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open space lands" (Government Code, Section 56300); and
- Discouragement of urban sprawl, preserving open space and prime agricultural lands, efficiently providing government services and the encouragement of orderly formation and development of local agencies based upon local conditions and circumstances (Government Code, Section 56301.).

In reviewing and approving or disapproving proposals, the legislature has established two priorities for LAFCO (Government Code, Section 56377):

- Development or use of land for other than open-space uses shall be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area; and
- Development of existing vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency shall be encouraged before any proposal is approved, which would allow for or lead to the development of existing open-space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency.

The Guide to CKH addresses the plan for providing services in Government Code, Section 56653(b). The plan for providing services shall include all of the following information and any additional information required by the commission or the executive officer:

- An enumeration and description of the services to be extended to the affected territory;
- The level and range of those services;
- An indication of when those services can feasibly be extended to the affected territory;

- An indication of any improvement or upgrading of structures, roads, sewer or water facilities, or other conditions the local agency would impose or require within the affected territory if the change of organization or reorganization is completed; and
- Information with respect to how those services will be financed.

# **ENVIRONMENTAL IMPACTS**

#### **Threshold of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant land use and planning environmental impact if it would:

- a) Physically divide an established community;
- b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section V.C (Impacts Found to be Less than Significant) of this DEIR, the potential impacts associated with Threshold (c) listed above were determined to result in no impact. Therefore, only Threshold (a) and (b) listed above are addressed in the following discussion.

#### **Project Impacts and Mitigation Measures**

#### Impact LU-1 Physical Division of an Established Community

Implementation of the proposed project would result in the development of 25 single-family homes on the project site. The project area is largely developed with urban and suburban land uses including roadways, several single-family residential developments, the College of San Mateo, and a water tank and cell site (per Section III, Project Description the water tank/cell site parcel (APN: 041-111-020) is not included as part of the proposed project). The project site is made up of multiple undeveloped parcels (APNs: 041-111-130, -280, -160, -320, -270, and -360) located within an existing single-family neighborhood that is designated and zoned for single-family residential development. The site is designated Medium Low-Density Residential, which allows the development of 2.4 to 6.0 dwelling units (du) per net acre (du/acre) and is zoned one-family residential district (R-1) and residential density district Number 8 (S-8). The proposed uses are consistent with the surrounding land uses. Thus, the project would not result in a division of an established community. Therefore, project impacts related to physical division of an established community would be *less than significant* and no mitigation measures are required.

# Impact LU-2 Conflict with Applicable Land Use Plans, Policies, or Regulations

### Bay Area CAP

Based on the analysis of the proposed project's impacts on air quality (see Section IV.B, Air Quality), construction of the project would result in a short-term, significant and unavoidable air quality impact. Modeling of the pollutant emissions associated with the project shows that the long-term operation of the project would not result in an exceedance of the BAAQMD thresholds for carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NOx), and respirable particulate matter (PM10). As such, the proposed project would not have any significant air quality impacts during the operational phase. The proposed project is located within the jurisdiction of San Mateo County, which has a General Plan that is consistent with the region's 2000 CAP. The project is consistent with the General Plan since the build-out density would not exceed the allowable densities assumed in the General Plan. Therefore, the proposed project would be consistent with the CAP and impacts would be *less than significant*.

### San Francisco Bay Water Quality Control Plan ('Basin Plan')

The proposed project would be required to comply with all State and federal regulations governing water quality. As part of the drainage plan for the project, all necessary NPDES permits would be obtained for both the construction and the ultimate development phase of the project. Best Management Practices (BMPs) would be incorporated into the development and final design of drainage facilities that would be reviewed as part of the building permit review process. Given the required compliance with applicable standards and regulations, the proposed project would be consistent with the Basin Plan; therefore, impacts would be *less than significant*. For a more detailed discussion of the project's impacts to hydrology and water quality, please refer to Section IV.E (Hydrology & Water Quality).

# C/CAG CMP

None of the designated study roadway segments analyzed in Section IV.I (Transportation/Traffic) of the DEIR are part of the CMP network. As stated in Section IV.I, the project would add less than 100 peak hour trips to regional roads; hence, no analysis under the CMP of the C/CAG is required. The CMP guidelines specify that a project must implement travel demand management (TDM) measures if the project produces 100 or more new peak hour trips on CMP roadways. The analysis of project traffic on CMP roadway facilities (i.e., SR 92) indicates that the project would add approximately 19 trips to SR 92 during the AM peak hour and approximately 25 trips during the PM peak hour. The proposed project is not required to implement any TDM measures. Therefore, impacts would be *less than significant*.

# California Building Standards Commission - Green Building Standards

No conceptual plans for homes have been proposed by the applicant yet; however, the future building will incorporate green building requirements into the development and final site design that would be reviewed as part of the building permit review process. Therefore, impacts would be *less than significant*.

### County of San Mateo General Plan

The project site is designated for the development of single-family residential uses. The General Plan land use designation for the project site is Medium Low-Density Residential. The proposed project includes development of single-family uses and would be consistent with the General Plan land use designation. Project consistency with individual General Plan policies is evaluated in Table IV.F-1 at the end of this section. No listed policies were identified as being inconsistent. Therefore, impacts would be *less than significant*.

### County of San Mateo Zoning Regulations

The project site is zoned for one-family residential district (R-1) and residential density district Number 8 (S-8). As discussed above, the proposed project includes development on 25 single-family residential uses. As such, the proposed project would be designed and constructed in conformance with the development regulations that are applicable to the project site's zoning. Therefore, impacts would be *less than significant*.

#### County of San Mateo Subdivision Regulations

Per California Government Code, Sections 66410 - 66424.6, the applicant will comply with all standards and requirements outlined in the Subdivision Map Act, as well as the local County Subdivision Regulations as part of the proposed project development. Therefore, impacts would be *less than significant*.

#### County of San Mateo Green Building Ordinance

No conceptual plans for homes have been proposed by the applicant yet; however, the future building will incorporate local green building requirements into the development and final site design that would be reviewed as part of the building permit review process. Therefore, impacts would be *less than significant*.

# LAFCO

As stated previously, if all homes to be constructed are to receive the same level of police and fire protection, a portion of the project site would need to be annexed into CSA #1, so that CSA #1 has both the jurisdiction and the funding to provide such service. Additionally, the applicant is proposing that the project site be annexed to the Bel Aire Lighting District to implement project-related streetlights. Overall, annexation would require application to LAFCO, which will be the responsibility of the project applicant. To provide services consistent with adjacent areas, it would be necessary to annex to the County-governed districts. The developer would be responsible for applying to LAFCO for the annexation, which would involve the following:

• Application by property owner to the San Mateo LAFCO including a map and legal description and LAFCO and State Board of Equalization Fees;

- Adoption of a property tax exchange resolution by the Board regarding amount of property tax to be transferred between the County General Property Tax and County governed districts;
- Special parcel tax for CSA #1 for enhanced police and fire; and
- Approval by LAFCO and recordation of certificate of completion.

Therefore, impacts would be *less than significant*.

Overall, as stated previously and outlined in Table IV.F-1 (County of San Mateo General Plan Consistency Analysis), the proposed project would be consistent with all applicable land use plans, policies, and regulations. Therefore, land use & planning impacts would be *less than significant* and no mitigation measures are required.

# **CUMULATIVE IMPACTS**

According to the Natural Resource Conservation Services (NRCS) Land Use Conversion Table for San Mateo County, cumulative development that converted lands into urban and built-up lands amounted to approximately 492 acres of 353,450 total County acres between the years 2004 to 2006.<sup>3</sup> The conversion of lands to urban uses is an inevitable effect of regional population increases and shrinking housing availability.

Cumulative land use impacts could occur if other related projects in the vicinity of the project site would result in land use impacts in conjunction with the proposed project. The 22 related projects of various land uses are listed in Table III-1 (Related Projects) of this DEIR. The related projects, in conjunction with the proposed project, would result in the general intensification of land use and development density in the County. These projects would be required to either conform to the zoning and land use designations for each site or be subject to specific findings and conditions, which are based on maintaining general conformance with the land use plans applicable to the area. As such, development of the proposed project and related projects is not anticipated to substantially conflict with the intent of the County's General Plan regarding the future development of the area, or with other land use regulations required to be consistent with the General Plan, Zoning Regulations and Ordinance Codes. Development of the proposed project, in conjunction with related projects, would not be expected to result in cumulatively considerable effects with respect to land use. Therefore, cumulative impacts to land use would be *less than significant* and no mitigation measures are required.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

All land use and planning impacts would be *less than significant*.

<sup>&</sup>lt;sup>3</sup> Division of Land Resource Protection, San Mateo County Important Farmland Data Availability. Accessed by CAJA Staff at http://redirect.conservation.ca.gov/DLRP/fmmp/county\_info\_results.asp on October 28, 2008.

# Table IV.F-1 County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment	
VEGETATIVE, WATER, FISH AND WILDLIFE RESOURCES		
(1.20) Importance of Sensitive Habitats Consider areas designated as sensitive habitats as a priority resource requiring protection.	<i>Consistent.</i> The proposed project would result in the removal of 37 trees. The tree report determined that the 37 trees proposed to be removed did not qualify to be Heritage Trees as defined by the County of San Mateo Heritage Tree Ordinance. As such, implementation of the proposed project would not result in direct impacts to heritage trees. The proposed project construction has potential to adversely affect oak woodlands, which are considered sensitive natural communities. The proposed project would result in the removal of approximately 2.8 acres of Coast Live Oak Woodland. The removal of this oak woodland represents a loss of approximately 85 percent of the total 3.3 acres of this community on the site. Mitigation measures included in Section IV.C (Biological Resources) would ensure the project would not result in any significant impacts to sensitive habitats.	
<ul> <li>(1.22a) Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources</li> <li>Regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish and wildlife resources.</li> </ul>	<i>Consistent.</i> The Non-Native Annual Grassland within the project site has a low to medium potential to support three special-status plant species. Only five special-status wildlife species are known to occur in habitats similar to those found on the project site. Potentially suitable roost habitat is present for two special-status bat species. Two special-status bird species have a "medium" potential to nest on-site. Mitigation measures included in Section IV.C (Biological Resources) would ensure the project would not result in any significant impacts to vegetative, water, fish, and wildlife resources.	
<ul> <li>(1.23) Regulate Location, Density and Design of Development to Protect Vegetative, Water, Fish and Wildlife Resources</li> <li>Regulate the location, density and design of development to minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.</li> </ul>	<b>Consistent.</b> See consistency analysis for Policies 1.22a.	
(1.24) Protect Vegetative Resources Ensure that development will: (1) minimize the removal of vegetative resources and/or; (2) protect vegetation which enhances microclimate, stabilizes slopes or reduces surface water runoff, erosion or sedimentation; and/or (3) protect historic and scenic trees.	<i>Consistent.</i> See consistency analysis for Policies 1.20.	
(1.25) Protect Water Resources Ensure that development will:(1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and	<i>Consistent.</i> The project would not result in the alteration of any natural water body, would not affect any stream flows, and would not deplete groundwater resources. Water service for the proposed project would be provided by the Cal Water	

# Table IV.F-1 (Continued) County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment
water quality for vegetative, fish and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.	via the on-site water tank located within the project site (APN: 041-111-020).
(1.26) Protect Fish and Wildlife Resources Ensure that development will minimize the disruption of fish and wildlife and their habitats.	<i>Consistent.</i> The project would not disrupt fish or their habitats. With respect to wildlife resources, see consistency analysis for Policies 1.20 and 1.22a.
(1.27) Regulate Development to Protect Sensitive Habitats Regulate land uses and development activities within and adjacent to sensitive habitats in order to protect critical vegetative, water, fish and wildlife resources; protect rare, endangered, and unique plants and animals from reduction in their range or degradation of their environment; and protect and maintain the biological productivity of important plant and animal habitats.	<i>Consistent.</i> See consistency analysis for Policy 1.20.
(1.28) Establish Buffer Zones Establish necessary buffer zones adjacent to sensitive habitats which include areas that directly affect the natural conditions in the habitats.	<i>Consistent.</i> Per Mitigation Measure BIO-1c, in Section IV.C (Biological Resources) of this DEIR, a minimum exclusion buffer of 25 feet is required by CDFG for songbird nests, and 200 to 500 feet for raptor nests, depending on the species and location. Additionally, per Mitigation Measure BIO-1d, if bats are detected, a 50-foot buffer exclusion zone shall be established around each occupied snag or tree until the roosting activities have ceased.
(1.30) Uses Permitted in Buffer Zones Within buffer zones adjacent to sensitive habitats, permit the following land uses and development activities: (1) land uses and activities which are compatible with the protection of sensitive habitats, such as fish and wildlife management activities, nature education and research, trails and scenic overlooks, and at a minimum level, necessary public and private infrastructure; (2) land uses which are compatible with the surrounding land uses and will mitigate their impact by enhancing or replacing sensitive habitats; and (3) if no feasible alternative exists, land uses.	<i>Consistent.</i> No construction activities or residential land uses would be allowed in the buffer zones discussed in Policy 1.28 until roosting activities have ceased.
(1.31) Regulate the Location, Siting and Design of Development in Sensitive Habitats	<i>Consistent.</i> See consistency analysis for Policy 1.20.
Regulate the location, siting and design of development in sensitive habitats and buffer zones to minimize to the greatest extent possible adverse impacts, and enhance positive impacts.	

# Table IV.F-1 (Continued) County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment		
(1.32) Performance Criteria and Development Standards Establish performance criteria and development standards for development permitted within sensitive habitats and buffer zones, to prevent and if infeasible mitigate to the extent possible significant negative impacts, and to enhance positive impacts.	<i>Consistent.</i> See consistency analysis for Policies 1.20 and 1.28.		
(1.36) Protect the Productive Use of Water Resources Ensure that land uses and development on or near water resources will not impair the quality or productive capacity of these resources.	<i>Consistent.</i> Per Section IV.E (Hydrology & Water Quality), the project applicant would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which would ensure that the project would not impair water quality and meet permitting requirements. Additionally, the project's demand for water could be accommodated by the existing supply provided by Cal Water and would not significantly affect the capacity of this supply (refer to Section IV.J, Utilities & Services Systems).		
SOIL RESOURCES			
<ul> <li>(2.17) Regulate Development to Minimize Soil Erosion and Sedimentation</li> <li>Regulate development to minimize soil erosion and sedimentation; including, but not limited to, measures which consider the effects of slope, minimize removal of vegetative cover, ensure stabilization of disturbed areas and protect and enhance natural plant communities and nesting and feeding areas of fish and wildlife.</li> </ul>	<i>Consistent.</i> Soil conditions at the project site have high to very high potential for soil erosion. Without proper implementation of erosion control measures during construction and operation of the project, the project site could sustain substantial soil erosion and loss of topsoil. The project would reduce the potential for erosion over the existing condition through the construction of several drainage features that would direct runoff from the project site to drainage infrastructure in the proposed roadways, removal/repair of the existing eroded slopes on the site, and the portions of the project site that would remain as open space would be re-vegetated with native species, which would reduce the potential for erosion to occur over the lifetime of the project. Mitigation measures in Section IV.D (Geology & Soils) would require permanent erosion control measures to be placed on all slopes and the preparation of a Storm Water Pollution Prevention Plan (SWPPP). Refer to consistency analysis for Policies 1.20 and 1.22a.		
(2.23) Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion Regulate excavation, grading, filling, and land clearing activities to protect against accelerated soil erosion and sedimentation.	<i>Consistent.</i> As discussed under Policy 2.17, the proposed project would incorporate design measures to improve soil erosion potential over existing conditions. Per County standards, no grading shall be allowed during the winter season to avoid potential soil erosion unless approved, in writing, by the County Community Development Director. The project site currently has extensive soil erosion on portions of the site. This surface erosion is proposed to be repaired as part of the project. Overall, the proposed storm drainage infrastructure would improve site conditions relative to erosion.		

Policy	Project Consistency/Comment
(2.25) Regulate Topsoil Removal Operations Against Accelerated Soil Erosion	<i>Consistent.</i> See consistency analysis for Policy 2.17.
Regulate topsoil removal operations to protect against accelerated soil erosion and sedimentation through measures which ensure slope stabilization and surface drainage control.	
(2.29) Promote and Support Soil Erosion Stabilization and Repair Efforts	<i>Consistent.</i> See consistency analysis for Policies 2.17 and 2.23.
Promote and support efforts aimed at stabilization of ongoing soil erosion and repair of erosion caused land scars.	
VISUAL (	UALITY
(4.14a) Appearance of New Development. Regulate development to promote and enhance good design, site relationships and other aesthetic considerations.	<i>Consistent.</i> The project would not result in any significant aesthetic impacts. The final project design (i.e., residential homes and lighting plans) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes, as well as Bel Aire Lighting District standards, and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes, roadways streetlights, and associated lighting plans would be designed and constructed to be compatible with the surrounding area.
(4.14b) Appearance of New Development Regulate land divisions to promote visually attractive development.	<i>Consistent.</i> See consistency analysis for Policy 4.14a.
(4.20) Utility Structures Minimize the adverse visual quality of utility structures, including roads, roadway and building signs, overhead wires, utility poles, TV, antennae, windmills and satellite dishes.	<i>Consistent.</i> All utilities (i.e., electricity, natural gas, water, and sewer) associated with the proposed project would be placed underground.
(4.35a) Urban Area Design Concept Maintain and, where possible, improve upon the appearance and visual character of development in urban areas.	<i>Consistent.</i> See consistency analysis for Policy 4.14a.
(4.35b) Urban Area Design Concept Ensure that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality.	<i>Consistent.</i> See consistency analysis for Policy 4.14a.
(4.36) Improving Visual Quality in Urban Areas Conduct special studies in unincorporated urban areas to identify and mitigate design problems in commercial and	<i>Consistent.</i> See consistency analysis for Policy 4.14a.

Policy	Project Consistency/Comment
mixed density residential areas.	й К. К.
(4.39) Scenic Roads Give special recognition and protection to travel routes in rural and unincorporated urban areas which provide outstanding views of scenic vistas, natural landscape features, historical sites and attractive urban development.	<i>Consistent.</i> Per Impact AES-1, post-project conditions would be noticeable from County-designated scenic roadways (e.g., Polhemus Road); the currently undeveloped hillside would be replaced with single-family homes. However, considering the length of the roadways, the project site is only visible for a very short distance from all of these roads. Furthermore, development similar to what is proposed is visible in existing views from the roadways. Mitigation has been included in the DEIR to reduce, to the extent possible, noticeable effects over the long-term, including Conservation Easements, Tree Mitigation and Monitoring Plan and Tree Replacement Program. Additionally, the final project design (i.e., residential homes and lighting plans) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes, as well as Bel Aire Lighting District standards, and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes, roadways streetlights, and associated lighting plans would be designed and constructed to be compatible with the surrounding area.
PARK AND RECREA	ATION RESOURCES
(6.17a) Techniques for Providing Park and Recreation Facilities Regulate development to provide new or improved park and recreation facilities. Use one or a combination of the following techniques: (1) offer of dedication, (2) grant of fee interest, and (3) in lieu fees.	<i>Consistent.</i> The proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. The tot lot and trails would be available for use by the general public. The 0.45-acre (19,602-sf) proposed undisturbed and protected area would be included within the southwest corner of the project site. The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. This amount of community open space and other recreation amenities available to project residents and the general public, would exceed the parkland acreage required by the County of San Mateo Subdivision Regulations. However, the County may require the payment of fees in addition to or in lieu of the dedication of land when the proposed subdivision contains 50 parcels or less. The proposed subdivision amenities to exceed the parkland acreage requirement or pay the in-lieu fees as required by the County.

Policy	Project Consistency/Comment
GENERAL LAND USE	
(7.21) Suitable Land Within City Sphere of Influence Consider that lands may be included within a city sphere of influence only if they are generally suitable for urban services (e.g., public sewer systems, public water supplies, fire and police protection) and urban land uses.	<i>Consistent.</i> Parcels APN: 041-111-280 and 041-111-320 associated with the proposed project are not within the boundaries of the San Mateo County Service Areas (CSA), specifically CSA #1. These parcels would need to be annexed into this CSA, in order to receive the same level of public services as the remaining project site. The applicant will follow the Application Process as stipulated according to the San Mateo County Local Agency Formation Commission (LAFCO) for annexation procedures. The applicant would then work with LAFCO to complete the annexation process. All of the parcels associated with the proposed project would be adequately served by urban services, as analyzed in Sections IV.H (Public Services) and IV.J (Utilities & Service Systems). As discussed throughout this section, the project site would be suitable for urban land uses.
URBAN L	AND USE
(8.14a) Land Use Compatibility Protect and enhance the character of existing single-family areas.	<i>Consistent.</i> The project site is surrounded by single-family homes. The proposed project would be consistent with the surrounding land uses and the General Plan designation, Medium Low-Density Residential.
(8.14b) Land Use Compatibility Protect existing single-family areas from adjacent incompatible land use designations which would degrade the environmental quality and economic stability of the area.	<i>Consistent.</i> The project site is surrounded by single-family homes. The General Plan land use designation for the project site is Medium Low-Density Residential. The proposed project includes development of single-family uses and would be consistent with the General Plan land use designation, which would not degrade the environmental quality and economic stability of the area.
(8.29) <i>Infilling</i> Encourage the infilling of urban areas where infrastructure and services are available.	<i>Consistent.</i> The largely undeveloped project site is surrounded by single-family homes. The project site is located in an area that is currently served by existing utility infrastructure and public services. The proposed project would include installation of service system infrastructure on-site, with connections linking into existing off-site adjacent service infrastructure.
(8.31a) Overcoming Constraints to Development Encourage efficient and effective infrastructure (e.g., water supply, wastewater, roads) necessary to serve the level of development allowable within urban areas.	<i>Consistent.</i> The project is proposed to be included within the Cal Water service area. The proposed project also includes connecting to an existing sewage system instead of septic. Both the design of the project and recommendations included in the DEIR involve efficient and effective infrastructure. The proposed project would also comply with all Green Building Ordinances.

Policy	Project Consistency/Comment
(8.31b) Overcoming Constraints to Development Encourage improvements which minimize the dangers of natural hazards and man-made hazards to human safety and property.	<i>Consistent.</i> Both the project design and recommendations included in the DEIR involve improvements that minimize the dangers of natural hazards and man-made hazards (e.g., geotechnical, grading, access, noise, etc.). Refer to Sections IV.D (Geology & Soils) and IV.G (Noise) for impacts and associated mitigation measures. All impacts would be less than significant with mitigation, sans the significant and unavoidable environmental impacts relative to short-term noise impacts during the construction and grading phase.
(8.35) Uses Allow uses in zoning districts that are consistent with the overall land use designation.	<i>Consistent.</i> The proposed project does not require a general plan amendment or zone change for the residential density permitted. The project site is zoned for residential density district Number 8 (S-8). The proposed project would be designed and constructed in conformance with the development regulations that are applicable to the project site's zoning.
(8.36) Density Regulate maximum allowable densities in zoning districts in order to: (1) ensure a level of development that is consistent with land use designations, (2) plan for the efficient provision of public facilities, services, and infrastructure, and (3) minimize exposure to natural and man-made hazards.	<i>Consistent.</i> See consistency analysis for Policy 8.36.
<ul> <li>(8.37) Parcel Sizes</li> <li>Regulate minimum parcel sizes in zoning districts in an attempt to: (1) ensure that parcels are usable and developable, (2) establish orderly and compatible development patterns, (3) protect public health and safety, and (4) minimize significant losses of property values.</li> </ul>	<i>Consistent.</i> The proposed project would comply with the regulations that apply to the R-1/S-8 Districts, including minimum lot area.
(8.38) Height, Bulk, and Setback Regulate height, bulk, and setback requirements in zoning districts in order to: (1) ensure that the size and scale of development is compatible with parcel size, (2) provide sufficient light and air in and around structures, (3) ensure that development of permitted densities is feasible, and (4) ensure public health and safety.	<i>Consistent.</i> The proposed project would comply with the regulations that apply to the R-1/S-8 Districts, including height, bulk, and setback requirements.
(8.39) Land Divisions When creating new land divisions, align streets and parcels to maximize solar access.	<i>Consistent.</i> The project site is situated on a hillside that maximizes solar access. Proposed residential building pads are also dispersed throughout the site to maximize solar access.
(8.41) Solar Access Minimize the obstruction of solar access by: (1) protecting	<i>Consistent.</i> The project site is situated on a hillside that maximizes solar access. Proposed residential building pads

Policy	Project Consistency/Comment
structures from encroachment; (2) landscaping with appropriate plant materials; and (3) clustering structures where beneficial.	are also dispersed throughout the site to maximize solar access. In addition, the proposed project would comply with the regulations that apply to the R-1/S-8 Districts, including height, bulk, and setback requirements, which would minimize the obstruction of solar access. Further, although there are no specific landscaping plans proposed at this time, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat.
WATER	SUPPLY
(10.10) Water Suppliers in Urban Areas Consider water systems as the preferred method of water supply in urban areas. Discourage use of wells to serve urban uses.	<i>Consistent.</i> Water supplies would be provided by Cal Water's Mid-Peninsula Water District's supply, which is predominantly from the Sierra Nevada, and would not be dependent on underground aquifers or wells.
(10.12) Coordination of Water Suppliers Encourage water providers to coordinate the planned capacity of their facilities commensurate with the level of development permitted by adopted land use plans and wastewater management plans.	<i>Consistent.</i> Water and wastewater agencies have been contacted with service letters to request specific information related to service levels, treatment capacity, wastewater generation rates, and project-generated demand. Agencies' responses have been incorporated in the setting and impacts discussion of Section IV.J (Utilities & Service Systems).
(10.13) Water Systems in Unincorporated Areas Support efforts to improve water distribution and storage systems in unincorporated neighborhoods and communities.	<i>Consistent.</i> Overall, the additional demand place on available water supplies would represent a very small incremental increase over current demand. Additionally, per the Mid-Peninsula Water District's 2007 Urban Water Management Plan (UWMP), proposed demand reduction programs contained therein are assumed to be implemented during drought years. No storage system would be implemented for the proposed project. The proposed project would also comply with all Green Building Ordinances, specifically for water conservation.
(10.25a) Efficient Water Use Encourage the efficient use of water supplies through effective conservation methods.	<i>Consistent.</i> The proposed project would comply with all mandated conservation measures outlined in the UWMP and applicable State and County policies and ordinances (e.g., Green Building Ordinance). Further, although there are no specific landscaping plans proposed at this time, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat.
(10.25b) Efficient Water Use Require the use of water conservation devices in new structural development.	<i>Consistent.</i> The proposed project would comply with all applicable State and County policies and ordinances (e.g., Green Building Ordinance).
(10.25c) Efficient Water Use Encourage exterior water conservation.	<i>Consistent.</i> The proposed project would comply with all applicable State and County policies and ordinances (e.g., Green Building Ordinance) associated with efficient water

Table IV.F-1 (Continued)
County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment
	use. Further, although there are no specific landscaping plans proposed at this time, the intent is to utilize drought-tolerant native vegetation in order to restore the area to a natural habitat.
WASTE	WATER
(11.4) Adequate Capacity for Unincorporated Areas Plan for the availability of adequate sewerage collection and treatment capacity for unincorporated urban areas.	<i>Consistent.</i> The City of San Mateo Department of Public Works cannot approve the additional flow that would result from the proposed project. The City of San Mateo would consider granting approval for the additional flow that would result from the proposed project provided that the CSCSD pays the amount due and the CSCSD presents an acceptable plan that assures sufficient revenues necessary to meet the current costs and the future additional costs as defined in the Sanitary Sewer Agreement. Mitigation Measure UTIL-1 in Section IV.J (Utilities & Service Systems) would require the project applicant to mitigate the project-generated increase in sewer flow such that there is a "zero net increase" in flow during wet weather events, by reducing the amount of existing Inflow and Infiltration (INI) into the CSCSD sewer system. This shall be achieved through the construction of improvements, as approved by the CSCSD, shall be completed prior to the start of the construction of the residences.
(11.16) Sewer Facilities for Unincorporated Areas In unincorporated areas where the County provides sewerage collection services, support the development of adequate sewerage facilities to serve the planned development of these areas. Work with sewerage authorities and cities to reserve capacity commensurate with the level of development planned for these areas.	<i>Consistent.</i> The project applicant proposes a sewer system instead of septic systems. Wastewater from the proposed project site would be conveyed via proposed and existing wastewater infrastructure to the City of San Mateo Wastewater Treatment Plant (SMWTP). See consistency analysis for Policy 11.4.
TRANSPO	RTATION
(12.10) Urban Road Improvements In urban areas, where improvements are needed due to safety concerns or congestion, support the construction of interchange and intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements.	<i>Consistent.</i> The proposed project includes approximately 98,102 square feet (approximately 17 percent of the total project site) of on-site private roadways, including the main access road (Lot "C" or "private street"), the Emergency Vehicle Access (EVA) road, and the new water tank access road. However, the proposed project would not result in the need for intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements.
(12.15a) Local Circulation Policies In unincorporated communities, plan for providing: Maximum	<i>Consistent.</i> The proposed project would not interfere with the freedom of movement, nor would it impede access to any

Policy	Project Consistency/Comment
freedom of movement and adequate access to various land uses.	land uses.
(12.15b) Local Circulation Policies In unincorporated communities, plan for providing: Improved streets, sidewalks, and bikeways in developed areas.	<i>Consistent.</i> The new private main access road width would be 32 feet from curb-to-curb. There is one section that would be 22 feet wide from curb-to-curb. Because of the steep grades and curves on-site, it would be difficult for drivers to maneuver within 32 feet with parking located on both sides of the street. Therefore, per Mitigation Measure TRANS-3 parking shall be allowed on only one side of the street, along all 32-foot segments. Parking shall not be allowed on the 22- foot wide section. As part of the project design, sidewalks would be constructed on portions of the proposed project site. Refer to Impact TRANS-5 in Section IV.I (Transportation/Traffic).
(12.15c) Local Circulation Policies In unincorporated communities, plan for providing: Minimal through traffic in residential areas.	<i>Consistent.</i> Because the project site is located on a hillside and planned for a loop drive, the project would minimize through traffic at the site. Due to the location of the project site, project trips would travel through residential areas; however, these impacts would not be significant.
(12.15d) Local Circulation Policies In unincorporated communities, plan for providing: Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks.	<b>Partially Consistent.</b> Per Mitigation Measure TRANS-6 in Section IV.I (Transportation/Traffic), during grading/construction activities, the haul route streets shall be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road. That would minimize the number of residential streets used by trucks. Trucks shall not utilize Ascension Drive because of the existing traffic level and the steep grade. Additional measures are included to reduce potential impacts.
(12.15e) Local Circulation Policies In unincorporated communities, plan for providing: Access for emergency vehicles.	<i>Consistent.</i> An EVA road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. In addition, EVA to the project would be provided via the new private main access road. The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. Up to 20 percent road grades are allowed by County design exception. Additionally, per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road. For the various 20 percent grade segments within the main access road (unbroken grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE

Table IV.F-1 (Continued)
County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment
	Fire Marshal has stated that this is not acceptable for primary access roads; however, the Department would allow this grade pending receipt of a finalized plan for all proposed roadway infrastructures. Refer to Mitigation Measure PS-2c.
(12.15f) Local Circulation Policies In unincorporated communities, plan for providing: Bicycle and pedestrian travel.	<i>Consistent.</i> See consistency analysis for Policy 12.15b. Further, the proposed project would include an on-site trail system (i.e., Trail 1 and Trail 2), which would connect to off- site sidewalk systems. As outlined in Section III (Project Description), Trail 1 would consist of a 5-foot wide pathway that would transverse the northern portion of the site running behind proposed Lots 1-6 and would be accessible from two points: (1) the stairs to be located near the tot lot; and (2) the far northeastern corner of the proposed on-site private main access road (near the front of Lot 6). While Trail 2 would consist of a 5-foot wide pathway, which would run through the proposed common area/conservation area located within the southwestern portion of the project site (specifically adjacent to Lots 18, 19 and 20). This trail would be accessible from two points: (1) the western portion along the private main access road (near Lot 13); and (2) via stairs leading up to the trail from Ascension Drive (refer to Figure III-12).
(12.39) Pedestrian Paths	<i>Consistent.</i> See consistency analysis for Policy 12.15f.
Encourage the provision of safe and adequate pedestrian paths in new development connecting to activity centers, schools, transit stops, and shopping centers.	
SOLID	WASTE
(13.10) Long-Term Landfill Disposal Capability Provide long-term landfill disposal capability for nonrenewable wastes and residues from resource recovery operations.	<i>Consistent.</i> The increased amount of solid waste generated during the construction and operational phases of the proposed project can be accommodated by the existing available capacity of the Ox Mountain Landfill. Additionally, mitigation measures in Section IV.J (Utilities & Service Systems) would serve to minimize the amount of solid waste contributed to the landfill during the construction period to the extent possible.
(13.23) Promoting Curbside Recycling Promote the establishment of curbside recycling programs as a means to increase recycling.	<i>Consistent.</i> The project would incorporate areas at the curb of each home to place multiple bins for household waste and recyclable materials. Refer to Mitigation Measure UTIL-4 in Section IV.J (Utilities & Service Systems).
(13.25a) Locating Rubbish Collection Points Consider permitting the placement of receptacles for recyclables within appropriate residential and commercial	<i>Consistent.</i> See consistency analysis for Policy 13.23.

Policy	Project Consistency/Comment
areas.	2
NATURAL	HAZARD
<ul> <li>(15.12a) Locating New Development in Areas Which Contain Natural Hazards</li> <li>As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.</li> </ul>	<i>Consistent.</i> All applicable natural hazards have been analyzed in this DEIR, specifically pertaining to geology and soils impacts (e.g., landslides, earthquakes; refer to Section IV.D, Geology & Soils); hydrological impacts (e.g., flooding; refer to Section IV.E, Hydrology & Water Quality); and wildfire and fire protection hazard impacts (refer to Section IV.H, Public Services). As outlined in these section analyses, impacts were found to be less than significant with implementation of mitigation measures.
(15.20c) Review Criteria for Locating Development in Geotechnical Hazard Areas Avoid unnecessary construction of roads, trails, and other means of public access into or through geotechnical hazard areas.	<b>Partially Consistent.</b> See consistency analysis for Policy 15.12a. Geotechnical reports have been prepared for the project. The project site is located in a seismically active region, and development of the proposed project would expose future users to seismic ground shaking. However, the site does is not within a State of California Earthquake Fault Zone and the closest mapped active fault is the San Andreas. This hazard is shared in some degree by all land and structures in the San Francisco Bay Area. Further, conformance with the current California Building Code requirements would reduce the potential for structures on the project site to sustain damage during an earthquake event. The project site is also susceptible to deep-seated landslide hazards, shallow landslide hazards, hazards associated with temporary cut slopes, and hazards related to adjacent properties. Mitigation Measures included in Section IV.D (Geology & Soils) would ensure that the project would not result in any significant impacts related to geotechnical hazards.
(15.21a) Requirement for Detailed Geotechnical Investigations	<i>Consistent.</i> See consistency analysis for Policy 15.20c.
In order to more precisely define the scope of the geotechnical hazards, the appropriate locations for structures on a specific site and suitable mitigation measure, require an adequate geotechnical investigation for public or private development proposals located: (1) in an Alquist-Priolo Special Studies Zone, or (2) in any other area of the County where an investigation is deemed necessary by the County Department of Public Works.	
<ul> <li>(15.28a) Review Criteria for Locating Development in Fire Hazard Areas</li> <li>Wherever possible, cluster new development near existing developed areas where there are adequate water supplies and</li> </ul>	<b>Partially Consistent.</b> The project site is surrounded by single-family homes. Per Section IV.I.2 (Utilities & Services Systems; Water), adequate water supplies are readily available to the project site through Cal Water. Further, an EVA road would be constructed within the southeastern

Table IV.F-1 (Continued)
County of San Mateo General Plan Consistency Analysis

Policy	Project Consistency/Comment
good access for fire vehicles.	portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. In addition, EVA to the project would be provided via the new private main access road.
	The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. Up to 20 percent road grades are allowed by County design exception. Additionally, per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road. For the various 20 percent grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE Fire Marshal has stated that this is not acceptable for primary access roads; however, the Department would allow this grade pending receipt of a finalized plan for all proposed roadway infrastructures. Refer to Mitigation Measure PS-2c.
(15.28b) Review Criteria for Locating Development in Fire Hazard Areas When development is proposed in hazardous fire areas, require that it be reviewed by the County Fire Warden to ensure that building materials, access, vegetative clearance from structures, fire flows and water supplies are adequate for fire protection purposes and in conformance to the fire policies of the General Plan.	<i>Consistent.</i> See consistency analysis for Policy 15.28a. Prior to construction of the proposed project, the project applicant will submit Final Maps, including details such as building materials, EVA/main access road siting, vegetation clearance, and fire flow/fire hydrant location compliance, to the County Fire Marshal for review.
<ul> <li>(15.30a) Standards for Water Supply and Fire Flow for New Development</li> <li>Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.</li> </ul>	<i>Consistent.</i> See consistency analysis for Policy 15.28b. Per a project service letter (see Appendix C of the DEIR and Section IV.J.2 (Utilities & Service Systems; Water)), Cal Water has stated that it is prepared to extend water service to the project site.
<ul> <li>(15.30b) Standards for Water Supply and Fire Flow for New Development</li> <li>Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.</li> </ul>	<i>Consistent.</i> See consistency analysis for Policy 15.30a. Prior to construction of the proposed project, the project applicant will submit a Final Map, including details such as fire flow and fire hydrant location compliance, to the County Fire Marshal for review. Hydrant spacing would not exceed 500 feet.
(15.30c) Standards for Water Supply and Fire Flow for New Development Consider the use of additional on-site fire protection devices	<i>Consistent.</i> See consistency analysis for Policies 15.28a, 15.28b, 15.30a, 15.30b. The proposed single-family residential structures would be installed with fire alarm

Policy	Project Consistency/Comment
including but not limited to the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.	systems and sprinkler systems.
(15.31a) Standards for Road Access for Fire Protection Vehicles to Serve New Development	<i>Consistent.</i> See consistency analysis for Policy 15.28a.
Consider the adequacy of access for fire protection vehicles during review of any new development proposal.	
(15.31b) Standards for Road Access for Fire Protection Vehicles to Serve New Development	<i>Consistent.</i> See consistency analysis for Policy 15.28a.
Determine the adequacy of access through evaluation of length of dead end roads, turning radius for fire vehicles, turnout requirements, road widths and shoulders and other road improvement considerations for conformance with the standards of the agency responsible for fire protection for the site proposed for development.	
(15.31c) Standards for Road Access for Fire Protection Vehicles to Serve New Development	<i>Consistent.</i> See consistency analysis for Policy 15.28a. The proposed access for emergency vehicles has been designed to
To the maximum extent possible, design access for fire protection vehicles in a manner which will not result in unacceptable impacts on visual, recreational and other valuable resources.	minimize impacts to visual or natural resources, and would not impact recreational resources. Refer to Section IV.A (Aesthetics) for a discussion of impacts.
(15.33a) Road Patterns Ensure road patterns that facilitate access for fire protection vehicles and provide secondary access and emergency evacuation routes when reviewing proposals for new subdivisions.	<i>Consistent.</i> CALFIRE requires a subdivision to provide secondary emergency access if the subdivision includes a dead-end road that exceeds a certain length. For parcels zoned for 1 to 4.99 acres, the maximum length is 1,320 feet. For parcels zoned for 5 to 19.99 acres, the maximum length is 2,640 feet. The project is in conformance with these requirements. See consistency analysis for Policy 15.28a.
(15.33c) Road Patterns	<i>Consistent.</i> See consistency analysis for Policy 15.28a. An EVA road would be constructed within the southeastern
Encourage fire protection agencies to identify emergency access and evacuation routes for existing developed areas and to provide this information to area residents.	portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. In addition, EVA to the project would be provided via the new private main access road.
(15.34a) Vegetative Clearance Around Structures Require clearance of flammable vegetation around structures as a condition of approval to new development in accordance with the requirements of the agency responsible for fire protection.	<i>Consistent.</i> Per Section IV.H.2 (Public Services; Fire Protection), the project applicant would implement fuel-modification and/or brush clearance on adjacent terrain as required by the San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE.

Policy	Project Consistency/Comment
(15.35) <i>Fire Retardant Vegetation</i> Encourage the use of fire retardant vegetation when reviewing new development proposals.	<i>Consistent.</i> To the extent feasible, the proposed landscape plan would include fire-retardant vegetation.
MAN-MADE	POLICIES
(16.11) Regulate Distribution of Land Uses Regulate the distribution of land uses to attain noise compatibility. Measures may include preference toward locating: (1) noise sensitive land uses within quiet areas, removed from Noise Impact Areas, and (2) noise generating land uses separate from noise sensitive land uses.	<i>Consistent.</i> Per applicable zoning regulations, the proposed project would be located on parcels zoned for low-residential land uses and would be compatible with existing surrounding land uses with similar zoning.
(16.13) Site Planning Noise Control Incorporate acoustic site planning into the design of new development, particularly large scale, master planned development, through measures which may include: (1) separation of noise sensitive buildings from noise generating sources and (2) use of natural topography and intervening structures to shield noise sensitive land uses.	<i>Consistent.</i> Sounds heard in a residential setting are usually associated with activities such as people talking, vacuuming, kids playing basketball, dogs barking, lawn mowing, doors closing, car engines starting, etc. These sounds are temporary in nature, occur intermittently, and do not affect the overall ambient noise level at the location of the residential development. Though the noise environment may change noticeably in some areas due to the occupation of the new residences, the noise associated with proposed single-family homes residences would not be incompatible with existing single-family residential uses.
(16.14) Noise Barriers Noise Control Promote measures which incorporate use of noise barriers into the design of new development, particularly within Noise Impact Areas. Noise barriers may include earth berms, walls, fencing, or landscaping.	<b>Partially Consistent.</b> Specific details are not available yet as no landscaping plans, fencing, earth berms, or walls have been proposed. Though the noise environment may change noticeably in some areas due to the occupation of the new residences, the noise associated with proposed single-family homes residences would not be incompatible with existing single-family residential uses.
(16.16) Construction Techniques Noise Control Promote measures which incorporate noise control into the construction of existing and new buildings, including, but not limited to, use of dense noise insulating building materials.	<b>Partially Consistent.</b> Specific details are not available yet as no homes have been proposed. Design of the structures is not available at this time and would be proposed after the Tentative Map is approved. However, the design of proposed homes will comply with current CBC standards and County Ordinance Codes related to noise control building measures in order to obtain a building permit.

Source: County of San Mateo General Plan, 1986; Christopher A. Joseph & Associates, 2008.

### IV. ENVIRONMENTAL IMPACT ANALYSIS G. NOISE

### **INTRODUCTION**

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for noise impacts to occur as a result of implementation of the Ascension Heights Subdivision project ("proposed project"). This includes the potential for the proposed project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project site; exposure of people in the vicinity of the project site to excessive noise levels, groundborne vibration, or groundborne noise levels; and whether this exposure is in excess of standards established in the local General Plan or County Ordinance Code. Finally, mitigation measures intended to reduce impacts are proposed, where appropriate, to avoid or reduce significant impacts of the proposed project. The following analysis presents the findings and conclusions of the following reports (refer to Appendix H and I of the DEIR):

- *Noise Assessment Study for Thomas Subdivision*, prepared by Illingworth & Rodkin, March 19, 2004;
- *Traffic Analysis Report*, prepared by Hexagon Transportation Consultants, Inc. (Hexagon), March 9, 2004; and
- Ascension Subdivision Residential Development, Draft Traffic Analysis Report, prepared by Hexagon, August 12, 2008.

### METHODOLOGY

This section has been prepared with respect to guidelines set forth by the County of San Mateo's General Plan, the County Ordinance Code, and the California Environmental Quality Act (CEQA). Implementation of the proposed project could result in the introduction of noise levels that may exceed permitted County noise levels. The primary sources of noise associated with the proposed project would be construction activities at the project site and project-related traffic volumes associated with operation of the proposed residential development. Secondary sources of noise would include new stationary sources (such as heating, ventilation, and air conditioning units) and increased human activity throughout the project site. The net increase in project site noise levels generated by these activities and other sources have been quantitatively estimated and compared to the applicable noise standards and thresholds of significance (refer to Appendix H).

### **Construction Noise Levels**

Construction noise levels were estimated based on data published by the U.S. Environmental Protection Agency (U.S. EPA). Potential noise levels are identified for off-site locations that are sensitive to noise, including existing residences.

### **ENVIRONMENTAL SETTING**

#### Fundamentals of Sound and Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. Possible causes of this objectionable nature are the pitch and/or loudness of a given sound. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals are perceived as louder to humans than signals with a lower pitch. Loudness is the intensity of sound waves combined with the reception characteristics of the ear. The intensity of sound may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. Technical terms are defined in Table IV.G-1 shown below.

	Definitions of Acoustical Terms
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, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dB(A)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes 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. All sound levels in this report are A-weighted, unless reported otherwise.
$L_{01}, L_{10}, L_{50}, L_{90}$	The A-weighted noised levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent of the time during the measurement period.
Equivalent Noise Level, L <sub>eq</sub>	The average A-weighted noise level during the measurement period.
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 PM to 10:00 PM and after addition of 10 dB to the sound levels measured in the night between 10:00 PM and 7:00 AM
Day/Night Noise Level, L <sub>dn</sub>	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB to levels measured in the night between 10:00 PM and 7:00 AM
L <sub>max</sub> , L <sub>min</sub>	The maximum and minimum A-weighted noise level during the measurement period.
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.

Table IV.G-1 Definitions of Acoustical Term

	Definitions of Acoustical Terms
Term	Definitions
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, Inc, Janu	ary 2004.

Table IV.G-1Definitions of Acoustical Terms

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dB(A). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dB(A) are shown in Table IV.G-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called  $L_{eq}$ . The most common averaging period is hourly, but  $L_{eq}$  can describe any series of noise events of arbitrary duration.

Noise Source at a Given Distance	dB(A)	Noise Environment	Subjective Impression
	140		
Civil defense siren, 100	130		
feet			
Jet takeoff, 200 feet	120		Pain threshold
	110	Rock music concert	
Diesel pile driver, 100 feet	100		Very loud
	90	Boiler room	
Freight cars, 50 feet		Printing press plant	
Pneumatic drill, 50 feet	80		
Freeway, 100 feet		Kitchen with garbage	
		disposal running	
Vacuum cleaner, 10 feet	70		Moderately loud
	60	Data processing center	
Light traffic, 100 feet	50	Department store	
Large transformer, 200 feet			
	40	Private business office	
Soft whisper, 5 feet	30	Quiet bedroom	
	20	Recording studio	
	10		Threshold of hearing
	0		
Source: Illingworth & Rodkin,	Inc., March	n 19, 2004.	

 Table IV.G-2

 Typical Sound Levels Measured in the Environment and Industry

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather and reflecting or shielding, also help intensify or reduce the noise level at any given location.

A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Solid walls, berms, or elevation differences typically reduce outdoor noise levels by 5 to 10 dB(A). Sound levels for an outdoor noise source may also be attenuated 3 to 5 dB(A) by a first row of houses and 1.5 dB(A) for each additional row of houses. Solid walls and windows typically reduce interior noise levels in residential structures by 17 dB(A) (with windows open) to 25 dB(A) (with windows closed). The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer homes is generally 30 dBA or more.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dB(A). Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dB(A).

Changes in noise levels of less than 3 dB(A) are not typically noticed by the human ear. Changes from 3 to 5 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. Typically, a 5 dB(A) increase is readily noticeable, and the human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound.

Since the sensitivity to noise increases during the evening and at night (excessive noise interferes with the ability to sleep), 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 PM - 10:00 PM) and a 10 dB addition to nocturnal (10:00 PM - 7:00 AM) noise levels. The Day/Night Average Sound Level ( $L_{dn}$ ) is essentially the same as CNEL, with the exception that the evening time period is dropped, and all occurrences during this 3-hour period are grouped into the daytime period.

The thresholds for speech interference indoors are about 45 dB(A), if the noise is steady, and above 55 dB(A), if the noise is fluctuating. Outdoors these thresholds are about 15 dB(A) higher. Interior residential standards for multi-family dwellings are set by the State of California at 45 dB(A)  $L_{dn}$ . Typically, the highest steady traffic noise level during the daytime is about equal to the  $L_{dn}$  and nighttime levels are 10 dB(A) lower.

### **Existing Noise Environment**

The project site is located in unincorporated San Mateo County east of the Bel Aire Road/Ascension Drive intersection. The property is predominantly vacant with surrounding residential, Public/Institutional, and intermittent open space land uses. The potable water tank (owned by the California Water Service Company (Cal Water)) and a cell transmitter site, enclosed by fencing and surrounded by Monterey pine trees, are located within the project site (APN: 041-111-020) and are served by a small access road that connects to Bel Aire Road. This road also serves as the only access point to the project site. This parcel is not a part of the proposed project. The major noise source affecting the site is traffic passing on Ascension Drive and Bel Aire Road, with noise from Polhemus Road and Interstate 280 (I-280), both located to the west, contributing to background noise levels on the site.

To evaluate the existing noise environment on the site, two long-term noise measurements were conducted. The first long-term measurement (Site 1) was conducted over a four-day period beginning at 8:00 PM on August 13, 2003 at an approximate distance of 100 feet from the centerline of Bel Aire Road. The hourly trend in noise levels measured for each day and averaged over the four-day measurement period, including the energy equivalent noise level ( $L_{eq}$ ), and the noise levels that exceeded 01, 10, 50, and 90 percent of the time (indicated as  $L_{01}$ ,  $L_{10}$ ,  $L_{50}$  and  $L_{90}$ ) are shown on Charts 1-1 through 1-4 and 1-A in Appendix H.

The second long-term measurement (Site 2) was conducted over a seven-day period beginning at 8:00 PM on August 18, 2003 at an approximate distance of 80 feet from the centerline of Ascension Drive. The hourly trend in noise levels measured for each day and averaged over the seven-day measurement period, including the energy equivalent noise level ( $L_{eq}$ ), and the noise levels that exceeded 01, 10, 50, and 90 percent of the time (indicated as  $L_{01}$ ,  $L_{10}$ ,  $L_{50}$  and  $L_{90}$ ) are shown on Charts 2-1 through 2-7 and 2-A in Appendix H.

When interpreting the noise measurement data, the  $L_{eq}$  noise level is typically considered the average noise level, while the  $L_1$  is considered the intrusive level, the  $L_{50}$  is considered the median noise level and the  $L_{90}$  is considered the background noise level. From a review of the charts in Appendix H the measurement results may be summarized as follows:

- Site 1: The daytime and nighttime average (L<sub>eq</sub>) noise levels at Site 1 were found to range from 44 to 50 dB(A) and 36 to 44 dB(A), respectively, with an average daytime L<sub>eq</sub> of 47 dB(A) and an average nighttime L<sub>eq</sub> of 41 dB(A). The average four-day L<sub>dn</sub> at this position was calculated to be 49 dB(A).
- Site 2: The daytime and nighttime average (L<sub>eq</sub>) noise levels at Site 2 were found to range from 43 to 49 dB(A) and 36 to 43 dB(A), respectively with an average daytime L<sub>eq</sub> of 47 dB(A) and an average nighttime L<sub>eq</sub> of 40 dB(A). The average seven-day L<sub>dn</sub> at this position was calculated to be 48 dB(A).

Based on the results of measurements, the existing noise environment at the project site falls below San Mateo County's normally acceptable noise threshold of 50 dB(A) for outdoor noise levels per the County Ordinance Code (see Regulatory Setting discussion below)..

### **REGULATORY SETTING**

### Federal

There are no federal noise regulations applicable to the proposed project.

### Groundborne Vibration

There are no federal standards for groundborne vibrations. However, for construction vibration assessments in cases where there is a significant potential for impact from construction activities, the Federal Transit Administration (FTA) has recommended that a vibration damage threshold criterion of 0.20 inches/second and 0.12 inches/second be applied to fragile buildings and extremely fragile historic buildings, respectively.<sup>1</sup>

### State

The California Department of Health Services (DHS), Office of Noise Control, published the Guidelines for Noise and Land Use Compatibility, which recommend guidelines for local governments to use when setting standards for human exposure to noise and preparing noise elements for general plans. These guidelines are summarized in Table IV.G-3, Noise and Land Use Compatibility Criteria. It should be noted that application of these guidelines to development projects is not mandated by the DHS; however, each jurisdiction is required to consider the Noise and Land Use Compatibility Criteria when developing its general plan noise element and when determining acceptable noise levels within its community.

As shown in Table IV.G-3, residential land uses and other noise sensitive receptors generally should be located in areas where outdoor ambient noise levels do not exceed 65 to 70 dB(A) ( $L_{dn}$  or CNEL). For single-family, duplex, and mobile homes, an exterior noise level up to 60 dB(A) ( $L_{dn}$  or CNEL) is considered to be a "normally acceptable" noise level, which is based on the assumption that any buildings involved are of normal construction that would not require special noise insulation. For multi-family homes, motels, and hotels, an exterior noise level up to 65 dB(A) ( $L_{dn}$  or CNEL) is considered to be a "normally acceptable" noise level up to 65 dB(A) ( $L_{dn}$  or CNEL) is considered to be a "normally acceptable" noise level. Between these noise values and 70 dB(A) ( $L_{dn}$  or CNEL), exterior noised levels for these land uses would be considered to be "conditionally acceptable," where construction should only occur after a detailed analysis of the noise reduction requirements is made and needed noise attenuation features are included in the project site. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. For commercial uses, exterior noise levels up to 70 dB(A) ( $L_{dn}$  or CNEL) are considered to be a "normally acceptable" noise levels up to 77 dB(A) ( $L_{dn}$  or CNEL) are considered to be a "normally acceptable" noise levels.

<sup>&</sup>lt;sup>1</sup> Harris Miller & Hanson Inc., 1995, Transit Noise Vibration Impact Assessment, Final Report, April.

	Community Noise Exposure (L <sub>dn</sub> or CNEL, dB)			
Land Use	Normally Acceptable <sup>1</sup>	Conditionally Acceptable <sup>2</sup>	Normally Unacceptable <sup>3</sup>	Clearly Unacceptable <sup>4</sup>
Single-family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 70
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging – Motels, Hotels	50 - 65	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters		50 - 70		above 65
Sports Arena, Outdoor Spectator Sports		50 - 75		above 70
Playgrounds, Neighborhood Parks	50 - 70		67 - 75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75		70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	
Notes:				

### Table IV.G-3 Noise and Land Use Compatibility Criteria

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Office of Noise Control, California Department of Health Services (DHS).

### **Groundborne Vibration**

There are no adopted State policies or standards for groundborne vibration. The traditional view has been that vibrations associated with highway traffic and construction poses no threat to buildings and structures, and that annoyance to people is no worse than other discomforts experienced from living near highways.<sup>2</sup>

<sup>2</sup> California Department of Transportation, Transportation Related Earthborne Vibrations, Technical Advisory Number TAV-02-01-R9601, February 20, 2002.

### Local

### County of San Mateo General Plan

### Man-Made Hazards (Noise Policies)

The General Plan designates areas as "Noise Impact Areas" if they experience noise levels of 60 dB(A) or greater. The following General Plan policies are applicable to the proposed project:

### 16.11 <u>Regulate Distribution of Land Uses</u>

• Regulate the distribution of land uses to attain noise compatibility. Measures may include preference toward locating: (1) noise sensitive land uses within quiet areas, removed from Noise Impact Areas, and (2) noise generating land uses separate from noise sensitive land uses.

### 16.12 <u>Regulate Noise Levels</u>

• Regulate noise levels emanating from noise generating land uses through measures which establish maximum land use compatibility and nuisance thresholds.

### 16.13 Site Planning Noise Control

• Incorporate acoustic site planning into the design of new development, particularly large scale, master planned development, through measures which may include: (1) separation of noise sensitive buildings from noise generating sources and (2) use of natural topography and intervening structures to shield noise sensitive land uses.

### 16.14 Noise Barriers Noise Control

• Promote measures which incorporate use of noise barriers into the design of new development, particularly within Noise Impact Areas. Noise barriers may include earth berms, walls, fencing, or landscaping.

### 16.15 Architectural Design Noise Control

• Promote measures which incorporate architectural techniques into the design of new buildings, particularly buildings within Noise Impact Areas. Architectural design techniques may include: (1) grouping noise sensitive rooms together separated from noise sources, (2) placing windows, vents and other openings away from noise sources, and (3) avoidance of structural features which direct noise toward interior spaces.

### 16.16 Construction Techniques Noise Control

• Promote measures which incorporate noise control into the construction of existing and new buildings, including, but not limited to, use of dense noise insulating building materials.

### San Mateo County Ordinance Code

The County is the local agency responsible for adopting and implementing policies as they relate to noise levels and its effect on land uses within its jurisdiction. Both acceptable and unacceptable noise levels associated with construction activities, roadway noise levels and ambient noise levels must all be defined and quantified. The County has numerous ordinances and enforcement practices that apply to intrusive noise, as well as ones that guide new construction. The County's comprehensive Ordinance Code (Chapter 4.88, Noise Control) sets forth sound measurement and criteria, maximum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain uses, standards for determining when noise is deemed to be a disturbance to the peace, and legal remedies for violations.

Please refer to Table IV.G-4 below for the applicable County of San Mateo Ordinance Code noise and land use compatibility criteria. Per the County Ordinance Code, ambient noise levels above 65 dB(A) for longer than 5 minutes in any hour during daytime (7:00 AM to 10:00 PM) and 60 dB(A) during nighttime hours (10:00 PM to 7:00 AM) would be incompatible with residential land uses.

### Table IV.G-4 San Mateo County Ordinance Code Noise and Land Use Compatibility Criteria

	Maximum Noise Level (dB(A))			
Time of Day	30 Minutes in any	15 Minutes in any	5 Minutes in any	
	Hour	Hour	Hour	
7:00 AM - 10:00 PM	55	60	65	
10:00 PM - 7:00 AM	50	55	60	
Source: County of San Mateo Ordinance Code, Chapter 4.88 (Noise Control). Accessed by CAJA Staff at				
http://www.ordlink.com/codes/sanmateo/index.htm on November 3, 2008.				

Per an exemption to the County Ordinance Code (Section 4.88.360, Exemptions), short-term construction noise may exceed these standards, providing that all construction activities are limited to weekdays between 7:00 AM and 5:00 PM.

### **ENVIRONMENTAL IMPACTS**

### **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental noise impact if it would:

- a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies;
- b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d) A substantial temporary or periodic increase in ambient noise levels in the project above levels existing without the project;
- e) Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such plan has not been adopted, within two miles of a public airport or public use airport; or
- f) Exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.

CEQA does not define what noise level increase would be considered substantial. Typically, an increase in the  $L_{dn}$  noise level resulting from the project at noise sensitive land uses of 3 dB(A) or greater would be considered a significant impact when projected noise levels would exceed those considered satisfactory for the affected land use. If the noise environment at the sensitive land use is at or below normally-acceptable noise levels, an increase in noise levels of 5 dB(A) or greater would be considered significant.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section V.C (Impacts Found To Be Less Than Significant) of this DEIR, the potential impacts associated with Thresholds (b), (e) and (f) listed above were determined to result in no impact. Therefore, only Thresholds (a), (c), and (d) listed above are addressed in the following discussion.

### **Project Impacts and Mitigation Measures**

### Impact NOISE-1 Temporary Increases in Noise (Construction Noise)

Due to the scope and complexity of the grading and utilities, all work proposed on the tentative map is proposed to be complete in one phase. The grading phase would require approximately 34 to 44 days for completion, with the appropriate utility infrastructure added after this phase. The construction of the new private street would require an additional 6 months post the grading phase. All utility stubouts would be completed as part of the one phase tract improvements. The building schedule and phasing of the individual houses has not yet been determined; however, it is assumed for this analysis that buildout would be completed in 4.5 - 5 years.

### **On-Site Construction**

Noise generated during construction would differ depending on the construction phase and the type and amount of equipment used at the construction site. Table IV.G-5 provided below presents typical ranges of energy equivalent noise levels ( $L_{eq}$ ) at 50 feet for housing construction. Further, the U.S. EPA has compiled data related to the noise-generating characteristics of specific types of construction equipment and noise levels that can be achieved with implementation of feasible control measures. These data are presented in Table IV.G-6. As shown in Table IV.G-6, noise levels generated by heavy equipment can range from

approximately 76 dB(A) to 89 dB(A) when measured at 50 feet and 70 dB(A) to 83 dB(A) when measured at 100 feet, without implementation of noise reduction measures. Typically, the noisiest pieces of equipment used during similar construction projects include jackhammers and pavers, which produce noise levels of approximately 75 and 80 dB(A) at 50 feet with implementation of the required feasible noise reduction control measures. As with all construction equipment, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dB(A) per doubling of distance.

### Table IV.G-5 Noise Levels by Construction Phases for Domestic Housing

Typical Ranges of Energy Equivalent Noise Levels at 50 Feet L <sub>eq</sub> in dBA at Construction Sites			
Construction Phase	All Pertinent EquipmentMinimum Required EquipmentPresent at the SitePresent at the Site		
Ground Clearing	83	83	
Excavation	88	75	
Foundations	81	81	
Erection	81	65	
Finishing	88	72	
Source: USEPA, Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.			

Potential of Construction Equipment Noise at 50 and 100 Feet (in dB[A])				
	Noise Level at 50 Feet		Noise Level at 100 Feet	
Equipment	Without Controls	With Controls <sup>1</sup>	Without Controls	With Controls <sup>1</sup>
Earthmoving				
Front Loaders	79	75	73	69
Backhoes	85	75	79	69
Dozers	80	75	74	69
Tractors	80	75	74	69
Graders	85	75	79	69
Pavers	89	80	83	74
Trucks	82	75	76	69
Materials Handling				
Concrete Mixer	85	75	79	69
Concrete Pump	82	75	76	69
Crane	83	75	77	69
Concrete Crusher	85	75	79	69
Stationary				
Pumps	76	75	70	69
Generator	78	75	72	69
Compressors	81	75	75	69
Impact				
Jack Hammers	88	75	82	69
Pneumatic Tools	86	80	80	74

 Table IV.G-6

 Noise Levels and Abatement

 Potential of Construction Equipment Noise at 50 and 100 Feet (in dB[A])

Totential of Construction Equipment Noise at 30 and 100 Feet (in ub[A])				
	Noise Level	Noise Level at 50 Feet		t 100 Feet
Equipment	Without Controls	With Controls <sup>1</sup>	Without Controls	With Controls <sup>1</sup>
Other				
Saws	78	75	72	69
Vibrators	76	75	70	69
Notes: Noise levels that can be achieved with implementation of feasible noise controls. Feasible noise controls include selecting quieter procedures or machines and implementing noise-control features requiring no major redesign or extreme cost (e.g., improved mufflers, equipment redesign, use of silencers, shields, shrouds, ducts, and engine enclosures).				
	l Protection Agency, "Noise " NTID 300-1, 1971.	from Construction Equip	oment and Operations, Build	ding Equipment, and

Table IV.G-6
Noise Levels and Abatement
Potential of Construction Equipment Noise at 50 and 100 Feet (in dB[A])

Based on a review of the proposed site plan and vicinity maps (refer to Figures III-3, III-4, III-12 and III-18), site grading and home construction on the northeast portion of the site may take place as close as 50 feet from the rear of the existing residences fronting on Parrott Drive. Other area residences will be further removed from the construction activities at 200 feet or more from the proposed home pads. Construction activities for the proposed project would include site grading, road paving, removal of material, foundation work, framing, and exterior & interior finishing. The highest noise levels would be generated during site grading, with somewhat lower noise levels occurring during building construction and finishing. When site work (i.e., ground clearing, excavation, paving and foundation work) activities are occurring near the residences adjacent to the site, specifically along the edges of the site, daytime levels can be expected to significantly exceed existing noise levels. As construction proceeds to the interior of the site noise levels at these residences will diminish. Per an exemption to the County Ordinance Code (Section 4.88.360, Exemptions), short-term construction noise may exceed the standard outlined in Table IV.G-4, providing that all construction activities are limited to weekdays between 7:00 AM and 5:00 PM. However, noise produced by construction activities would be audible and exceed the measurement average existing noise levels by 3 dB(A) or more during the entire construction period at nearby residences. Therefore, construction activities on the project site would result in a substantial temporary and periodical increase in noise levels at adjacent land uses, constituting a *significant* impact.

### Off-Site Haul Trips

It is estimated that approximately 69 soil haul truck trips per day for approximately a maximum of 44 days (approximately 3,036 truck round trips for soil export) would be needed to complete the proposed project site grading.<sup>3</sup> Though the route used to haul material from the site has not been established at this time, Section IV.I (Transportation/Traffic) recommended that the haul route be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road in order to minimize the number of residential streets used by trucks. Per Section IV.I (Transportation/Traffic), trucks shall not

<sup>&</sup>lt;sup>3</sup> *Refer to Section IV.I (Transportation/Traffic) for a detailed discussion of construction-related haul truck trips.* 

utilize Ascension Drive because of the existing traffic level and the steep grade. Existing noise levels along the other abovementioned residential streets would be similar to those measured for Bel Aire Road (Site 1) and Ascension Drive (Site 2).

Per Table IV.G-6, the typical noise levels generated by slow moving heavy duty trucks with and without implementation of control measures would be expected to range from 75 to 82 dB(A) and 69 to 76 dB(A) at a typical residential façade setback from the roadway centerline of 50 feet and 100 feet, respectively. If the number of haul trucks per hour leaving the site are considered to be relatively constant over the 44-day material removal period (i.e., approximately 6 to 7 trips per hour between 8:00 AM and 6:00 PM, then the average hourly noise levels at the residential facades along the haul routes would increase from current noise levels in the high 40 to low 50 dB(A) range to the mid to high 60 dB(A) range with and without implementation of control measures on haul trucks. Based on this analysis, noise produced by the soil haul trucks trips associated with project's construction period would cause average noise levels at land uses along the haul route to increase by more than 3 dB(A), producing a noticeable, but intermittent noise impact during the period of site grading requiring soil export. Based on the above discussion, noise generated along the soil haul truck route on local, residential roads during the projects construction period would constitute a *significant*, short-term noise impact.

The following mitigation measures would be implemented to lessen the above impacts associated with Impact NOISE-1 by reducing noise levels associated with project construction; however, it is possible that people at adjacent land uses and along roadways used by haul trucks would continue to experience increases in noise greater than 3 dB(A) during the project's construction period. Therefore, even with implementation of the mitigation measures outlined below, impacts related to short-term noise increases would remain *significant and unavoidable*.

### Mitigation Measure NOISE-1

- 1. The following measures shall be required to limit construction and related activities to the time of the day when the number of persons in the adjacent residential uses would be lowest:
  - a. Construction activity shall be limited to the hours of 8:00 AM and 4:30 PM Monday through Friday.
  - b. No machinery shall be cleaned past 6:00 PM or serviced past 6:45 PM, Monday through Friday.
  - c. To minimize impacts to traffic and public safety, it is recommended that truck traffic for soil export from the project site be limited to between the hours of 10:00 AM and 3:00 PM.
  - d. No construction shall be allowed on Sundays and holidays or without permission from the County.
- 2. Feasible noise controls to minimize equipment noise impacts on nearby sensitive receptors shall be implemented. Feasible noise controls include improved mufflers, use of intake silencers,

ducts, engine enclosures, and acoustically-attenuating shields or shrouds.

- 3. Equipment used for project construction shall be hydraulically or electrically powered impact tools (e.g., jack hammers) wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools. Where use of pneumatically-powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. A muffler could lower noise levels from the exhaust by up to about 10 dB(A). External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dB(A). Quieter procedures shall be used (such as drilling rather than impact equipment) wherever feasible.
- 4. Construction equipment with internal combustion engines shall not be allowed to idle unnecessarily. All equipment should be turned off when not in use.
- 5. All stationary noise-generating construction equipment, such as air compressors, shall be located as far as practical from existing nearby residences and other noise-sensitive land uses. Such stationary equipment shall be acoustically-shielded.
- 6. Heavy equipment, such as paving and grading equipment, shall be stored on-site whenever possible to minimize the need for extra heavy truck trip on local, residential, streets.
- 7. The project applicant shall notify all residents within a 2,000-foot radius of the project of the projects estimated construction schedule. This notification shall include a description of the types of construction activities and their approximate duration.
- 8. A "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise, shall be designated. This individual would most likely be the contractor or a contractor's representative. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.), if one is made, and shall require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and shall include it in the notice sent to neighbors regarding the construction schedule.

### Impact NOISE-2 Result in Permanent and Temporary/Periodic Increases in Noise

### **On-Site** Operation

The proposed project includes the development of 25 new single-family homes within a partially vacant site, which is located adjacent to existing single-family residential uses surrounding the site. Residential developments are not considered "noisy" uses because they do not involve stationary noise sources that substantially increase the ambient noise levels at the development location or in the vicinity. Sounds heard in a residential setting are usually associated with activities such as people talking, vacuuming, kids playing basketball, dogs barking, lawn mowing, doors closing, car engines starting, etc. These sounds are temporary in nature, occur intermittently, and do not affect the overall ambient noise level at the location of the residential development. Though the noise environment may change noticeably in some areas due

to the occupation of the new residences, the noise associated with proposed single-family homes residences would not be incompatible with existing single-family residential uses. Therefore, operational noise impacts would be *less than significant* and no mitigation measures are required.

### Traffic Impacts

Typically the primary increase in noise levels created by a new residential development is associated with the traffic generated by the development. Most affected by this increase in noise level are land uses located along roadways used by the residential-related traffic. Generally, transportation noise levels increase by 3 to 5 dB(A) (a perceptible noise level increase) with a doubling in traffic. Traffic generated by the project would increase the existing noise levels along roadways that would be used by projectrelated traffic. However, the Traffic Analysis Report (2008) prepared for the proposed project shows that traffic associated with the project would not result in a doubling of traffic volumes (refer to Section IV.I, Transportation/Traffic and Appendix I of the DEIR). The increase in traffic due to the project would result in no more than a 1 dB(A) increase in noise levels along area roadways under the Near Term (2013)traffic scenario, over the existing noise environment. Further, based on the results of the long-term noise measurements and review of future traffic conditions (Cumulative (2020)) as analyzed in Section IV.I (Transportation/Traffic), all proposed lots on the project site would be exposed to environmental noise levels of less than 55 dB(A) under Cumulative (2020) traffic conditions and would thus be fully compatible with the intended residential use. Because noise levels associated with project traffic would not result in an increase of 3 dB(A) or more, traffic noise impacts on the proposed on- and off-site land uses would be *less than significant* and no mitigation measures are required.

### **CUMULATIVE IMPACTS**

This cumulative impact analysis considers development of the proposed project in combination with ambient growth and other related projects within the vicinity of the proposed project (see Table III-1, Related Projects). As noise is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases, only projects and ambient growth in the nearby area could combine with the proposed project to result in cumulative noise impacts.

### **Temporary Increases in Noise (Cumulative Construction Noise)**

Development of the proposed project in conjunction with the related projects would result in an increase in construction-related noise in a partially urbanized area of the County. As outlined in Table III-1, several related projects are located in the project vicinity. However, none of the related projects would be located directly adjacent to the proposed project site; albeit, Project Nos. 1, 2, 6 and 22, which would be located in the project vicinity. Each of the related projects would be subject to the County Ordinance Code, which reduces construction noise impacts to the maximum extent feasible by prohibiting loud, unnecessary, and unusual construction activities within a certain distance from any residential zone; and limits the hours of allowable construction activities. Conformance with these County regulations would help to reduce construction-related noise for the related projects. Depending on the actual construction dates of the proposed project and various related projects, it is possible that the grading and construction phases, including the use of heavy trucks on area roads, could overlap resulting in temporary cumulative increases in noise levels. While some noise generated during construction of these projects would be blocked and/or absorbed by intervening terrain and structures, cumulative noise impacts during grading and construction are considered to be potentially significant. Furthermore, as stated previously under Impact NOISE-1, although mitigation measures would be implemented to lessen the short-term construction noise impacts, it is possible that adjacent land uses would experience increases in noise greater than 3 dB(A) during the project's construction period. Therefore, in a worst-case scenario overall impacts related to short-term cumulative noise increases would remain *significant and unavoidable*.

### **Cumulative Operational Noise**

As stated previously, the Traffic Analysis Report (2008) prepared for the proposed project shows that traffic associated with the Cumulative-With-Project (2020) traffic scenario would not result in a doubling of traffic volumes (refer to Section IV.I, Transportation/Traffic and Appendix I of the DEIR). As such, cumulative increases in traffic due to the project would result in no more than a 2 dB(A) increase in noise levels along area roadways over the existing noise environment. Because noise levels associated with Cumulative-With-Project (2020) traffic would not result in an increase of 3 dB(A) or more, cumulative traffic noise impacts on the proposed on- and off-site land uses would be *less than significant* and no mitigation measures are required.

### LEVEL OF SIGNIFICANCE AFTER MITIGATION

Short-term construction noise would remain *significant and unavoidable*, while all other noise impacts would be *less than significant*.

### IV. ENVIRONMENTAL IMPACT ANALYSIS H. PUBLIC SERVICES 1. POLICE

### INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of public services with respect to the proposed Ascension Heights Subdivision project ("proposed project") and includes an examination of the existing services provided to the project site and the impacts that the proposed project would have on those services. The public services section is subdivided into the following four sections: (1) Police; (2) Fire Protection; (3) Schools & Libraries; and (4) Recreation/Parks.

### METHODOLOGY

Potential project impacts associated with police protection services were evaluated based on the adequacy of existing and planned staffing, equipment, and facilities of the San Mateo County Sheriff's Department (Sheriff's Department) to meet the additional demand for police protection services resulting from development of the proposed project. The following factors were taken into consideration in performing the impact analysis: effects of the proposed project on response times, calls for service, and levels of service; and the need for new officers, associated equipment, and facility space. The responsible agency was contacted regarding the potential impacts on its facilities. Responses from public services agencies are included in Appendix C to this DEIR. In addition, various public service policies and guidelines as defined by San Mateo County were also reviewed and considered during the project impact analysis.

### **ENVIRONMENTAL SETTING**

The County of San Mateo Sheriff's Office of Emergency Services (OES) is comprised of the Law, Search and Rescue Unit and the Emergency Management Joint Powers Authority.<sup>1</sup> The units have different funding sources, but work together in accordance with the state-mandated Standardized Emergency Management System (SEMS).

The Law, Search and Rescue Unit provides law enforcement support services by utilizing specially trained active and reserve peace officers and volunteers. Law enforcement activities provided by this unit include missing persons searches, water and cliff rescue, crime scene searches, tactical law enforcement support, security for special events and dignitary protection. Specialized units include the air squadron, cliff rescue, diver unit, mountain rescue, marine unit, mounted unit, off-road motorcycle unit, and the emergency services and communications unit as well as two youth Explorer units.

<sup>&</sup>lt;sup>1</sup> County of San Mateo, Office of Emergency Services, FY 2003 and 2 004 Recommended Budget. Accessed by CAJA Staff at http://www.co.sanmateo.ca.us/vgn/images/portal/cit\_609/3846512-199.pdf on November 14, 2008.

Emergency Management is funded through a Joint Powers Agreement (JPA) between the 20 cities and the County of San Mateo. This unit provides emergency planning, training, preparedness exercises, and field response. The unit responds to about 65 major emergency incidents each year. OES staff works closely with the Environmental Health and the Hazardous Materials Response Team, which is also a part of the JPA Program, in response to hazardous spills and contamination/clean-up incidents.

The primary agency responsible for serving the proposed project site with police protection services is the Sheriff's Department. The station that currently serves the project area is the Headquarters Patrol located at the Hall of Justice in Redwood City.<sup>2</sup> Additionally, the Highlands Patrol Area provides office space for report-taking. The proposed project is located in the "40 Beat" Reporting District.

The Sheriff's Department currently employs 303 sworn officers and 286 civilian employees.<sup>3</sup> The existing level of service for the Sheriff's Department is one shift patrol officer per 2,500 residents. At the Headquarter Patrol, there is one sworn and one civilian deputy with 12-hour shifts each over a 24 hour a day, 7 day-a-week coverage.<sup>4</sup> Existing staff levels at this station are adequate to meet the current demands for protection services in the project area. Currently, the Sheriff's Department determines staffing levels per assignment rather than population ratios. This is due, in part, to other staff assignments such as bailiffs, Corrections, Transit, and investigations.

Unlike fire protection services, police units are often in a mobile state. Hence, actual distance between a headquarters facility and the project site is often of little relevance. Instead, the number of officers out on the street is more directly related to the realized response time. Response time is defined as the total time from when a call requesting assistance is placed until the time that a police unit responds to the scene. Calls for police assistance are prioritized based on the nature of the call. The average response time for high priority calls in the project area is 2 to 3 minutes and 8 to 10 minutes for low priority calls. Equipment levels are also adequate to serve current demand, including vehicles and ancillary supplies.<sup>5</sup>

Table IV.H-1 shows crime trends in San Mateo County for the years 2004, 2005, and 2006. The crime rate near the project site is very low, and the existing level of police service provides adequate protection to the project site and surrounding community.<sup>6</sup> The crime rate near the proposed project is lower compared to the overall crime rate for other unincorporated areas of the County of San Mateo.<sup>7</sup>

- <sup>6</sup> Ibid.
- <sup>7</sup> Ibid.

<sup>&</sup>lt;sup>2</sup> County of San Mateo, Mark Hanlon, Captain, Sheriff's Office, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>3</sup> U.S. Department of Justice, Bureau of Justice Local Agency Profile. Accessed by CAJA Staff at http://bjsdata.ojp.usdoj.gov/dataonline/Search/Law/Local/LocalAgencyProfile.cfm on November 14, 2008.

<sup>&</sup>lt;sup>4</sup> County of San Mateo, Mark Hanlon, Captain, Sheriff's Office, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>5</sup> Ibid.

Crimes	2004*		2005*		2006*	
	Number of Crimes	Crimes/100,000 Population	Number of Crimes	Crimes/100,000 Population	Number of Crimes	Crimes/100,000 Population
Total violent crimes	2,168	300.8	2,447	339.2	2,195	300.9
Homicide	26	3.6	30	4.2	22	3.0
Forcible rape	156	21.6	155	21.5	155	21.3
Robbery	685	95.0	715	99.1	716	98.2
Aggravated assault	1,301	180.5	1,547	214.4	1,302	178.5
Total property crimes	9,710	1,347.3	9,744	1,350.7	9,504	1,303.0
Burglary	2,935	407.2	3,335	462.3	2,969	407.0
Motor vehicle theft	2,943	408.4	2,732	378.7	2,749	376.9
Notes: * The population of San Mateo County in 2004, 2005, and 2006 was 720,700, 721,400, and 729,400, respectively. Source: Office of the Attorney General, Criminal Justice Statistics Center. Accessed by CAJA Staff at						

Table IV.H-1 County of San Mateo Crime Index (CCI), 2004-2006

Source: Office of the Attorney General, Criminal Justice Statistics Center. http://stats.doj.ca.gov/cjsc\_stats/prof06/41/1.htm on October 29, 2008.

### **REGULATORY SETTING**

### **Federal and State**

Currently no federal or State policies and/or mandates related to police services exist. Therefore, in addition to the thresholds of significance outlined in Appendix G of the CEQA Guidelines, the local policies and guidelines associated with police services as defined by San Mateo County will be utilized for this analysis.

### Local

### County of San Mateo General Plan

#### 7.21 Suitable Land within City Sphere of Influence

Consider that lands may be included within a city sphere of influence only if they are generally • suitable for urban services (e.g., public sewer systems, public water supplies, fire and police protection) and urban land uses.

### **ENVIRONMENTAL IMPACTS**

### **Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant environmental impact related to police services if it would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable police service ratios, response times or other performance objectives for police services.

### **Proposed Project**

An Emergency Vehicle Access (EVA) road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. This roadway would include the following features: a 20-foot wide street surface; a vehicle turn out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of 20 percent, with 2 percent surface slopes (refer to Figures III-15 and III-16 in Section III, Project Description of this DEIR).

#### **Project Impacts and Mitigation Measures**

#### Impact PS-1 Police Services

Implementation of the proposed project could result in an increased need for police services during both the short-term construction phase and long-term operational phase.

#### Construction

Construction sites can be sources of attractive nuisances, providing hazards, and inviting theft and vandalism. Therefore, when not properly secured, construction sites can become a distraction for local law enforcement from more pressing matters that require their attention. Consequently, developers typically take precautions to prevent trespassing through construction sites. Most commonly, temporary fencing is installed around the construction site to keep out the curious. Deployment of roving security guards is also an effective strategy in preventing problems from developing. The project would employ construction security features, such as fencing, which would serve to minimize the need for Sheriff's Department services. Traffic generated by construction workers and trucks would occur primarily during off-peak traffic hours. Although minor traffic delays could result from construction activities at times, these impacts would be temporary in nature and would be coordinated with local police and emergency officials. Therefore, impacts associated with police services during construction would be *less than significant* and no mitigation measures are required.

### Operation

Implementation of the proposed project would increase the demand for police services in the project area. The project would demand police services for 25 single-family homes from the Sheriff's Department. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>8</sup> As such, the additional amount of people and activity on the project site could result in an increase in the need for police services.

The crime rate, which represents the number of crimes reported, affects the "needs" projection for staff and equipment for the Sheriff's Department. The crime rate in a given area would increase as the level of activity or population, along with the opportunities for crime, increases. However, because a number of other factors also contribute to the resultant crime rate such as police presence, crime prevention measures, and on-going legislation/funding, the potential for increased crime rates is not necessarily directly proportional to increases in land use activity. As Table IV.H-1 shows, despite population increasing, the crime rate in the County of San Mateo decreased from 2005 to 2006.

Although the project would increase the number of persons and level of activity on the project site, given the type of use and its similarity to the surrounding area, it is reasonable to expect that the project would not result in a meaningful increase in the amount of crime in the project area. Given that the project is not expected to generate a considerable increase in crime, the effect that the project would have on response times would be minimal, if at all. The Sheriff's Department is currently participating in a State Audit to determine best practice staffing levels and no projections for future demands have been developed. No new police facilities or expansion of existing of existing facilities would be required in order to accommodate the project's demand for police services. Furthermore, existing staffing levels and equipment are adequate to meet current demands for protection services in the project area, while target response times would not change or be affected.<sup>9</sup> Typically, community input and contract negotiations for locations such as the Highlands area address growing demands for police services.

The proposed project would incorporate good street lighting, signage, and address numbering, which would reduce the project's demand for police services.<sup>10</sup> Additionally, the EVA road that would be constructed within the southeastern portion of the site (refer to Section III, Project Description, discussion) would conform to requirements for emergency access. Therefore, impacts associated with police services would be *less than significant* and no mitigation measures are required.

### **CUMULATIVE IMPACTS**

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the demand for police services. Specifically, there would be increased demands for additional Sheriff's Department staffing, equipment, and facilities over time. Increases in population and employees in the City of San Mateo, the unincorporated San Mateo County and the City of Hillsborough (for any future development not currently listed in Table III-1) have the potential to increase average response times, primarily for non-emergency calls. However, cumulative impacts would not be considered significant without a sudden and sustained increase in crime.

<sup>&</sup>lt;sup>8</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

<sup>&</sup>lt;sup>9</sup> County of San Mateo, Mark Hanlon, Captain, Sheriff's Office, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>10</sup> Ibid.

Only 15 of the 22 related projects are located inside the City of San Mateo, which approved a two percent increase in the City's hotel tax in November 1998. This money is being used to build a new police station, seismically retrofit five fire stations, and build a new fire station in Lakeshore Park; all of these projects together total nearly \$40 million dollars. According to the Sheriff's Department, the remaining projects will not represent a significant increase in calls for service.<sup>11</sup> No future demand projections based on cumulative, projected growth have been identified under existing conditions. Therefore, cumulative impacts associated with police services would be *less than significant* and no mitigation measures are required.

### LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to police services created by the proposed project would be *less than significant*.

<sup>&</sup>lt;sup>11</sup> Ibid.

### IV. ENVIRONMENTAL IMPACT ANALYSIS H. PUBLIC SERVICES 2. FIRE PROTECTION

### METHODOLOGY

Potential project impacts associated with fire protection services were evaluated based on the adequacy of existing and planned staffing, equipment, and facilities of both the San Mateo City Fire Department (specifically Station 27) and the California Department of Forestry and Fire (CALFIRE, specifically Station 17) to meet the additional demand for fire protection and emergency medical services resulting from development of the proposed project. The responsible agencies were contacted regarding the potential impacts on their facilities. Responses from public services agencies are included in Appendix C to this DEIR. In addition, various public service policies and guidelines as defined by San Mateo County, the San Mateo City Fire Department and the CALFIRE were also reviewed and considered during the project impact analysis.

### **ENVIRONMENTAL SETTING**

Dispatching for the County of San Mateo involves one dispatch center, "County Communications Center" for all areas of the County, including the project area.<sup>12</sup> All the various fire jurisdictions, as well as other emergency services, are dispatched through the County Communications Center. Additionally, all fire jurisdictional boundaries have been dropped for emergency response. The purpose of this boundary drop is to have the closest available equipment respond, and provide immediate emergency services. The type and severity of the emergency will dictate the actual number and type of emergency equipment that is dispatched to respond.

The San Mateo City Fire Department participates in a JPA providing automatic aid response throughout the County of San Mateo's fire service delivery system.<sup>13</sup> Fire protection to the project site and surrounding areas is also provided by the CALFIRE by contract with the County of San Mateo Fire Protection Services Program.<sup>14</sup> Additional agencies, which provide the closest resources and mutual aid

<sup>14</sup> County of San Mateo, Fire Protection Services. Accessed by CAJA Staff at http://www.co.sanmateo.ca.us/smc/department/home/0,,793206416\_793206467,00.html on November 14, 2008.

<sup>&</sup>lt;sup>12</sup> County of San Mateo, Jim Rust, (Former) Fire Marshal, Environmental Services Agency, Response to Service Letter, September 16, 2003.

<sup>&</sup>lt;sup>13</sup> San Mateo City Fire Department. About Us. Accessed by CAJA Staff at http://www.cityofsanmateo.org/index.asp?NID=76 on November 14, 2008.

to the site and surrounding area, include the Woodside Fire Protection District, Central County Fire, Belmont/San Carlos Fire District, and Half Moon Bay Fire District.<sup>15</sup>

### **Response Times and Staffing**

Depending on what type of emergency is called in, the proposed project would primarily be served by San Mateo City Fire Department's Station 27 (located at 1801 De Anza Boulevard in the City of San Mateo).<sup>16</sup> Station 27 houses Medic Engine 27, a captain, firefighter, and firefighter/medic. Station 27 is located approximately 1.25 miles from the project site and the average response time for the project area is five minutes.<sup>17</sup> This distance and response time meet the desired performance standards set by the JPA. The San Mateo City Fire Department's record in meeting this response time is 95 percent, which meets the desired performance standards. The current service ratio is 23 firefighters per 95,000 residents. The San Mateo City Fire Department does not have a preferred ratio of firefighters per population.

If the emergency escalated or warranted further personnel and equipment, County of San Mateo Fire Department/CALFIRE Station 17 (located at 320 Paul Scannell Drive in the City of San Mateo) would also respond.<sup>18</sup> Station 17 houses two Type I fire engines, one Type III fire engine, one Transport, and one Bull Dozer. Station 17 houses a Battalion Chief and all fire engines are staffed with a minimum of three firefighters per apparatus. The average response time for Station 17 to the project area is approximately three to four minutes. This response time meets the desired performance standards set by the JPA. County of San Mateo Fire Department/CALFIRE does keep track of its service ratio and does not have a preferred ratio of firefighters per population.<sup>19</sup>

### **Fire Flow**

California Water Service Company's (Cal Water) Mid-Peninsula Water District currently provides fire flow for the proposed project. Fire flows are supplied by the same water mains as the domestic water system, including the lines located in local streets and major roadways. Fire flows are supplied by the same water mains as the domestic water systems, including the lines located in the local streets and major roadways. In general, fire flow requirements are closely related to land use as the quantity of water necessary for fire protection varies with the type of development, life hazard, type and level of occupancy, and degree of fire hazard (based on such factors as building age or type of construction). All

<sup>&</sup>lt;sup>15</sup> San Mateo City Fire Department, Maurice Dong, Deputy Fire Marshal, Response to Service Letter, July 31, 2008.

<sup>&</sup>lt;sup>16</sup> San Mateo City Fire Department, Maurice Dong, Deputy Fire Marshal, Response to Service Letter, July 31, 2008.

<sup>&</sup>lt;sup>17</sup> San Mateo City Fire Department, Maurice Dong, Deputy Fire Marshal, Response to Service Letter, July 31, 2008.

<sup>&</sup>lt;sup>18</sup> County of San Mateo / CALFIRE, Pete Munoa, (Former) Fire Marshal, Response to Service Letter, September 20, 2008.

<sup>&</sup>lt;sup>19</sup> County of San Mateo / CALFIRE, Pete Munoa, (Former) Fire Marshal, Phone Interview with CAJA Staff, November 21, 2008.

water mains and lines that are designed and sized according to the required standards take into account fire flow and pressure requirements. Refer to Section IV.J.2 (Water) of this DEIR for a discussion of water service infrastructure in the project area. According to CALFIRE, there are currently no known fire flow or pressure issues in the project area.<sup>20</sup> However, according to Cal Water, the existing water system would not have adequate pressure to serve fire protection standards.<sup>21</sup>

# Wildfire Hazards

As an element of California's ecology, wildfires are as natural and inevitable as wind or rain. All the factors that affect wildland fire behavior can be categorized into three environment elements: weather, topography, and fuel. It is unlikely that humans will ever be able to control, manage, or change the effects of weather or topography on wildfire behavior, but it is possible to manage fuel, both vegetative and structural, which provides the basis for fire protection planning. According to CALFIRE, the project site is located outside of, but adjacent to, area that is classified as possibly containing substantial fire hazard risks (refer to Figure IV.H-1). However, the project site is located within a Community at Risk zone according to the County's Fire Threatened Communities Map, which depicts the general risk within neighborhoods and the relative risk from community to community.<sup>22</sup> Therefore, the project site can be susceptible to wildland fires.<sup>23</sup> The normal fire season conditions of warm, dry summer and fall seasons subject vegetation to prolonged periods of moisture stress, therefore, causing the area to be very prone to wildland fires. In addition, high fire danger conditions are presented by north wind funneling events on steep topography. Wildland fuels are made up of the variety of vegetation available for combustion within a given land area. The fuels in the region, mostly annual grasses and mixed woodlands, are susceptible to fast, wind driven fires with the ability to spread quickly. Large wildfires could become more frequent if greenhouse gases (GHG) emissions, which affect global climate change (GCC), are not significantly reduced.

# **Emergency Access**

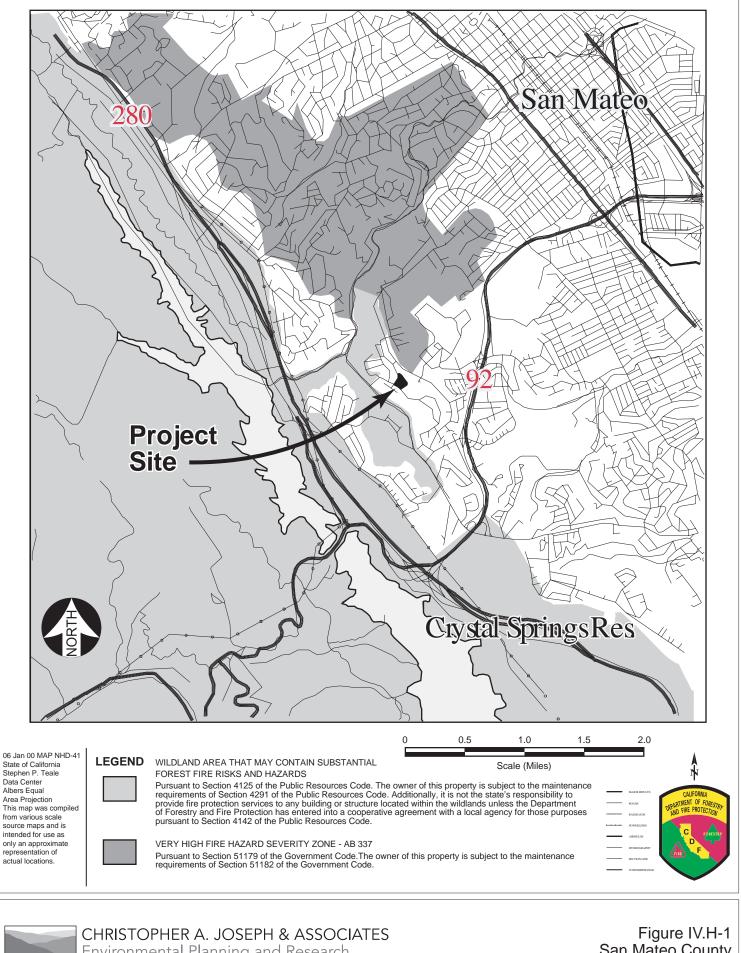
Emergency vehicle access to the project site is provided from major roadways near and adjacent to the site. Major roadways near the project site include: Polhemus Road and Bunker Hill Drive. Bel Aire Road and Ascension Drive are located adjacent to the project site.

<sup>&</sup>lt;sup>20</sup> County of San Mateo / CALFIRE, Pete Munoa, (Former) Fire Marshal, Phone Interview with CAJA Staff, November 21, 2008.

<sup>&</sup>lt;sup>21</sup> California Water Service Company, Ting He, P.E. Manager of Distribution, Engineering, Response to Service Letter, September15, 2008.

<sup>&</sup>lt;sup>22</sup> County of San Mateo, Wildland Urban Interface - Fire Threatened Communities. Accessed by CAJA Staff at: http://www.co.sanmateo.ca.us/vgn/images/portal/cit\_609/29/16/601017851firethreat\_wui.pdf on November 14, 2008. (Original Source: California Department of Forestry and Fire Protection, 2003.)

<sup>&</sup>lt;sup>23</sup> San Mateo City Fire Department, Maurice Dong, Deputy Fire Marshal, Response to Service Letter, July 31, 2008.



Environmental Planning and Research

Figure IV.H-1 San Mateo County Fire Hazard Map

# **REGULATORY SETTING**

# Federal and State

Currently no federal or State policies and/or mandates related to fire services exist. Therefore, in addition to the thresholds of significance outlined in Appendix G of the CEQA Guidelines, the local policies and guidelines associated with fire protection as defined by San Mateo County and CALFIRE will be utilized for this analysis.

# Local

# County of San Mateo General Plan

- 7.21 <u>Suitable Land within City Sphere of Influence</u>
  - Consider that lands may be included within a city sphere of influence only if they are generally suitable for urban services (e.g., public sewer systems, public water supplies, fire and police protection) and urban land uses.

# 15.10 Designation of Fire Hazard Areas

• Designate as Fire Hazard Areas those areas which are defined by the California Department of Forestry/County Fire Department or other fire protection districts as hazardous, including but not limited to the area within the Hazardous Fire Areas boundaries illustrated on the Natural Hazards map.

# 15.27 Appropriate Land Uses and Densities in Fire Hazard Areas

• In urban areas, consider higher density land uses to be appropriate if development can be served by California Department of Forestry/County Fire Department, a fire protection district or a city fire department, adequate access for fire protection vehicles is available and sufficient water supply and fire flow can be guaranteed.

# 15.28 Review Criteria for Locating Development in Fire Hazard Areas

- Wherever possible, cluster new development near existing developed areas where there are adequate water supplies and good access for fire vehicles.
- When development is proposed in hazardous fire areas, require that it be reviewed by the County Fire Warden to ensure that building materials, access, vegetative clearance from structures, fire flows and water supplies are adequate for fire protection purposes and in conformance to the fire policies of the General Plan.

#### 15.30 Standards for Water Supply and Fire Flow for New Development

- Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.
- Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.
- Consider the use of additional on-site fire protection devices, including but not limited to, the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.

# 15.33 Road Patterns

- Ensure road patterns that facilitate access for fire protection vehicles and provide secondary access and emergency evacuation routes when reviewing proposals for new subdivisions.
- Encourage fire protection agencies to identify emergency access and evacuation routes for existing developed areas and to provide this information to area residents.

# 15.35 Fire Retardant Vegetation

• Encourage the use of fire retardant vegetation when reviewing new development proposals.

# California Department of Forestry and Fire Protection (CALFIRE)

The CALFIRE protects the people of California from fires, responds to emergencies, and protects and enhances forest, range, and watershed values providing social, economic, and environmental benefits to rural and urban citizens.<sup>24</sup> Through comprehensive engineering and law enforcement programs the CALFIRE strives to prevent fires. Reduction of loss from California wildlands each year is the goal of extensive statewide planning by each CALFIRE Unit, communities, with coordination with non-profit groups and interagency cooperation.<sup>25</sup> Fire planning incorporates concepts of the National Fire Plan, the California Fire Plan and individual CALFIRE Unit Fire Plans, as well as Community Wildfire Protection Plans (CWPPs). Fire Plans outline the fire situation within each CALFIRE Unit. CWPPs do the same for communities. Each identifies prevention measures to reduce risks, informs and involves the local community or communities in the area, and provides a framework to diminish the potential loss due to

 <sup>&</sup>lt;sup>24</sup> California Department of Forestry and Fire Protection, CAL FIRE Fire and Emergency Response. Accessed by CAJA Staff at http://www.calfire.ca.gov/communications/downloads/fact\_sheets/FireandEmergencyResponse.pdf on November 14, 2008.

<sup>&</sup>lt;sup>25</sup> California Department of Forestry and Fire Protection, Fire Prevention and Planning. Accessed by CAJA Staff at http://cdfdata.fire.ca.gov/fire\_er/fpp on November 14, 2008.

wildfire. Planning includes other state, federal and local government agencies as well as Fire Safe Councils. CALFIRE staff access a variety of tools in the planning processes including California fire history statistics, fire weather, fire mapping, and Geographic Information Systems (GIS).<sup>26</sup>

# **ENVIRONMENTAL IMPACTS**

# **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact associated with fire protection if it would:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable fire service ratios, response times or other performance objectives for fire services; or
- b) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

# **Proposed Project**

An EVA road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. This roadway would include the following features: a 20-foot wide street surface; a vehicle turn out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of 20 percent, with 2 percent surface slopes (refer to Figures III-15 and III-16 in Section III, Project Description, of this DEIR).

The proposed private street (Lot "C"; refer to Figure III-12) would provide one access point for both ingress and egress at the northwestern end of the property via Bel Aire Road. On-site circulation along this street would consist of a closed loop system, with the majority of the proposed 25 lots situated on either side of this street. Per Figure III-14 in Section III (Project Description) of this DEIR the Lot "C" private street system would consist of a 50-foot wide right-of-way throughout. The majority of associated street segments would have the following characteristics: a 32-foot wide paved street surface with curbs and gutters where appropriate; 5.6-foot sidewalks along each side of the street; and curbside parking available. Conversely, a section of the private street system located within the eastern portion of the site, near the water tank parcel and Lots 7 and 17, would include a 22-foot wide street surface from curb-to-curb, with gutters where appropriate. No parking or sidewalk would be developed along this segment of

<sup>&</sup>lt;sup>26</sup> California Department of Forestry and Fire Protection, Fire Planning, Fire Planning Introduction. Accessed by CAJA Staff at http://cdfdata.fire.ca.gov/fire\_er/fpp\_planning on November 17, 2008.

the street. The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. Street sections with greater than 15 percent grade would consist of concrete, while all other sections would include asphalt.

# **Project Impacts and Mitigation Measures**

# Impact PS-2 Fire Services

Implementation of the proposed project could result in an increased need for fire protection services during both the short-term construction phase and long-term operational phase.

# Construction

Construction of the proposed project would increase the potential for accidental on-site fires from sources such as the operation of mechanical equipment and use of flammable construction materials. In most cases, the implementation of "good housekeeping" procedures by the construction contractors and the work crews would minimize these hazards. Good housekeeping procedures that would be implemented during construction of the proposed project include: the maintenance of mechanical equipment in good operating condition; careful storage of flammable materials in appropriate containers; and the immediate and complete cleanup of spills of flammable materials when they occur.

Construction activities also have the potential to affect fire protection, such as emergency vehicle response times, by adding construction traffic to the street network and potentially requiring partial lane closures during street improvements and utility installations. These impacts are considered to be less than significant for the following reasons:

- Construction impacts are temporary in nature and do not cause lasting effects;
- Partial lane closures, if determined to be necessary, would not greatly affect emergency vehicles, the drivers of which normally have a variety of options for avoiding traffic, such as using their sirens to clear a path of travel or driving in the lanes of opposing traffic; and
- The project's distance and response times to the project site meet the desired performance standards set by the JPA.

Based on the above information, construction of the proposed project would not be expected to tax fire fighting and emergency services to the extent that there would be a need for new, expanded, consolidated, or relocated fire facilities, in order to maintain acceptable service ratios, response times, or other performance objectives set by the JPA. During demolition of the existing access road for the water tank/cell site, the project site would remain clean and unobstructed. Therefore, impacts associated with fire protection during construction would be *less than significant* and no mitigation measures are required.

Although impacts were found to be less than significant, Mitigation Measure PS-2a below would further reduce any adverse impacts associated with fire protection during construction.

# Mitigation Measure PS-2a

Flagmen shall be utilized to facilitate the traffic flow until construction is complete, specifically if there are partial closures to streets surrounding the project site.

# Operation

Implementation of the proposed project would increase the demand for fire protection services in the project area. The project would demand fire protection services for 25 single-family homes from the San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>27</sup> As such, the additional structures, people and activity on the project site could result in an increase in the need for fire protection services. However, the San Mateo City Fire Department does not plan to develop any new fire stations or make improvements to the staff/equipment levels of existing stations in the service area of the proposed project, nor would implementation of the proposed project require the San Mateo City Fire Department to construct new facilities or expand existing facilities to accommodate increased demand for fire protection services.<sup>28</sup>

The County of San Mateo Fire Department/CALFIRE does not plan to develop any new fire stations or make improvements to the staff/equipment levels of existing stations in the service area of the proposed project.<sup>29</sup> Implementation of the proposed project may require the County of San Mateo Fire Department/CALFIRE to construct new facilities or expand existing facilities to accommodate increased demand for fire protection services.<sup>30</sup> However, due to the small scale of the proposed project and the projosed project would require the County of San Mateo Fire Department/CALFIRE to construct new facilities or expand existing facilities to accommodate increased demand for fire protection services.<sup>30</sup> However, due to the small scale of the proposed project and the projosed project would require the County of San Mateo Fire Department/CALFIRE to construct new facilities or expand existing facilities to accommodate increased demand for fire protection services. Additionally, the Woodside Fire Protection District, Central County Fire, Belmont/San Carlos Fire District, and Half Moon Bay Fire District would provide the closest resources and mutual aid if an emergency escalated or warranted further personnel and equipment. The proposed project would be subject to the San Mateo County Subdivision Regulations (Article 5, Section 7025.1). These regulations set forth the following fire protection requirements for residential development:

• *Subdivisions within a Fire District*. For a subdivision of a property located in a fire district, the subdivider must install water mains, fire hydrants, gated connections and other facilities needed to provide water supply of sufficient volume and pressure for fire protection in conformance with

 <sup>2.74</sup> persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

<sup>&</sup>lt;sup>28</sup> San Mateo City Fire Department, Maurice Dong, Deputy Fire Marshal, Response to Service Letter, July 31, 2008.

<sup>&</sup>lt;sup>29</sup> County of San Mateo / CALFIRE, Pete Munoa, (Former) Fire Marshal, Response to Service Letter, September 20, 2008.

<sup>&</sup>lt;sup>30</sup> Ibid.

standards established in the fire district. Prior to the recordation of any final map or parcel map, the subdivider must furnish a letter from the fire district certifying that such improvements have been installed and are operative; or that a bond or cash deposit in an amount set by the Director of Public Works has been filed with the County Clerk guaranteeing installation of said facilities within 12 months of the date of recording of the map. When a bond or cash deposit has been made, construction beyond the foundation shall not be permitted, and placement or storage of combustible construction materials on site is prohibited, unless approved mitigation to the satisfaction of the fire authority and water purveyor has been installed.

The project complies with the County Subdivision Regulations listed above.

As discussed previously, the majority of associated street segments would have a 32-foot wide paved street surface and curbside parking available. Conversely, a section of the private street system located within the eastern portion of the site, near the water tank parcel and Lots 7 and 17, would include a 22foot wide street surface from curb-to-curb, with gutters where appropriate. No parking would be developed along this segment of the street. However, per Mitigation Measure TRANS-3 (refer to Section IV.I [Transportation/Traffic] of this DEIR), given the grades and curves, the 32-foot width is inadequate to allow parking on both sides. Therefore, parking shall only be allowed on one side of the road within 32-foot width road segments. The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. As discussed in Section IV.I (Transportation/Traffic), up to 20 percent road grades are allowed by County design exception. Additionally, per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road. For the various 20 percent grade segments within the main access road (unbroken grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE Fire Marshal has stated that this is not acceptable for primary access roads; however, the Department would allow this grade pending receipt of a finalized plan for all proposed roadway infrastructures.<sup>31</sup>

In addition, as discussed above, the project site is located within a Community at Risk zone according to the County's Fire Threatened Communities Map and the project site can be susceptible to wildland fires.

Therefore, impacts associated with fire protection during operation would be *potentially significant*. However, implementation of Mitigation Measures PS-2b and PS-2c provided below would reduce any adverse impacts associated with fire protection during operation to a *less-than-significant* level.

# Mitigation Measure PS-2b

The project applicant shall submit building plans and plot plans to the County, San Mateo City Fire Department, and County of San Mateo Fire Department/CALFIRE to provide appropriate fire hazard

<sup>&</sup>lt;sup>31</sup> County of San Mateo / CALFIRE, Clayton Jolley, Battalion Chief/Fire Marshal, Response to Request for Comments for Ascension Height Subdivision, May 15, 2009.

management recommendations for inclusion as project conditions of approval. Recommendations may include, but not be limited to, the following:

- Pro-active fire prevention measures pertaining to property maintenance, vegetation management, and building construction using non-combustible materials in accordance with the Wildland Urban Interface Building Standards, to be evaluated by the County upon submittal of detailed building plans; and
- The San Mateo City Fire Department recommends that all homes have fire sprinkler systems and hydrants with 4.5" x 2" x 2.5" outlets spaced at 300 feet, with roads a minimum of 26 feet wide. These specifications shall be included in building plans and confirmed by the County Building Department.

# Mitigation Measure PS-2c

Prior to the issuance of grading permits, the County shall review the project's phasing plans to determine when the EVA road shall be installed in relationship to the development of on-site homes. The EVA improvements shall be included in the corresponding Final Map improvement plans, as reviewed by the County. In addition, the EVA road shall be designed to adhere to County and County of San Mateo Fire Department/CALFIRE standards/guidelines, as shown below:

- Parking shall be restricted to one side where the project road is less than 30 feet.
- A driveway with a hammerhead/T turnaround to serve Lot 11 (flag lot) shall be provided. The top of the "T" shall be 70 feet in length. Alternatively, a 20-foot wide driveway with a hammerhead/T turnaround to serve both Lot 10 and Lot 11 (flag lots) shall be provided. The top of the "T" shall be 70 feet in length.
- The San Mateo County Fire Department/CALFIRE shall require a plan and profile of the all roads within the project, including the primary and secondary access roads and all roads, dead end driveways and fire turnarounds within the subdivision.
- At building permit submittal, San Mateo County Fire Department/CALFIRE shall require a report of findings justifying the greater than 15 percent slope throughout the project as specified by County Ordinance and a request for exemption.

# Impact PS-3 Wildfire Hazards

According to the County of San Mateo Fire Department/CALFIRE, the project site is located outside of, but adjacent to, area that is classified as possibly containing substantial fire hazard risks (refer to Figure IV.H-1). As stated above, the project site is located within a Community at Risk zone according to the County's Fire Threatened Communities Map. Therefore, the project site can be susceptible to wildland fires.

However, implementation of the proposed project would transform the majority of the site's terrain by removing and replanting vegetation and trees. Manufactured slopes, a stepped-sequence of building-pads, a paved access road and EVA road would be constructed. A considerable amount of the site's existing combustible natural vegetation would be replaced with native trees and vegetation and eventually irrigated on-site landscaping, which would be maintained by the Home Owner's Association (HOA; no specific landscaping is proposed at this time; however, plans will be included at the Final Map stage). The site would also be served by a water system that meets San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE fire flow requirements for the proposed residential structures. The project applicant would implement fuel-modification and/or brush clearance on adjacent terrain as required by the San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE. Additionally, the proposed project would incorporate a number of fire safety features in accordance with applicable State and CALFIRE fire-safety codes, as well as County subdivision regulations for construction, access, fire flows, and fire hydrants.

Furthermore, exterior construction of the homes would have non-combustible finishes and class "A" roof coverings as required by local and state fire code. The building permit and/or plan approval issued for construction shall meet the intent of California Building Code (CBC) Chapter 7A (Material and Construction Methods for Exterior Wildfire Exposure). CBC §701A.3.2.2 requires the building official, prior to construction, provide the owner or applicant a "certification" that the building as proposed to be built complies with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in Chapter 7A. Additional on-site infrastructure and facilities would incorporate a full sprinkler fire protection system as required by the California Uniform Fire Code.

The proposed on-site water supply system would include additional underground water pipelines and water mains in order to accommodate the proposed projects water needs (i.e., residential, fire emergency services). Per the California Fire Code, Appendix B, fire flow is determined by the largest proposed building (using square footage of all floors) in a subdivision. If no building is over 3,600 square feet, the required fire flow would be 1,000 gallons per minute (gpm) at 20 pounds per square inch (psi) residual for a minimum of 2 hours. For structures over 3,600 square feet and no more than 4,800 square feet (for a typical wood frame construction (type VB SFD)) flows increase up to 1,750 gpm; more than 4,800 square feet (to 6200 square feet), required fire flows would be 2,000 gpm. The proposed water distribution system for the project would be designed to provide applicable fire flows at all hydrants, while maintaining a minimum residual pressure, in accordance with the standard fire design criteria. Fire hydrants will also be installed on-site per the County fire code.

As discussed previously, primary and secondary roads would serve the project with one access point for both ingress and egress provided by the proposed private street (Lot "C") at the northwestern end of the property via Bel Aire Road. An EVA road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive.

Handling and storage of fuels and other flammable materials during construction would conform to California Occupational Safety and Health Administration (OSHA) and local requirements, which include appropriate storage of flammable liquids and prohibition of open flames within 50 feet of flammable storage areas. Implementation of fire safe regulations per all applicable codes would be required. Furthermore, Mitigation Measures PS-2b and PS-2c would ensure that appropriate fire hazard management recommendations shall be included as project conditions of approval and that the EVA road shall be constructed at the appropriate phase and is designed to adhere to the appropriate design standards. Therefore, impacts associated with wildfire hazards would be *less than significant*.

# **CUMULATIVE IMPACTS**

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the demand for fire protection services. Specifically, there would be increased demands for additional San Mateo City Fire Department and County of San Mateo Fire Department/CALFIRE staffing, equipment, and facilities over time. Increases in population and employees in the City of San Mateo, the unincorporated San Mateo County and the City of Hillsborough (for any future development not currently listed in Table III-1) have the potential to increase average response times, primarily for non-emergency calls.

The City of San Mateo approved a two percent increase in the City's hotel tax in November 1998. This money is being used to build a new police station, seismically retrofit five fire stations, and build a new fire station in Lakeshore Park. The projects together total nearly \$40 million dollars. As discussed previously, all fire jurisdictional boundaries have been dropped for emergency response. Therefore, whether a related project is located within or outside of the City of San Mateo city limits is not relevant in this cumulative analysis. Furthermore, many of the related projects include infrastructure improvements that would likely have a lower demand for fire protection services than residential, commercial, or office uses. The demand for fire protection services associated with the development of the related projects in conjunction with the proposed project can be accommodated by the San Mateo City Fire Department.<sup>32</sup> The demand for fire protection services associated with the development of these projects in conjunction with the proposed project can likely be accommodated by the County of San Mateo Fire Department/CALFIRE, but would further analysis as more project and capacity becomes available.<sup>33</sup>

As stated previously, to address growing demands for fire protection services, the San Mateo City Fire Department works to be pro-active in fire prevention, requires built-in fire protection for new development, and provides evaluation of each project by the County. Built-in fire protection services such as fire warning and extinguishing services help to meet the cumulative demand for fire protection services. Additionally, as part of development review, the County would recommend fire-sprinkler systems, property maintenance, vegetation management, building construction using non-combustible

<sup>&</sup>lt;sup>32</sup> *Ibid.* 

<sup>&</sup>lt;sup>33</sup> County of San Mateo / CALFIRE, Pete Munoa, (Former) Fire Marshal, Phone Interview with CAJA Staff, November 21, 2008.

materials in accordance with the Wildland Urban Interface Building Standards and CBC standards. Therefore, cumulative impacts associated with fire protection services would be *less than significant* and no mitigation measures are required.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to fire protection services created by the proposed project would be *less than significant*.

# IV. ENVIRONMENTAL IMPACT ANALYSIS H. PUBLIC SERVICES 3. SCHOOLS & LIBRARIES

# METHODOLOGY

Potential project impacts associated with school and library services were evaluated based on the adequacy of existing and planned staffing, equipment, and facilities within the San Mateo-Foster City School District (SMFCSD), the San Mateo Union High School District (SMUHSD), the San Mateo County Library (SMCL), and the San Mateo Public Library (SMPL) to meet the additional demand for school and library services resulting from development of the proposed project. The responsible agencies were contacted regarding the potential impacts on their facilities. Responses from public services agencies are included in Appendix C to this DEIR. In addition, various public service policies and guidelines as defined by San Mateo County were also reviewed and considered during the project impact analysis.

# **ENVIRONMENTAL SETTING**

# Schools

Public education services near the project site are provided by the SMFCSD and the SMUHSD. The SMFCSD provides a total of 20 elementary and middle schools, including 16 schools serving kindergarten through fifth grade and four middle schools serving sixth through eighth grade.<sup>34</sup> The SMUHSD provides high school services to the project area, with six comprehensive high schools, one adult school, and one continuation high school.<sup>35</sup> These schools serve the cities of Burlingame, Foster City, Hillsborough, Millbrae, San Bruno, and San Mateo.

Highlands Elementary School (located at 2320 Newport in the City of San Mateo) and Borel Middle School (located at 425 Barneson in the City of San Mateo) are the SMFCSD schools that serve the project site and surrounding area.<sup>36</sup> Highlands Elementary, with a current enrollment of 451 students, is at capacity and Borel Middle School, with a current enrollment of 937 students, is at capacity.<sup>37</sup> Per Policy 4140 of the SMFCSD's regulations, Administrative Services will review annually the enrollment capacity at all school sites to determine space availability for purposes of enrollment, transfer requests and magnet

<sup>&</sup>lt;sup>34</sup> San Mateo-Foster City School District, About Us. Accessed by CAJA Staff at http://www.smfc.k12.ca.us/about.html on November 17, 2008.

<sup>&</sup>lt;sup>35</sup> San Mateo Union High School District, Elizabeth McManus, Deputy Superintendent, Business Services, Response to Service Letter, August 8, 2008.

<sup>&</sup>lt;sup>36</sup> San Mateo-Foster City School District, Joan Rosas, Ed.D., Assistant Superintendent, Response to Service Letter, December 18, 2008.

<sup>&</sup>lt;sup>37</sup> These enrollment statistics differ from those provided in Table IV.H-2. Both have been provided for informational purposes.

school placements. Available space is determined by the program capacity, staffing entitlement, program considerations and facilities. There are no current plans for additions to the Highlands Elementary School or Borel Middle School. Portable classrooms have been added to many campuses to accommodate increased enrollment during 2008. In some cases, students in highly impacted areas are administratively placed in other schools within the SMFCSD. Some additional capacity will be added to impacted schools through the Measure C facilities bond.

Aragon High School (located at 900 Alameda de las Pulgas in the City of San Mateo) serves the project site and surrounding area.<sup>38</sup> Aragon High School's maximum capacity is 1,500 students. The SMUHSD is not utilizing any busing programs or portable classrooms to accommodate overcrowding. Six years ago, SMUHSD voters, for the first time in the SMUHSD's history, overwhelmingly approved a bond to repair and rehabilitate Aragon, Burlingame, Capuchino, Hillsdale, Mills, and San Mateo High Schools that are 45-83 yeas old.<sup>39</sup> The Measure D bond promised repairs and renovations, but the District was able to leverage the Bond with other resources to provide a Capital Improvement Program for building new classrooms and remodeling old ones. Libraries were built new or remodeled and expanded. Old bathrooms were renovated and new ones built. New science labs were built and old ones modernized. Even with these significant improvements, because of the age of the facilities, much remains to be done. In November 2006, voters overwhelmingly supported the District's commitment to provide safe, quality facilities for students and teachers, for generations to come, and approved the Measure M Bond in the amount of \$298 million to continue new construction and modernization across the District. Measure M projects at Aragon High School include the expansion and remodel of the severely undersized, 45-yearold student services building and the construction of a new art classroom, in addition to other modernization projects.

Enrollment and class size trends for these schools over the school years between 2005 and 2008 are shown in Table IV.H-2. As shown, enrollment at Aragon High School for the 2007/2008 school year was 1,602, which is greater than the school's maximum capacity of 1,500. However, existing school capacity within the SMUHSD is adequate to meet current student population because the SMUHSD's enrollment projections are decreasing.<sup>40</sup>

<sup>&</sup>lt;sup>38</sup> San Mateo Union High School District, Elizabeth McManus, Deputy Superintendent, Business Services, Response to Service Letter, August 8, 2008.

<sup>&</sup>lt;sup>39</sup> San Mateo Union High School District, Measure M Projects List. Accessed by CAJA Staff at http://smuhsd.ca.schoolloop.com/cms/page\_view?d=x&piid=&vpid=1220710458362 on November 17, 2008.

<sup>&</sup>lt;sup>40</sup> San Mateo Union High School District, Elizabeth McManus, Deputy Superintendent, Business Services, Response to Service Letter, August 8, 2008.

School Year	Highlands Elementary School			Borel Middle School			Aragon High School		
	05-06	06-07	07-08	05-06	06-07	07-08	05-06	06-07	07-08
Enrollment	409	337	414	888	914	953	1,570	1,523	1,602
Average Class Size	21.2	20.0	21.6	27.5	26.8	25.5	31.3	31.9	28.8
Pupil Teacher Ratio	19.0	20.9	19.7	21.7	21.8	22.1	22.2	22.9	23.6
Source: California Department of Education, DataQuest. Accessed by CAJA Staff at http://dq.cde.ca.gov/dataquest/ on November 17, 2008.									

 Table IV.H-2

 School Data for Proposed Project and Vicinity

# School Impact Fees

School districts have a variety of funding mechanisms available to them to pay for the financing of school construction, including local general obligation bonds, local Mello-Roos bonds, developer fees, and state funding. Developer fees are charged by school districts on new residential and commercial construction to offset the costs of the new school construction for which new development may create a demand. Prior to passage of Proposition 1A, school districts were limited in the amount of school facility developer fees they could charge. Also, as a result of a series of court decisions in the years preceding the passage of Proposition 1A, known as the *Mira, Hart, and Murietta* decisions, cities and counties were able to impose additional school facility fees on development as a condition of obtaining land use approval.

Pursuant to California Education Code §17620(a)(1), the governing board at any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities. As of January 30, 2008, these fees are \$2.97 per square foot for residential construction in San Mateo County, and \$1.05 per square foot going to SMUHSD. However, by February 2009 the SMUHSD intends to raise this fee to \$1.19, or 40 percent of the maximum allowable rate as approved by the State Allocation Board). The remainder of the fee (60 percent of the total) goes to the SMFCSD.

Provided in §65996 of the California Government Code, the payment of such fees is deemed to fully mitigate the impacts of new development on schools services.

#### Libraries

The SMCL is a JPA comprised of the cities of Atherton, Belmont, Brisbane, East Palo Alto, Foster City, Half Moon Bay, Millbrae, Pacifica, Portola Valley, San Carlos, and Woodside, as well as unincorporated areas of the County.<sup>41</sup> The SMCL also serves the unincorporated areas of the County of San Mateo. The

<sup>&</sup>lt;sup>41</sup> County of San Mateo, County Library (3700B). Accessed by CAJA Staff at http://www.co.sanmateo.ca.us/vgn/images/portal/cit\_609/306740Adopted3-37.pdf on November 18, 2008.

SMCL is comprised of 12 community libraries in the 11 cities above.<sup>42</sup> The SMCL's Belmont Library (located at 1110 Alameda de las Pulgas in the City of Belmont) serves the project site and surrounding area. The Belmont Library is open seven days per week<sup>43</sup> and free Internet access is available.<sup>44</sup> The 20,230-square foot library houses approximately 99,594 volumes and has 7.5 full time equivalent staff members.<sup>45</sup> Currently, the SMCL keeps up with demand by employing up-to-date service strategies and utilizing current technologies.<sup>46</sup> SMCL has adequate staff to meet the existing needs of County residents.

Two SMPL branches, the Main Library (located at 55 West 3rd Avenue in the City of San Mateo) and the Hillsdale Library (located at 205 W. Hillsdale Boulevard in the City of San Mateo) also serve the project site and surrounding area. The Main Library is open seven days per week and the Hillsdale Library is open five days per week.<sup>47</sup> Free Internet access is available at both libraries.<sup>48</sup> The Main Library was built recently and the Hillsdale Library was recently renovated; both facilities adequately meet the existing need of City residents.<sup>49</sup> In 2004, the City of San Mateo completed a budget reduction process that reached 15 percent cutbacks in services. During that time, the SMPL implemented budget reductions which included a reduction in the workforce, as well as a reduction in library hours of service. The City of San Mateo libraries reopened after construction at reduced service hours. SMPL has adequate staff to meet the existing needs of residents of the City and surrounding areas.

# **REGULATORY SETTING**

# Federal and State

Senate Bill 50 (SB 50) and Proposition 1A provide a comprehensive school facilities financing and reform program. The provisions of SB 50 prohibit local agencies from denying land use approvals on the basis that school facilities are inadequate and reinstate the school facility fee cap for legislative actions. Government Code §65996, states that the development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

<sup>&</sup>lt;sup>42</sup> San Mateo County Library, About Us. Accessed by CAJA Staff at http://www.smcl.org/about/index.html on November 18, 2008.

<sup>&</sup>lt;sup>43</sup> San Mateo County Library, Belmont Library. Accessed by CAJA Staff at http://www.smcl.org/libraries/bel/index.html on November 19, 2008.

<sup>&</sup>lt;sup>44</sup> San Mateo County Library, Organization. Accessed by CAJA Staff at http://www.smcl.org/about/organization/index.html on November 19, 2008.

<sup>&</sup>lt;sup>45</sup> San Mateo County Library, Anne-Marie Despain, Interim Director of Library Services, Electronic Mail Correspondence with CAJA Staff, December 8, 2008.

<sup>&</sup>lt;sup>46</sup> San Mateo County Library, Anne-Marie Despain, Interim Director of Library Services, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>47</sup> City of San Mateo, Library Locations & Hours. Accessed by CAJA Staff at http://www.cityofsanmateo.org/index.asp?NID=514 on December 5, 2008.

<sup>&</sup>lt;sup>48</sup> City of San Mateo, San Mateo Public Library, Public Use Computers. Accessed by CAJA Staff at http://www.cityofsanmateo.org/DocumentView.asp?DID=258 on December 5, 2008.

<sup>&</sup>lt;sup>49</sup> San Mateo Public Library, Ben Ocon, City Librarian, Response to Service Letter, December 4, 2008.

As discussed above, California Education Code §17620(a)(1), the governing board at any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities.

# Local

San Mateo County voters have passed two parcel taxes to increase funding for schools in the proposed project vicinity. The first, passed in 1991, creates an annual assessment of \$77.54 per parcel. The second, Measure B, created a \$75.00 per year special tax on all taxable parcels in the San Mateo-Foster City School District. The proceeds are used to support small class size, continue art, music, library and technology and computer programs, as well as hiring and retaining teachers and other employees.

The SMUHSD has two Bond Measures that have recently been passed. Measure D was passed in 2000 and Measure M was passed in 2006. The 2007-08 tax rate for the Measure D Bonds was \$15 per \$100,000 of assessed value. The Measure M bonds did not have a 2007-08 tax rate as the bonds had not yet been issued when the 2007-08 rates were set. The SMUHSD is estimating the Measure M Bonds to have a rate of \$15.20 per \$100,000 for 2008-09.

Per the SMUHSD, the student generation rate used for single-family residential projects is one student per household.

# **ENVIRONMENTAL IMPACTS**

# **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact associated with school and library services if it would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives for school and library services.

# **Project Impacts and Mitigation Measures**

# Impact PS-4 School and Library Services

# School Services

Implementation of the proposed project would increase the demand for school services in the project area. The project would include 25 single-family homes, which would generate demand for public education services provided by the SMFCSD and the SMUHSD.

The student generation rate used for the SMFCSD is 0.18 students per single-family home.<sup>50</sup> Based on this generation rate of 0.18 students per single-family home multiplied by the 25 single-family homes proposed by the project, the proposed project is anticipated to demand approximately 5 elementary and middle school aged students. There are no current plans for additions to the Highlands Elementary School or Borel Middle School. Both schools are currently at capacity. However, portable classrooms have been added, students are sometimes placed in schools outside of highly impacted areas, and additional capacity could be added through Measure C. Due to the small scale of the proposed project and the mandatory mitigation in the form of developer fees discussed below, it is unlikely that implementation of the proposed project would require the SMFCSD to construct new facilities or expand existing facilities to accommodate increased demand for school services.

The student generation rate used for the SMUHSD is one high-school aged student per household.<sup>51</sup> Based on this generation rate of one high-school aged student per household multiplied by the 25 single-family homes proposed by the project, the proposed project is anticipated to demand approximately 25 high-school aged students. The SMUHSD does not plan to develop any new schools in the service area of the proposed project. However, as discussed previously, Aragon High School is currently undergoing modernization as a result of Measure M and the proposed project can be accommodated as enrollment is decreasing and the overall enrollment in the district is below SMUHSD capacity. Implementation of the proposed project would not require the SMUHSD to construct new facilities or expand existing facilities to accommodate increased demand for school services.

Furthermore, as mandated by State law, the project applicant would be required to pay \$2.97 (as of January 2008) or per square foot in developer fees to offset any impacts the project would have on both the SMFCSD and the SMUHSD. Therefore, impacts associated with school services would be *less than significant* and no mitigation measures are required.

# Library Services

Implementation of the proposed project would increase the demand for library services in the project area. The project would include 25 single-family homes, which would generate demand for library services provided by the SMCL and SMPL. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>52</sup> As such, the demand for library services generated by the proposed project site would increase. Implementation of the proposed project would not require the SMCL to construct new facilities or expand existing facilities to accommodate increased demand for

<sup>&</sup>lt;sup>50</sup> San Mateo-Foster City School District, Joan Rosas, Ed.D., Assistant Superintendent, Response to Service Letter, December 18, 2008.

<sup>&</sup>lt;sup>51</sup> San Mateo Union High School District, Elizabeth McManus, Deputy Superintendent, Business Services, Response to Service Letter, August 8, 2008.

<sup>&</sup>lt;sup>52</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

library services.<sup>53</sup> The SMCL is able to keep up with demand for library services by employing innovative service strategies and utilizing additional technology. The SMCL does not plan to develop any new libraries or expand existing libraries in the service area of the proposed project. Implementation of the proposed project would not require the SMPL to construct new facilities or expand existing facilities to accommodate increased demand for library services.

Implementation of the proposed project would not require the SMPL to construct new facilities or expand existing facilities to accommodate increased demand for library services.<sup>54</sup> To keep up with demand for library services, information is gathered through needs assessment studies, customer satisfaction surveys, and focus groups. Strategic planning is conducted periodically and in conjunction with the Peninsula Library System consortia of public and community college libraries in the County. The SMPL does not plan to develop any new libraries or expand existing libraries in the service area of the proposed project. Implementation of the proposed project would not require the SMPL to construct new facilities or expand existing facilities to accommodate increased demand for library services. Therefore, impacts associated with library services would be *less than significant* and no mitigation measures are required.

# **CUMULATIVE IMPACTS**

# School Services

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the demand for school services. Specifically, there would be increased demands for additional SMFCSD and SMUHSD staffing and facilities over time. Only 13 of the 22 related projects involve residential, condominium, or townhouse development, which would result in an incremental population increase, and would therefore affect the demand for school services.

The SMFCSD did not confirm whether implementation of the proposed project and related projects would require the SMFCSD to construct new facilities or expand existing facilities to accommodate increased demand for school services. Implementation of the proposed project and related projects would not require the SMUHSD to construct new facilities or expand existing facilities to accommodate increased demand for school services.<sup>55</sup> As mandated by State law, the applicants of all related projects involving residential uses would be required to pay \$2.97 (as of January 2008) per square foot in developer fees to offset any impacts the related projects would potentially have on the SMFCSD. Therefore, cumulative impacts associated with school services would be *less than significant* and no mitigation measures are required.

<sup>&</sup>lt;sup>53</sup> San Mateo County Library, Anne-Marie Despain, Interim Director of Library Services, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>54</sup> San Mateo Public Library, Ben Ocon, City Librarian, Response to Service Letter, December 4, 2008.

<sup>&</sup>lt;sup>55</sup> San Mateo Union High School District, Elizabeth McManus, Deputy Superintendent, Business Services, Response to Service Letter, August 8, 2008.

# Library Services

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the demand for library services. Specifically, there would be increased demands for additional SMCL and SMPL staffing, materials, and facilities over time. Implementation of the proposed project and related projects would not require the SMCL to construct new facilities or expand existing facilities to accommodate increased demand for library services.<sup>56</sup> As discussed above, SMCL is able to keep up with demand for library services by employing innovative service strategies and utilizing additional technology. The SMPL's Main Library was constructed to address the needs of the community using a 50 year projection into the future.<sup>57</sup> The Needs Assessment study addressed population projections with service demand implications. At the present time, however, it is unknown whether the Main Library would be able to accommodate the demand for library services associated with the development of the related projects in conjunction with the proposed project due to the challenging economic factors impacting local jurisdictions and the respective services. In the Needs Assessment that was conducted for the Main Library project, population projections for the Main Library's service area showed a projected population of 114,660 by 2020, according to ABAG. Therefore, cumulative impacts associated with library services would be *less than significant* and no mitigation measures are required.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to schools and libraries created by the proposed project would be *less than significant*.

<sup>&</sup>lt;sup>56</sup> San Mateo County Library, Anne-Marie Despain, Interim Director of Library Services, Response to Service Letter, August 1, 2008.

<sup>&</sup>lt;sup>57</sup> San Mateo Public Library, Ben Ocon, City Librarian, Response to Service Letter, December 4, 2008.

# IV. ENVIRONMENTAL IMPACT ANALYSIS H. PUBLIC SERVICES 4. RECREATION/PARKS

# METHODOLOGY

Potential project impacts associated with public parks and recreation facilities were evaluated based on the adequacy of existing facilities of the San Mateo County Parks and Recreation Division (SMCPRD) to meet the additional demand for public parks and recreation facilities resulting from development of the proposed project. The responsible agency was contacted regarding the potential impacts on its facilities. Responses from public services agencies are included in Appendix C to this DEIR. In addition, various public service policies and guidelines as defined by San Mateo County and the SMCPRD were also reviewed and considered during the project impact analysis.

# **ENVIRONMENTAL SETTING**

The Highlands Recreation District (HRD) serves the project area. The HRD does not have any plans to address demand requirements or develop new parks or expand existing parks in the near future.<sup>58</sup> The HRD is open to residents and non-residents for use, with demand varying depending on the time of year. No projections have been made as to future demands on HRD facilities or programs. It is currently unknown what would be needed to meet cumulative demand.

The SMCPRD operates 17 separate parks, three regional trails and numerous other County and local trails encompassing 15,680 acres.<sup>59</sup> The parks, trails, and facilities are located throughout the County and represent a wide variety of natural settings including a coastside marine reserve, recreational area, coastal mountain woodland areas, and urban site. Camping, hiking, swimming, windsurfing, and horseback riding are some of the recreational activities offered at the following County parks:

<sup>&</sup>lt;sup>58</sup> Highlands Recreation District, Margaret Glomstad, General Manager, Response to Service Letter, August 6, 2008.

<sup>&</sup>lt;sup>59</sup> County of San Mateo, Department of Parks, Home. Accessed by CAJA Staff at http://www.eparks.net/smc/department/home/0,,5556687\_5557733,00.html on November 18, 2008.

- Coyote Point Recreation Area
- Crystal Springs (Sawyer Camp) Trail
- Edgewood Park and Natural Preserve
- Flood Park
- Huddart Park
- Fitzgerald Marine Reserve
- Heritage Grove
- Junipero Serra Park
- Memorial Park

- Pescadero Creek Park
- Sam McDonald Park
- Sanchez Adobe Historic Site
- San Bruno Mountain Park
- San Mateo Fishing Pier
- San Pedro Valley Park
- Woodside Store
- Wunderlich Park

The San Francisco Bay National Wildlife Refuge, authorized to contain 23,000 acres, is owned by the Federal government and operated by the U.S. Fish and Wildlife Service (USFWS) of the U.S. Department of the Interior (DOI).<sup>60</sup> The Refuge is located in the South Bay and contains lands located in San Mateo, Santa Clara and Alameda Counties. That portion within the County contains approximately 1,863 acres. The Refuge, comprised of marshes, mudflats and salt ponds, provides protective habitats for wildlife and offers environmental, educational and wildlife interpretation opportunities for visitors.

The Golden Gate National Recreation Area (GGNRA) was basically established to preserve for public use open space lands of significant natural, historic, scenic and recreational value.<sup>61</sup> Approximately 23,000 acres of land in San Mateo County have been authorized for inclusion in this federal government facility operated by the National Park Service (NPS) of the DOI. Included with the new boundaries of the GGNRA are certain public parks and beaches located in Pacifica, Daly City and Sweeney Ridge in unincorporated San Mateo County. Also included in the GGNRA are the watershed properties owned by the City and County of San Francisco. These properties are regulated by scenic and recreation easements, granted to the City and County of San Francisco, the State of California, the federal government and San Mateo County. Most of the watershed lands, with the exception of approximately 4,000 acres, are under the terms and conditions of a scenic easement. The remaining 4,000 acres are under the terms and conditions of a scenic easement. The administration of these easements remains with the Department of the Interior; however, the function has now been transferred from the Heritage Recreation and Conservation Service to the National Park Service.

In addition to parks operated by SMCPRD, many California Department of Parks and Recreation (CDPR) parks are located in the County of San Mateo. The CDPR owns and operates 8,353 acres of recreational facilities in the County in the form of parks, beaches, and marine reserves.<sup>62</sup> These facilities are located

<sup>&</sup>lt;sup>60</sup> San Mateo County, Environmental Services Division, General Plan: Overview Background & Issues, November 1986, page 6.3.

<sup>&</sup>lt;sup>61</sup> San Mateo County, Environmental Services Division, General Plan: Overview Background & Issues, November 1986, pages 6.3 and 6.5.

<sup>&</sup>lt;sup>62</sup> San Mateo County, Environmental Services Division, General Plan: Overview Background & Issues, November 1986, page 6.5.

along the coast and in the southern portion of the County. CDPR operates the following parks and recreational areas in the County of San Mateo:<sup>63</sup>

- Año Nuevo State Park/Natural Reserve
- Bean Hollow State Beach
- Burleigh H. Murray Ranch
- Butano State Park
- Gray Whale Cove State Beach
- Half Moon Bay State Beach
- Montara State Beach
- Pacifica State Beach

- Pescadero State Beach
- Pigeon Point Light Station
- Point Montara Light Station
- Pomponio State Beach
- Portola Redwoods State Park
- San Bruno Mountain State Park
- San Gregorio State Beach
- Thornton State Beach

# **REGULATORY SETTING**

#### **Federal and State**

# Quimby Act

The Quimby Act (California Government Code Section 66477) was established by the California Legislature in 1965 to preserve open space and parkland in the rapidly urbanizing areas of the state. This legislation was in response to California's increased rate of urbanization and the need to preserve open space and provide parks and recreation facilities for California's growing communities. The Quimby Act authorizes local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two.

The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is 3 acres per 1,000 persons, then the community may require dedication based on a standard of 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 persons, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

<sup>&</sup>lt;sup>63</sup> California State Parks, Visit a Park, Find a Park, Regions, San Francisco Bay Area. Accessed by CAJA Staff at http://www.parks.ca.gov/parkindex/default.asp?tab=2 on June 26, 2008.

# Local

# County of San Mateo General Plan

# 6.3 Build upon Existing System

• Consider the feasibility of redesigning and/or expanding existing park and recreation facilities to meet future needs while developing new acquisition and development programs.

# County of San Mateo Subdivision Regulations

# 7053 General Requirements

• As a condition of approval of a tentative map or tentative parcel map, the subdivider will be required to dedicate land or pay a fee in lieu of dedication for the purposes of (a) acquiring, developing, or rehabilitating County park and recreation facilities, and/or (b) assisting other providers of park and recreation facilities in acquiring, developing, or rehabilitating facilities that will serve the proposed subdivision. The provisions of this article are enacted pursuant to Section 66477 of the State Government Code and are hereby found to be consistent with the recreational policies of the General Plan.

# 7055 Standard Requirements

- (1) Standard Consistent with the County General Plan, the County finds that the public health, welfare and safety require that three (3) acres of real property for each one thousand persons residing in the County be devoted to park and recreational purposes.
- (2) Parkland Dedication. When the recreational policies of the County General Plan or any applicable area plan support the location of a park or recreational facility within the proposed subdivision to serve the immediate or future needs of its residents, the subdivider will be required to dedicate land within the subdivision for park and recreational purposes. The amount of land to be dedicated will be based on the standard established in subsection 1, above, and in accordance with the following formulas:
  - Parkland Demand Due to Subdivision (acres) = Number of Persons Per Subdivision x .003 Acres
  - Number of Persons Per Subdivision = Number of Dwelling Units Per Subdivision x Number of Persons Per Dwelling Unit
- Number of persons per dwelling is determined by using data on household size from the most recent federal census.
- (3) Fees In Lieu of Land Dedication. When the proposed subdivision contains 50 parcels or less, an in-lieu fee only may be required of the subdivider. For subdivisions with more than 50 parcels,

at the County's option either an in-lieu fee or dedication of land may be required. If a fee is imposed, the amount of the fee shall be equal to the value of the amount of land which would otherwise be dedicated pursuant to 2, above, and is determined by the following formula:

- Parkland Fee (dollars) = Parkland Demand Due to Subdivision (acres) x Value per Acre of Parcel Proposed for Subdivision (dollars/acre)
- Value, per acre of parcel proposed for subdivision, is determined by using the assessed value of the parcel proposed for subdivision as shown in the most recent equalized assessment roll.

# ENVIRONMENTAL IMPACTS

#### **Thresholds of Significance**

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact on park and recreation services if it would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives for park and recreation services.

# **Proposed Project**

The proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. The tot lot and trails would be available for use by the general public. The 0.45-acre (19,602-sf) proposed undisturbed and protected area would be included within the southwest corner of the project site. The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. Trails 1 and 2 would consist of 5-foot diameter pathways that would transverse the northern portion of the site and the proposed common area/conservation area, respectively. The above recreation and open space amenities would reduce the project's demand for parks and recreation services. The tot lot would consist of approximately 8,365 sf and would be located near the project's main site entrance on the northeastern side of the new private street adjacent to Lot 1.

# **Project Impacts and Mitigation Measures**

# Impact PS-5 Park Services

Implementation of the proposed project would increase the demand for park and recreation services in the project area. The project would include 25 single-family homes, which would generate demand for park and recreation services. The proposed project would result in a total increase in permanent population of

approximately 69 persons.<sup>64</sup> As such, the demand for recreation/park services generated by the proposed project site would increase. Residential developments typically have the greatest potential to result in impacts to parks and recreational services since these types of developments generate a permanent increase in the residential population, including the greatest users of parks and recreational services – families with children.

The Quimby Act authorizes local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. As discussed above, Section 7053 and 7055 of the County of San Mateo Subdivision Regulations states each subdivider shall dedicate land or pay an in-lieu fee to provide three acres of real property for each one thousand persons residing in the County. Section 7055 of the County of San Mateo Subdivision Regulations provides that when a proposed subdivision contains 50 parcels or less, an in-lieu fee only may be required of the subdivider and for subdivisions with more than 50 parcels, at the County's option either an in-lieu fee or dedication of land may be required. Should the County decide to require the dedication of land, the preliminary parkland dedication requirement for the proposed project was calculated in accordance with Section 7055 of the County of San Mateo Subdivision Regulations as follows:

Parkland Demand Due to Subdivision (acres) = Number of Persons Per Subdivision x .003 Acres

Number of Persons Per Subdivision = Number of Dwelling Units Per Subdivision x Number of Persons Per Dwelling Unit

# Whereas,

25 units x 2.74 persons per household = 68.5 or 69 persons

# Therefore,

69 persons x .003 Acres = 0.207 Acres of Parkland Demand Due to Subdivision

Following the County's requirement of three acres of real property each one thousand persons residing in the County, the parkland requirement for the proposed project would be approximately 0.2 acres. As discussed above, the project proposes a 10.45-acre undisturbed and protected area, on-site common areas or conservation areas that would constitute approximately 4.12 acres, trails, and a tot lot that would consist of approximately 8,365 sf. This amount of community open space and other recreation amenities available to project residents and the general public, would exceed the parkland acreage required by the County of San Mateo Subdivision Regulations.

However, as discussed above, the County may require the payment of fees in addition to or in lieu of the dedication of land when the proposed subdivision contains 50 parcels or less. Section 7055 of the County

 <sup>&</sup>lt;sup>64</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

of San Mateo Subdivision Regulations describes the method for calculating the amount of the fee. The proposed project would either provide enough land dedicated to open space and recreation amenities to exceed the parkland acreage requirement or pay the in-lieu fees as required by the County. In addition, the amount of community open space and other recreation amenities proposed by the project would fulfill the requirements of Section 7055 of the County of San Mateo Subdivision Regulations and would offset the project's demand for park and recreation services.<sup>65</sup> Therefore, project impacts related to an increased use of existing neighborhood and regional parks or other recreational facilities would be *less than significant* and no mitigation measures are required.

The SMCPRD did not provide specific information regarding expansion plans or anticipated impacts associated with the proposed project. However, due to the small scale of the proposed project and the inclusion of the open space and recreation components described above, it is unlikely that implementation of the proposed project would require the SMCPRD to construct new facilities or expand existing facilities to accommodate increased demand for recreation/park services. In addition, the proposed project would not significantly affect existing HRD park facilities.<sup>66</sup> Currently, the HRD does not have any recommendations that might help eliminate or reduce any future potential impacts the proposed project may have on parks and recreational services.

Although the project includes a recreational component, the characterization of the project is not as a recreational project, but as a residential development. A detailed analysis of the potential environmental impacts associated with the construction and operations of the proposed on-site recreational facilities is presented throughout Section IV (Environmental Impact Analysis) of this DEIR. Overall, impacts associated with parks and recreation services would be *less than significant* and no mitigation measures are required.

# **CUMULATIVE IMPACTS**

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the demand for park and recreation services. Specifically, there would be increased demands for additional park and recreation services staffing and facilities over time due to an increase in employees and residents in the project area. However, employees generated by the related projects involving commercial development, office development, senior housing, and a police station do not typically enjoy long periods during the workday to visit and use park and recreation facilities. Therefore, as discussed previously, the types of developments that generate a permanent increase in the residential population, including the greatest users of parks and recreational services are families with children.

<sup>&</sup>lt;sup>65</sup> San Mateo County Parks and Recreation Division, Sam Herzberg, Phone Interview with CAJA Staff, September 3, 2003.

<sup>&</sup>lt;sup>66</sup> Highlands Recreation District, Margaret Glomstad, General Manager, Response to Service Letter, August 6, 2008.

The SMCPRD did not provide specific information regarding expansion plans or anticipated impacts associated with the proposed project and related projects. Implementation of the proposed project and related projects would not require HRD to construct new facilities or expand existing facilities to accommodate increased demand for park and recreation services.<sup>67</sup> Furthermore, related projects would comply with all applicable County policies and ordinances (e.g., Section 7055 of the County of San Mateo Subdivision Regulations) to offset any impacts the related project would have on the park and recreation services. Therefore, cumulative impacts associated with park and recreation services would be *less than significant* and no mitigation measures are required.

# LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to parks and recreation services created by the proposed project would be *less than significant*.

<sup>&</sup>lt;sup>67</sup> Highlands Recreation District, Margaret Glomstad, General Manager, Response to Service Letter, August 6, 2008.

# IV. ENVIRONMENTAL IMPACT ANALYSIS I. TRANSPORTATION/TRAFFIC

# **INTRODUCTION**

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of traffic and transportation with respect to the proposed Ascension Heights Subdivision project ("proposed project") and includes an assessment of potential impacts associated with the development of the proposed project on the existing circulation system within the County of San Mateo. The information in this section is based primarily on the below studies. These studies and associated data are included in Appendix I of this DEIR.

- *Traffic Analysis Report for the Proposed Thomas Subdivision Residential Development*, prepared by Hexagon Transportation Consultants, Inc. (Hexagon), March 9, 2004;
- Update to the Traffic Analysis Report for the Proposed Thomas Subdivision Residential Development, prepared by Hexagon, May 29, 2008; and
- Ascension Subdivision Residential Development, Draft Traffic Analysis Report, prepared by Hexagon, August 12, 2008.

# METHODOLOGY

The traffic analysis was performed through the use of established traffic engineering techniques and in accordance with the standards and methodologies set forth by the County for traffic studies. The data required for the analysis was obtained from new 24-hour daily traffic counts, previous traffic studies (including numbers recorded in 2003), the City/County Association of Governments (C/CAG) Travel Demand Forecasting Model<sup>1</sup> and the Traffic Infusion on Residential Environments (TIRE) index.

Per the 2008 Hexagon Traffic Analysis report, since the proposed project would add less than 100 peak hour trips to regional roads, no analysis under the Congestion Management Program (CMP) is required. Additionally, the CMP guidelines specify that a project must implement travel demand management (TDM) measures if the project produces 100 or more new peak hour trips on CMP roadways. Further, the analysis of project traffic on CMP roadway facilities indicates that the proposed project would add approximately 19 trips to State Route 92 (SR 92) during the AM peak hour and approximately 25 trips during the PM peak hour. Therefore this project is not required to implement any TDM measures.

<sup>1</sup> City/County Association of Governments of San Mateo County, Final Congestion Management Program for 2007. Accessed by CAJA Staff at http://www.ccag.ca.gov/pdf/tac/2007%20CMP%20FINAL.pdf on September 28, 2008.

# **Analysis Scenarios**

Traffic conditions were evaluated for the following scenarios:

Existing Conditions (2008):	Existing traffic.					
Background Conditions (2008):	Existing traffic plus traffic added by currently approved development.					
Project Conditions (2013):	Background Conditions plus the proposed project; assumes 2013 traffic volumes based on projects anticipated $4.5 - 5$ year build-out.					
Cumulative Conditions (2020):	Cumulative conditions <i>with/without</i> the project; assumes year 2020 traffic volumes based on San Mateo County traffic model.					

# **Study Roadway Segments**

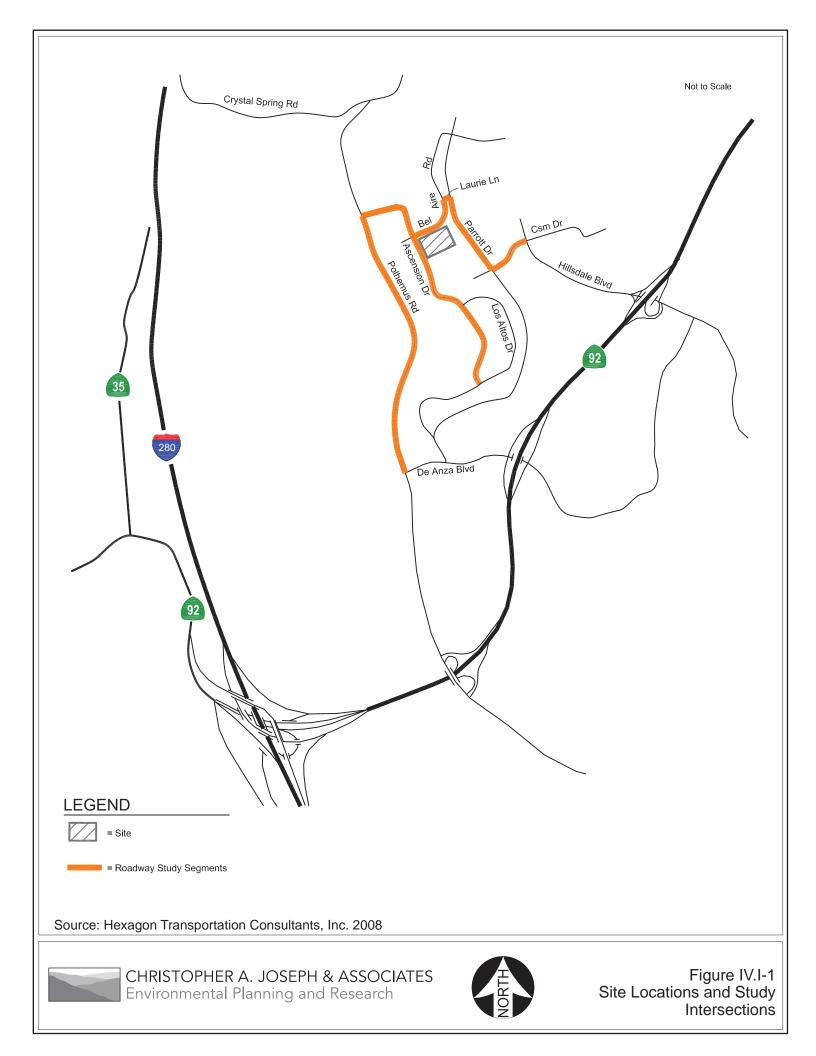
An analysis of roadway operations was performed at the six study roadway segments listed below:

- 1. Polhemus Road
- 2. Ascension Drive
- 3. Bel Aire Road
- 4. Laurie Lane
- 5. Parrott Drive
- 6. CSM Drive

The study roadway segments were determined based on the expected travel routes to and from the project site and the estimated amount of traffic volume that could have the potential to create significant traffic impacts on nearby roadways. Roadways with low volumes of project-related traffic were not included in this analysis. Figure IV.I-1 illustrates the location of the study roadway segments within proximity of the project site.

# Traffic Generation Analysis

Traffic generation rates have long been an established tool used by traffic engineers and transportation planners to estimate the likely traffic activity of a future project. They are used to evaluate the potential impacts of a project to plan transportation facility improvements. The Institute of Transportation Engineers' (ITE) Trip Generation Manual, 7th Edition (2003) is the industry standard for estimating traffic generation rates of various land uses and is based on actual trip generation studies performed at



numerous locations in areas of various populations. All land uses previously surveyed by the Institute are included in the manual, including the land use associated with the proposed project (i.e., residential). The ITE manual was used to determine the traffic that would result with development of the proposed project. The magnitude of traffic added to the specific roadway systems by the project was estimated by multiplying the applicable trip generation rates by the size of the development.

Traffic conditions on the abovementioned roadway segments were analyzed for 24-hours and for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM during these periods that the most congested traffic conditions occur on an average day. The roadway segments impacts were analyzed by comparing the volume to capacity (V/C) ratios. Per Hexagon, typical capacity is about 20,000 vehicles per day (vpd) on two-lane arterials and collectors and 2,000 vpd on a residential street.<sup>2</sup> Additionally, traffic condition impacts were evaluated using the Traffic Infusion in Residential Environments (TIRE) index.

# Traffic Infusion in Residential Environments (TIRE) Index

The TIRE index is a numerical representation of a resident's perception of the effect of street traffic on activities such as walking, cycling and playing, and on daily tasks such as maneuvering a vehicle out of a residential driveway. TIRE is expressed by index values that range from zero, representing the least effect of traffic, to five representing the most severe effect:



According to the TIRE index, a given change in traffic volume will cause a greater impact on a residential environment with a low pre-existing volume than it would on a street with a higher pre-existing volume. Any traffic change that would cause an index change of 0.1 or more would be noticeable to street residents. Streets with TIRE levels above the midrange (Moderate) index of 3 are traffic-dominated, while those with indexes below 3 are better suited for residential activities (refer to Appendix I of the DEIR).

# **ENVIRONMENTAL SETTING**

The 13.25-acre largely undeveloped project site is located within the unincorporated community of the San Mateo Highlands in the County of San Mateo, just southwest of the City of San Mateo, specifically at the eastern corner of Bel Aire Road and Ascension Drive (refer to Figures III-1, III-3 and III-4). The

<sup>&</sup>lt;sup>2</sup> Hexagon Transportation Consultants, Inc. 2008. Ascension Subdivision Residential Development, Draft Traffic Analysis Report, August 12.

project site is located approximately 0.75 miles east of Interstate 280 (I-280) and 0.75 miles west of State Route 92 (SR 92).

# **Existing Highways and Streets**

# Regional

Regional access to the project site is provided via SR 92.

*SR 92* is a four-lane east-west freeway in the vicinity of the site. SR 92 extends from Half Moon Bay in west San Mateo County to Hayward in Alameda County. Access to the project site is provided by its interchanges at Polhemus Road, De Anza Boulevard, and Hillsdale Boulevard.

# Local

Local access to the site is provided by Polhemus Road, Ascension Drive, Bel Aire Road, De Anza Boulevard, Parrott Drive, Laurie Lane, West Hillsdale Boulevard, and CSM Drive. These roadways and other local streets are described below:

*Polhemus Road* is a two-lane north-south arterial. Polhemus Road begins north of SR 92 and terminates at Crystal Springs. South of SR 92 it becomes Ralston Avenue. Access to the project site is provided via Ascension Drive.

*Ascension Drive* is a two-lane east-west residential street with sidewalks that begins east of Polhemus Road and terminates at Los Altos Drive. Access to the project site is provided via Bel Aire Road.

*Bel Aire Road* is a two-lane local residential street with sidewalks and on-street parking on one side of the street. The project would have direct access to Bel Aire Road via a new private main access road.

*De Anza Boulevard* is a two-lane east west collector with sidewalks, it begins east of Polhemus Road and continues over SR 92 and terminates at West Hillsdale Boulevard. Access to project site is provided via Parrott Drive and Polhemus Road.

*Parrott Drive* is a two-lane north-south collector street with sidewalks; it begins north of De Anza Boulevard and continues across Laurie Lane. Access to the project site is provided via Laurie Lane.

*Laurie Lane* is a short two-lane east-west local residential street with sidewalks. It begins at Bel Aire Road and terminates at Parrott Drive.

*West Hillsdale Boulevard* in the vicinity of the project site is a two-to-six-lane east-west arterial. West Hillsdale Boulevard has six lanes with a landscaped median west of SR 92, four lanes with a striped median between SR 92 and Glendora Drive, and two lanes east of Glendora Drive. Access to the project site is provided via CSM Drive.

*CSM Drive* is a two-lane east-west collector street with sidewalks; it begins within the College of San Mateo and terminates west of Parrott Drive. Access to the project site is provided via Parrott Drive.

# **Alternative Transportation Systems**

# Airports

The two closest airports to the proposed project site are the San Carlos Airport, approximately 5 miles to the east, and the San Francisco International Airport, approximately 5.5 miles to the northeast.

# Public Transit

Transit service to the study area is provided by the San Mateo County Transit District (SamTrans) and Caltrain. These services are described below:

# SamTrans Bus Service

There is one bus line that operates near the project site. The 260 line provides service between the College of San Mateo and the San Carlos Caltrain station, via Polhemus Road-Ralston Avenue, Marine World Parkway and Redwood Shores, with 60-minute headways during commute hours.

# Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The project is located approximately 3 miles from the Hillsdale Caltrain station. The Hillsdale station is located near the interchange of Hillsdale Boulevard and El Camino Real. At the Hillsdale station, Caltrain provides service with approximately 10- to 20-minute headways during commute hours. The Hillsdale station has park and ride lots. There is no direct bus service from the project site to Caltrain.

# Pedestrian and Bicycle Facilities

Pedestrian facilities in the area consist of sidewalks on the neighborhood streets. The project Vesting Tentative Map (refer to Figure III-12) shows that the new private main access road would have sidewalks along most of the roadway, specifically the 32-foot wide segment. Also, there would be separate sidewalks down the hill to Ascension Drive. The sidewalks would be adequate to accommodate all pedestrian traffic between the project site and other local streets.

Per the San Mateo General Plan Bikeway Plan, existing bicycle lanes or routes within the vicinity of the project site include: Crystal Springs Road, Polhemus Road, De Anza Boulevard, and West Hillsdale Boulevard.

# **Existing Traffic Volumes (2008)**

The existing peak hour and 24-hour traffic volumes were obtained from new tube counts on the study roadway segments. The counts were conducted in late May 2008 while the College of San Mateo was in

session. The existing AM, PM, and daily traffic volumes are shown on Figure IV.I-2. The 2008 traffic count data are included in Appendix I of this DEIR.

# Existing Volume to Capacity (V/C) Ratios

The results of the V/C analysis under Existing Conditions are summarized in Table IV.I-1 below. The results show that the study roadway segments currently operate well within acceptable limits. Refer to Figure IV.I-2 for a summary of existing traffic volumes on the roadway study segments.

	Street	Canadity	Existing	
Roadway Segment	Classification	Capacity (vpd)	Volume (vpd)	V/C
1. Polhemus Rd. (Ascension Dr. to De Anza Blvd.)	Arterial	20,000	4,298	0.21
2. Ascension Dr. (Polhemus Rd. to Rainbow Dr.)	Local	2,000	1,432	0.72
3. Bel Aire Rd. (Ascension Dr. to Laurie Ln.)	Local	2,000	695	0.35
4. Laurie Ln. (Bel Aire Rd. to Parrott Dr.)	Local	2,000	953	0.48
5. Parrott Dr. (Laurie Ln. to CSM Dr.)	Collector	20,000	2,145	0.11
6. CSM Dr. (Parrott Dr. to Hillsdale Blvd.)	Collector	20,000	2,545	0.13
Notes: vpd = vehicles per day Source: Hexagon Traffic Consultants, 2008.				·

# Table IV.I-1Existing Volume to Capacity (V/C) Ratios

# Existing TIRE Index

The results of the TIRE index analysis under Existing Conditions are summarized in Table IV.I-2. Of the three local residential streets, Ascension Drive is operating slightly above the mid-range of the TIRE index. The Polhemus Road, Parrott Drive, and CSM Drive roadway segments are more traffic-dominated, which is expected for collector or arterial streets.



	Exis	sting
Roadway Segment	Volume (vpd)	Tire Index
1. Polhemus Rd. (Ascension Dr. to De Anza Blvd.)	4,298	3.6
2. Ascension Dr. (Polhemus Rd. to Rainbow Dr.)	1,432	3.2
3. Bel Aire Rd. (Ascension Dr. to Laurie Ln.)	695	2.8
4. Laurie Ln. (Bel Aire Rd. to Parrott Dr.)	953	3.0
5. Parrott Dr. (Laurie Ln. to CSM Dr.)	2,145	3.3
6. CSM Dr. (Parrott Dr to Hillsdale Blvd.)	2,545	3.4
Notes: vpd = vehicles per day. Source: Hexagon Traffic Consultants, 2008.		

 Table IV.I-2

 Existing TIRE Index of Roadway Segments

#### **Background Conditions (2008)**

Background conditions represent the traffic conditions that are expected to occur with the addition of traffic from approved developments and, as applicable, with the addition of developer-conditioned transportation improvements. Approved projects are those developments that have been approved, but which are not yet constructed or occupied.

#### **Approved Development**

There are no developments that have been approved, but not yet constructed in the vicinity of the project site. Trips generated by small or distant developments would be negligible on the study roadway segments. The effect of other foreseeable development that has not been approved by the County of San Mateo is addressed in the Cumulative analysis presented below.

#### **REGULATORY SETTING**

#### Federal and State

Currently no federal and State plans, policies and/or regulations related to transportation exist. Therefore, in addition to the thresholds of significance outlined in Appendix G of the CEQA Guidelines, the local policies and guidelines associated with circulation and transportation as defined by San Mateo County will be utilized for this analysis.

#### **Regional and Local**

## City/County Association of Governments of San Mateo County (C/CAG), Countywide Transportation Plan

The San Mateo C/CAG Countywide Transportation Plan (CTP) 2030 was adopted on January 18, 2001 in association with the cities of San Mateo County, the San Mateo County Transit District (SamTrans), and San Mateo County Transportation Authority (TA). The CTP 2010 is a planning document that envisions, directs, and prioritizes the transportation needs of San Mateo County by analyzing various transportation-related elements: roadways, transit services, land use, transportation systems management, and pricing.

## City/County Association of Governments of San Mateo County (C/CAG), Congestion Management Program

The funding package associated with Propositions 111 and 108 included a requirement that every urban county within California designate a Congestion Management Agency (CMA) that would prepare, implement, and biennially update a Congestion Management Program (CMP). In San Mateo County, the C/CAG was designated as the CMA. Subsequent legislation (Assembly Bill (AB) 2419) allowed existing CMAs to discontinue participation in the Program. San Mateo County C/CAG voted to continue to participate in and adopt a CMP. The first CMP for San Mateo County was adopted by C/CAG in 1991. It was updated and amended in 1993, 1995, 1997, 1999, 2001, 2003, and 2005. The current 2007 CMP is the eighth CMP for San Mateo County. It describes the decisions adopted by C/CAG in 2000, 2001, 2003, and 2005 to comply with the applicable sections of AB 471, AB 1791, AB 1963, Senate Bill (SB) 1636 and to include new provisions required by SB 45 and Transportation Equity Act (TEA) 21. As discussed previously, since the proposed project would add less than 100 peak hour trips to regional roads, no analysis under the Congestion Management Program (CMP) is required.

## City/County Association of Governments of San Mateo County (C/CAG), San Mateo County Comprehensive Bicycle Route Plan

The San Mateo County Comprehensive Bicycle Route Plan (CBRP) was developed by San Mateo C/CAG, the Bicycle and Pedestrian Advisory Committee, the individual cities and agencies, and citizens interested in improving the San Mateo County bicycling environment. The primary study area of the CBRP includes the entire County and all connections into adjacent communities. The focus of the CBRP is on a primary (rather than local) network of bikeway corridors for inter-city and regional travel. As an Element of the CTP, the CBRP is intended to coordinate and guide the provisions of all bicycle-related plans, programs, and projects within the County. As a Countywide Bicycle Plan, it focuses on providing bikeway connections between the incorporated cities, adjacent counties, and major regional destinations within the County. The CBRP also prioritizes recommended bikeway projects through the study area, and serves as a guide to the incorporated cities regarding bikeway policies and design standards.

#### County of San Mateo General Plan

#### 12.8 Additional Capacity

• When providing additional capacity for automobile traffic where needed, give priority to upgrading and expanding existing roads before developing new road alignments.

#### 12.10 Urban Road Improvements

• In urban areas, where improvements are needed due to safety concerns or congestion, support the construction of interchange and intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements.

#### 12.14 Financing Local Road Improvements

• Utilize all available techniques for funding local road improvements in unincorporated areas, including assessment districts, developer contributions, and County road funds. Ensure road improvements are consistent with adopted land use plans and area plans.

#### 12.15 Local Circulation Policies

- In unincorporated communities, plan for providing:
  - Maximum freedom of movement and adequate access to various land uses;
  - Improved streets, sidewalks, and bikeways in developed areas;
  - Minimal through traffic in residential areas;
  - Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks;
  - Access for emergency vehicles; and
  - Bicycle and pedestrian travel.

#### 12.16 Local Road Standards

• Allow for modification of road standards for sub-areas of the County, which respond to local needs and conditions as identified in area plans.

#### 12.39 Pedestrian Paths

• Encourage the provision of safe and adequate pedestrian paths in new development connecting to activity centers, schools, transit stops, and shopping centers.

#### **ENVIRONMENTAL IMPACTS**

#### **Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant transportation/traffic impact if it would:

- a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity (V/C) ratio on roads, or congestions at intersections);
- b) Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads or highways;
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- e) Result in inadequate emergency access;
- f) Result in inadequate parking capacity; or
- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

As mentioned above, roadway segments were analyzed by comparing the V/C ratios. Typical capacity is about 20,000 vpd on two-lane arterials and collectors and 2,000 vpd on a residential street. Impacts to roadway segments would be significant if the proposed project added traffic volumes beyond the segment capacity. Additionally, utilizing the TIRE Index thresholds, traffic would have a significant impact on the roadway segments if the following occurred: (1) the roadway average daily traffic (ADT) associated with the project is greater than the roadway capacity; and (2) the existing TIRE index increased by 0.1 or more.

Further, any feature of the site layout that might result in unsafe pedestrian or vehicular circulation would be considered a significant impact. Revisions to the Vesting Tentative Map (VTM; refer to Figure III-12) may be recommended to make the site circulation function more efficiently. Any on-site circulation recommendations that are not related to safety are not considered significant impacts under the CEQA, but may be required as a condition of approval.

As discussed in the Initial Study that was prepared for the Notice of Preparation (see Appendix A of this DEIR) and in Section V.C (Impacts Found to be Less Than Significant) of this DEIR, the potential impacts associated with Threshold (b), (c), and (g) listed above were determined to result in less-than-

significant impacts. Therefore, only Thresholds (a), (d), (e) and (f) listed above are addressed in the following discussion.

#### **Proposed Project**

The project applicant proposes to subdivide six legal parcels, which make up the project site, into 25 single-family lots. The lots would be located on both sides of a new 32-foot wide private street. Lot sizes would range from 10,120 square feet to 17,590 square feet (refer to Figure III-12). Each lot would be developed with one single-family house.

The proposed project includes approximately 98,102 square feet (approximately 17 percent of the total project site) of on-site private roadways, including the main access road (Lot "C" or "private street"), the Emergency Vehicle Access (EVA) road, and the new water tank access road. These roadways are discussed below:

#### Lot "C" - Main Access Road

The proposed private street (Lot "C"; refer to Figure III-12) would provide one access point for both ingress and egress at the northwestern end of the property via Bel Aire Road. On-site circulation along this street would consist of a closed loop system, with the majority of the proposed 25 lots situated on either side of this street. Per Figure III-14, the Lot "C" private street system would consist of a 50-foot wide right-of-way throughout. The majority of associated street segments would have the following characteristics: a 32-foot wide paved street surface with curbs and gutters where appropriate; 5.6-foot sidewalks along each side of the street; and curbside parking available. Conversely, a section of the private street system located within the eastern portion of the site, near the water tank parcel and Lots 7 and 17, would include a 22-foot wide street surface from curb-to-curb, with gutters where appropriate. No parking or sidewalk would be developed along this segment of the street. The street grades within the system would range from 11 to 20 percent, with surface slopes of approximately 2 percent. Street sections with greater than 15 percent grade would consist of concrete, while all other sections would include asphalt.

#### Emergency Vehicle Access Road

An EVA road would be constructed within the southeastern portion of the site, which would connect the proposed main access road or private street loop (Lot "C") near proposed Lot 25 to an egress point on Ascension Drive. This roadway would include the following features: a 20-foot wide street surface; a vehicle turn out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of 20 percent, with 2 percent surface slopes (refer to Figures III-15 and III-16).

#### Water Tank Access Road

As part of the project, the existing access road for the water tank and cell site (site is not part of the project; refer to Figure III-3 and Figure III-12) would be abandoned and a new access road would be provided to the site via the proposed on-site private street. This new access street would be bordered by retaining walls, which would be maintained by the HOA. Cal Water would maintain the access road within their dedicated parcel. The basic specifications of the road would be 15 feet in width, 2 percent cross slope, 19 percent average grade and approximately 120 feet long.

The project site location and the surrounding traffic study area are shown on Figure IV.I-1.

#### **Project Impacts and Mitigation Measures**

#### **Project Trip Generation**

Project conditions are defined as background conditions (2008) with the addition of traffic generated by the proposed project at 4.5 - 5 year build-out (2013). The estimated peak-hour and daily trip generation totals for the proposed project are shown in Table IV.I-3. The table shows that the project would generate 239 new daily trips, with 19 new trips occurring during the AM peak hour and 25 new trips occurring during the PM peak hour.

		Size <sup>1</sup> Daily -			AM Peak Hour				PM Peak Hour			
Use	Size <sup>1</sup>					Trips				Trip	IS	
		Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total	
Single-Family												
Detached Residential								25				
<sup>1</sup> Size expressed in dwelling units (d.u.) Source: Institute of Transportation Engineers, Trip Generation, 7 <sup>th</sup> Edition, 2003.												

Table IV.I-3Proposed Project Trip Generation

#### Project Trip Distribution and Assignment

The trip distribution pattern for the proposed project was estimated based on existing travel patterns on the surrounding roadway system and minimum travel times between the site and SR 92. Travel time runs conducted for this study showed that the fastest route between the site and SR 92 is via Laurie Lane, Parrott Drive, CSM Drive, and Hillsdale Boulevard. Nevertheless, some traffic was assumed to use Ascension Drive and Polhemus Road. Based on the trip distribution shown, the peak-hour trips generated by the proposed development project were assigned to the roadway system following logical paths. The project trip distribution and assignment are shown on Figure IV.I-3.

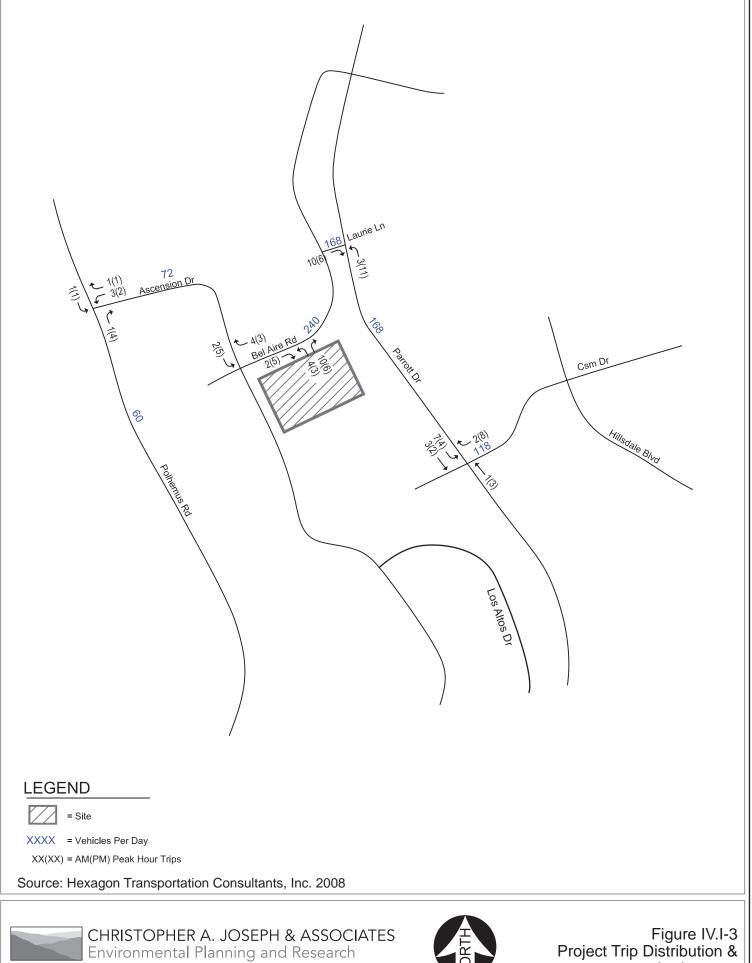




Figure IV.I-3 Project Trip Distribution & Assignment

#### Impact TRANS-1 Near-Term (2013) Project Traffic Impacts

#### Peak Hour Traffic Volumes and V/C

As described above, the project would generate approximately 239 project trips. Project conditions were defined as background conditions (2008) with the addition of traffic generated by the proposed project at 4.5 - 5 year build-out (2013). The Near-Term (2013) project traffic volumes are shown in Figure IV.I-4. Traffic conditions at the study roadway segments were evaluated using V/C. The roadway segments V/C for the Near-Term (2013) project conditions are summarized in Table IV.I-4 below. The results show that traffic increase on the all study roadway segments would be *less than significant*, as the increase would not exceed the capacity of the particular roadway segment. Therefore, no mitigation measures are required.

		Exis	ting	Pro	posed Proj	ject
Roadway Segment	Capacity (vpd)	Volume (vpd)	V/C	Project Trips (vpd)	Volume (vpd)	V/C
1. Polhemus Rd. (Ascension Dr. to De Anza Blvd.) (60)	20,000	4,298	0.21	+60	4,358	0.22
2. Ascension Dr. (Polhemus Rd. to Bel Aire Rd.) (72)	2,000	1,432	0.72	+72	1,504	0.75
3. Bel Aire Rd. (Ascension Dr. to Laurie Ln.) (240)	2,000	695	0.35	+240	935	0.47
4. Laurie Ln. (Bel Aire Rd. to Parrott Dr.) (168)	2,000	953	0.48	+168	1,121	0.56
5. Parrott Dr. (Laurie Ln. to CSM Dr.) (168)	20,000	2,145	0.11	+168	2,313	0.12
6. CSM Dr. (Parrott Dr. to Hillsdale Blvd.) (118)	20,000	2,545	0.13	+118	2,663	0.13
Notes: vpd = vehicles per day. Source: Hexagon Traffic Consultants, 2008.						

 Table IV.I-4

 Near-Term (2013) Project Volume to Capacity (V/C) Ratios

#### Project TIRE Index

Traffic conditions at the study roadway segments were also evaluated using the TIRE index. The TIRE Index for the six roadway segments are shown in Table IV.I-5 below.



	Exist	ing	Pro	posed Proj	ect
Roadway Segment	Volume (vpd)	TIRE Index	Project Trips (vpd)	Volume (vpd)	TIRE Index
1. Polhemus Rd. (Ascension Dr. to De Anza Blvd.)	4,298	3.6	+60	4,358	3.6
2. Ascension Dr. (Polhemus Rd. to Bel Aire Rd.)	1,432	3.2	+72	1,504	3.2
3. Bel Aire Rd. (Ascension Dr. to Laurie Ln.)	695	2.8	+240	935	3.0
4. Laurie Ln. (Bel Aire Rd. to Parrott Dr.)	953	3.0	+168	1,121	3.1
5. Parrott Dr. (Laurie Ln. to CSM Dr.)	2,145	3.3	+168	2,313	3.4
6. CSM Dr. (Parrott Dr. to Hillsdale Blvd.)	2,545	3.4	+118	2,663	3.4
Notes: vpd = vehicles per day. Results shown in bold represent a TIRE Index increase great Source: Goodrich Traffic Group.	ter than 0.1.		·		

 Table IV.I-5

 Near-Term (2013) Project TIRE Index of Roadway Segments

The results show that the traffic increase due to the proposed project would cause three of the study roadway segments to incur an equal to or greater than 0.1 change to the existing TIRE index. The increase in traffic due to the project would cause the TIRE index for Bel Aire Road to change from an index of 2.8 to 3.0. Similarly, the TIRE index for Laurie Lane would change from an index of 3.0 to 3.1, and the TIRE index for Parrott Drive would change from an index of 3.3 to 3.4. The definition of change in the TIRE index is that the traffic increase would be noticeable to residents along the street. Thus, the traffic increase due to the proposed project would be noticeable on these roadways; however, it would not be noticeable on the other area streets. Although the change in traffic volume would be well below the residential street threshold of 2,000 vpd. Therefore, the traffic increase on Bel Aire Road and on Laurie Lane is considered less than significant. Similarly, while the increase in traffic would be noticeable on Parrott Drive, the traffic volume would be well below its threshold of 20,000 vpd as a collector street. Therefore, the traffic increase on Parrott Drive is also considered less than significant. Thus, TIRE Index related impacts would be *less than significant* and no mitigation measures are required.

For the reasons discussed above, Near Term (2013) project-related traffic volumes would result in a *less-than-significant* impact and no mitigation measures are required.

#### Impact TRANS-2 Cumulative (2020) Without/With Project Traffic Impacts

The proposed project build-out is expected to take approximately 4.5 - 5 years. The San Mateo County traffic model 2020 forecasts were used to estimate that growth in the area is projected to be about 5 percent per year. Thus, for example, if construction were to begin in 2008, the existing volumes would be increased 25 percent to represent 2013 conditions. This increase would cover currently proposed related projects (refer to Table III-1) and other growth not yet defined.

Table IV.I-6 provided below shows the Cumulative (2020) without/with project resulting volumes and V/C ratios on the study roadways. As shown in this table, the roadways would continue to operate well within capacity. Refer to Figure IV.I-5 for traffic volumes under cumulative (2020) conditions with the proposed project. The proposed project under cumulative (2020) conditions would not increase traffic on Ascension Drive or Bel Aire Drive over the 2,000 vpd capacity, as well as the other study roadways outlined below. As these roadways would continue to operate well within capacity; impacts would be *less than significant* and no mitigation measures are required.

	Capacity	Witl Proposed		With Proposed Project		
Roadway Segment	(vpd)	Volume (vpd)	V/C	Project trips (vpd)	Volume (vpd)	V/C
1. Polhemus Rd. (Ascension Dr. to De Anza Blvd.)	20,000	5,373	0.27	+60	5,433	0.27
2. Ascension Dr. (Polhemus Rd. to Bel Aire Rd.)	2,000	1,790	0.90	+72	1,862	0.93
3. Bel Aire Rd. (Ascension Dr. to Laurie Ln.)	2,000	869	0.43	+240	1,109	0.55
4. Laurie Ln. (Bel Aire Rd. to Parrott Dr.)	2,000	1,191	0.60	+168	1,359	0.68
5. Parrott Dr. (Laurie Ln. to CSM Dr.)	20,000	2,681	0.13	+168	2,849	0.14
6. CSM Dr. (Parrott Dr. to Hillsdale Blvd.)	20,000	3,181	0.16	+118	3,299	0.16
Notes: vpd = vehicles per day Source: Hexagon Transportation Group, Inc., 2008.						

 Table IV.I-6

 Cumulative (2020) Without/With Project Volume to Capacity (V/C) Ratios

#### Impact TRANS-3 Site Access and On-Site Circulation

As outlined above, the proposed project includes approximately 98,102 square feet (approximately 17 percent of the total project site) of on-site private roadways, including the main access road, the EVA road, and the new water tank access road.

#### Site Access

As mentioned previously, access to the site would be provided via the new private main access road connecting to Bel Aire Road. Emergency vehicle access to the project would be provided via the new private main access road, as well as the new EVA road, which would connect to Ascension Drive.



#### Main Site Access

**Sight Distances on Bel Aire Road.** At the intersection of Bel Aire Road and the new private main access road, sight distance was analyzed by Hexagon during the preparation of the 2008 Traffic Analysis Report. For inbound left turns the sight distance is 210 feet. The Caltrans *Highway Design Manual* specifies minimum required sight distances as a function of vehicle speed. Vehicle speed is, in turn, a function of the design of Bel Aire Road. The estimated 85<sup>th</sup> percentile speed on Bel Aire Road is 29 miles per hour, which requires a minimum stopping sight distance of 200 feet. Since the available sight distance (210 feet) is greater than the minimum stopping sight distance (200 feet), the sight distance at this location is satisfactory. For outbound left or right turns the sight distance is at least 260 feet. This sight distance was found to be satisfactory for the prevailing speeds on Bel Aire Road. Therefore project impacts related to site access would be *less than significant* and no mitigation measures are required.

#### EVA Access

Several factors determine whether a project has sufficient access for emergency vehicles, including:

- Number of access points (both public and emergency access only);
- Width/Grade of access points; and
- Width/Grade of internal roadways.

Each of these factors is discussed in further detail below.

**Number of Access Points**. The California Department of Forestry and Fire Protection (CALFIRE) requires a subdivision to provide secondary emergency access if the subdivision includes a dead-end road that exceeds a certain length. For parcels zoned for 1 to 4.99 acres, the maximum length is 1,320 feet. For parcels zoned for 5 to 19.99 acres, the maximum length is 2,640 feet. The project is in conformance with these requirements. As stated previously, the project is accessible from two points on two roadways, which provide access to the private street within the project site. Each home can be accessed from multiple directions and at least two access points. Thus, if one access point is blocked, the other access point could be used by emergency vehicles to reach any residential home. The access into the project by emergency vehicles is considered adequate; therefore, this impact would be *less than significant* and no mitigation measures are required.

<u>Width/Grade of Access Points.</u> The EVA roadway would include the following features: a 20-foot wide street surface; a vehicle turn-out; multiple level (5 to 10 feet high) keystone block retaining walls (i.e., two walls on the north side of the street near Lot 21 and 22 and three walls along the eastern and southeastern portions of the street); and maximum street grades of approximately 20 percent, with 2 percent surface slopes (refer to Figure III-15). As discussed below, 20 percent road grades are allowed by County design exception. Additionally, per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, the maximum proposed grade (i.e., 20 percent) for the EVA road

would be acceptable based on documentation within their files, as well as the fact that the EVA road is a secondary access road.<sup>3</sup> Therefore, impacts would be *less than significant*.

Width/Grade of Internal Roadways. See above discussion and On-Site Circulation discussion below.

#### **On-Site Circulation**

The on-site circulation attributes are described above under the Proposed Project sub-discussion. On-site circulation issues associated with the proposed project's main access road include: road widths, grades, and curves.

#### Road Widths

Per the Vesting Tentative Map, the new private main access road width would be 32 feet from curb-tocurb. There is one section that would be 22 feet wide from curb-to-curb. Because of the steep grades and curves on-site, it would be difficult for drivers to maneuver within 32 feet with parking located on both sides of the street. Therefore, parking should be allowed on only one side of the street. As stated previously, parking would not be allowed on the 22-foot wide section. This represents a *significant* impact.

The following mitigation measure would reduce the impact described above to a *less-than-significant* level:

#### Mitigation Measure TRANS-3

• The new private main access road is planned to be 32 feet in width in most areas and 22 feet in width at the east side of the project. Given the grades and curves, this width is inadequate to allow parking on both sides. Therefore, parking shall be allowed on one side of the road along all 32-foot segments. Additionally, parking shall not be allowed on the 22-foot wide section.

#### Road Grades

As discussed above, the project includes a maximum proposed main access road grade of 20 percent. According to San Mateo County subdivision roadway standards, the typical maximum grade is 15 percent with up to 20 percent allowed by design exception. Thus, the proposed grades are acceptable by design exception. Per correspondence with the current County of San Mateo Fire Department/CALFIRE Fire Marshal, for the various maximum 20 percent grade segments within the main access road (unbroken grade greater than 150 feet) the County of San Mateo Fire Department/CALFIRE Fire Marshal has stated that this is not acceptable for primary access roads; however, the Department would allow this grade

<sup>&</sup>lt;sup>3</sup> County of San Mateo / CALFIRE, Clayton Jolley, Battalion Chief/Fire Marshal, Response to Request for Comments for Ascension Height Subdivision, May 15, 2009.

pending receipt of a finalized plan for all proposed roadway infrastructures.<sup>4</sup> Therefore, impacts would be *potentially significant*. Implementation of Mitigation Measure PS-2c (refer to Section IV.H.2, Public Services, Fire Protection) would be implemented to reduce impacts to a *less-than-significant* level.

#### Road Curves

Per the 2008 Hexagon Traffic Analysis Report, the proposed street curves were analyzed with typical vehicle templates, including cars and trucks, such as fire trucks or garbage trucks. This analysis showed that both cars and trucks could maneuver around the proposed curves. Therefore, road curve impacts would be *less-than-significant* and no mitigation measures are required.

Overall, with implementation of the mitigation measure outlined above, project impacts related to on-site circulation would be *less than significant*.

#### Impact TRANS-4 Parking

No off-site parking spaces are proposed for this project. All parking generated by the proposed project would be provided on-site and would follow County guidelines for on-site parking requirements. Parking to accommodate the proposed residential uses would be provided on each of the individual 25 lots. While parking for trails, tot lot and visitors seeking additional individual lot access would be provided via curbside parking. No parking specifics are provided at this time; however, they will be part of the final layout for each lot illustrated on the Final Map. In general, as outlined in Section III (Project Description), no parking would be allowed along 22-foot wide proposed road segments, with only 32-foot wide segments accommodating parking of vehicles. However, as noted above under Mitigation Measure TRANS-3, parking shall only be accommodated on one side of the road within 32 wide segments in order to mitigate significant road width impacts. Albeit, as all project-associated parking would be *less than significant* and no mitigation measures are required.

#### Impact TRANS-5 Pedestrian Access

As discussed above, pedestrian facilities in the area consist of sidewalks on the neighborhood streets. The project Vesting Tentative Map (refer to Figure III-12) shows that the new private access road would develop sidewalks along most of the proposed roadway, specifically along all 32-foot wide segments. Additionally, a separate sidewalk would be developed leading from the project site to Ascension Drive. Per the 2008 Hexagon report, the proposed and existing sidewalks would be adequate to accommodate all pedestrian traffic between the project site and other local streets.

<sup>&</sup>lt;sup>4</sup> County of San Mateo / CALFIRE, Clayton Jolley, Battalion Chief/Fire Marshal, Response to Request for Comments for Ascension Height Subdivision, May 15, 2009.

Further, the proposed project would include an on-site trail system (i.e., Trail 1 and Trail 2), which would connect to off-site sidewalk systems. As outlined in Section III (Project Description), Trail 1 would consist of a 5-foot wide pathway that would transverse the northern portion of the site running behind proposed Lots 1-6 and would be accessible from two points: (1) the stairs to be located near the tot lot; and (2) the far northeastern corner of the proposed on-site private main access road (near the front of Lot 6). While Trail 2 would consist of a 5-foot wide pathway, which would run through the proposed common area/conservation area located within the southwestern portion of the project site (specifically adjacent to Lots 18, 19 and 20). This trail would be accessible from two points: (1) the western portion along the private main access road (near Lot 13); and (2) via stairs leading up to the trail from Ascension Drive (refer to Figure III-12).

Therefore, impacts related to pedestrian access would be *less than significant* and no mitigation measures are required.

#### Impact TRANS-6 Construction Impacts

The most noticeable traffic impact during construction of the proposed project would be hauling excavated soil from the project site. The project applicant's civil engineer estimated 60,520 cubic yards (cy) of soil would need to be exported from the project site. Per the 2008 Hexagon report, depending on the type of truck used, a haul truck can carry about 20 cy of soil per trip. Therefore, based on the estimated 60,520 cy of export material, approximately 3,036 total haul truck round trips would be needed for exporting soil. Per Section III (Project Description), the grading is estimated to be completed in about 34 to 44 days, which calculates to be about 69 truck round trips per day. Per Hexagon, the haul routes should be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road. Heavy trucks would not be recommended on Ascension Drive due to the steep grade. The project applicant has stated that parking for construction vehicles and workers would be accommodated entirely within the project site. As such, there would not be a need to park on Bel Aire Road.

The grading and construction phase of the proposed project could overlap with other projects in the vicinity, particularly the new Crystal Springs Bypass Tunnel project and the various improvement projects at the College of San Mateo. Depending on the actual construction dates of the proposed project and various related projects (refer to Table III-1; in particular related projects in the vicinity of the proposed project roadways), it is possible that heavy trucks required to import and/or export materials to the related project sites could use roads to be used by the soil haul trucks for the proposed project.

Although project construction traffic is a temporary condition, the additional trips on roadways could contribute to a noticeable traffic increase on Ascension Drive, Bel Aire Road, Laurie Lane, Parrott Drive, De Anza Boulevard, Polhemus Road, and CSM Drive. Given the amount of truck trips required for the proposed project, any additional truck traffic from the related projects would represent a *potentially significant*, but short-term cumulative traffic impact.

The following mitigation measure would reduce the impact described above to a *less-than-significant* level:

#### Mitigation Measure TRANS-6

- The haul route streets shall be limited to SR 92, West Hillsdale Drive, CSM Drive, Parrott Drive, Laurie Lane, and Bel Aire Road. That would minimize the number of residential streets used by trucks. Trucks shall not utilize Ascension Drive because of the existing traffic level and the steep grade.
- Construction activity shall be limited to the hours of 8:00 AM and 4:30 PM Monday through Friday. No activity or staging shall occur outside these hours.
- To minimize impacts to traffic and public safety, truck traffic for soil export from the project site shall be limited to between the hours of 10:00 AM and 3:00 PM.
- Loaded trucks shall be limited to a maximum speed of 20 mph when operating in residential areas.
- No staging of trucks or construction equipment shall occur within the adjacent residential area at any time.
- Temporary "truck crossing" signs shall be placed in both directions on Bel Aire Road near the site entrance. Flagmen shall be used, as necessary, to control traffic during the arrival and departure of trucks and equipment.
- Construction workers shall be required to park on-site, i.e., no parking on Bel Aire Road or Ascension Drive.
- If construction or haul trucks driving to and/or from the project site cause any substantial damage to private driveways in the immediate vicinity of the project site, such damage shall be repaired by, or paid for by, the project applicant.
- As a condition of the grading permit required of the project applicant by the County, the applicant shall be responsible for the repair of any damage to roads resulting from the export of soil from the project site. Such repair shall be to the satisfaction of the San Mateo County Department of Public Works.

#### LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of mitigation measures, all transportation and traffic impacts would be *less than significant*.

### IV. ENVIRONMENTAL IMPACT ANALYSIS J. UTILITIES & SERVICE SYSTEMS 1. SEWER

#### INTRODUCTION

This section of the Draft Environmental Impact Report (DEIR) addresses the subject of utilities and service systems with respect to the proposed Ascension Heights Subdivision project ("proposed project") and includes an assessment of potential impacts associated with the development of the proposed project on the existing and proposed utilities and service systems. The utilities and service systems section is subdivided into the following three subsections: (1) Sewer; (2) Water; and (3) Solid Waste.

#### METHODOLOGY

Potential project impacts on sewer systems were evaluated based on the adequacy of existing and planned infrastructure and the capacity to meet the additional demand for sewer services resulting from development of the proposed project. The following factors were taken into consideration in performing the impact analysis, whether the proposed project would: require construction of new wastewater treatment facilities or expansion of existing facilities; or result in a determination by the wastewater treatment provider that it does not have adequate capacity to serve the project. The responsible agency was contacted regarding the potential impacts on their facilities. Responses from utilities and service system agencies are included in Appendix C to this DEIR. In addition, various utilities and service systems policies and guidelines as defined by San Mateo County were also reviewed and considered during the project impact analysis.

#### **ENVIRONMENTAL SETTING**

The project site is located in an unincorporated portion of San Mateo County and is served by the Crystal Springs County Sanitation District (CSCSD). The CSCSD is located on the San Francisco Peninsula in the area roughly bounded by the Arthur Younger Freeway (State Route [SR] 92) in the south, the Junipero Serra Freeway (Interstate 280 [I-280]) in the west, Crystal Springs Road in the north and Parrot Drive in the east.<sup>1</sup> The CSCSD's sewer collection system is characterized as a gravity system that consists of approximately 19 miles of 6-inch to 15-inch-diameter vitrified clay pipe with some sections of plastic pipe.<sup>2</sup> The main trunk sewer in the CSCSD is a 10-inch to 15-inch-diameter sewer located in the valley along Polhemus Road.

The project site, which is currently undeveloped and does not generate sanitary sewer effluent, is not connected to a wastewater collection system. In general, wastewater generated from uses in the

<sup>&</sup>lt;sup>1</sup> County of San Mateo, Crystal Springs County Sanitation District, Sewer Master Plan, August 1999, page 1-1.

<sup>&</sup>lt;sup>2</sup> County of San Mateo, Crystal Springs County Sanitation District, Sewer Master Plan, August 1999, page 2-1.

surrounding area enters existing sewer infrastructure owned and maintained by the Town of Hillsborough. This wastewater then flows to sewer infrastructure owned and maintained by the City of San Mateo, for treatment at the wastewater treatment plant owned and operated by the City of San Mateo.

The City of San Mateo Wastewater Treatment Plant (SMWTP), located at 2050 Detroit Drive, provides secondary treatment during the winter, and advanced secondary treatment by adding filtration during the summer to San Mateo, Foster City, Hillsborough, Belmont, and portions of unincorporated San Mateo County. The SMWTP discharges an average of 12 million gallons per day (mgd) of treated sewage into San Francisco Bay through a submerged diffuser adjacent to the San Mateo-Hayward Bridge.<sup>3</sup>

The SMWTP operates under a discharge permit (National Pollution Discharge Elimination System (NPDES) Permit Number CA0037541) issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB), by authority of the U.S. Environmental Protection Agency (U.S. EPA). This discharge permit specifies operating conditions, including strict discharge limitations on the final effluent. Operating personnel are required to be certified by the State Water Resources Control Board (SWRCB), at a level corresponding to the level of complexity and the design flow of the SMWTP.

The SMWTP has been modified and expanded over the years to accommodate the increasing flows and to improve treatment efficiency. In the spring of 1996, the City completed the last expansion that increased the hydraulic capacity of the plant to 15.7 mgd during the dry months (April 11-October 31) and 60 mgd total primary capacity.<sup>4</sup> Recently, the construction of Anaerobic Digester #2 was completed and testing was scheduled to begin during the summer of 2008.<sup>5</sup> Centrifuges are in place and testing will commence once digester testing is completed. Once the digester operation is certified, the demolition of the Zimpro process equipment and vacuum filter dewatering equipment will commence. Anaerobic Digester #1 has been taken out of service, drained and cleaned. The rehabilitation project for this digester has begun, with an expected completion date of late 2008.

In February of 2003, the CSCSD approved a project (Project No. SC101, F-36 [275B] "Polhemus Road Sanitary Sewer Replacement Project") to replace or rehabilitate 1.05 miles of existing sanitary sewer main in Polhemus Road, and the rerouting of the connection point to the Town of Hillsborough sewer main near the intersection of Polhemus Road and Crystal Springs Road.<sup>6</sup> The proposed improvements

<sup>&</sup>lt;sup>3</sup> City of San Mateo, Public Works Department, Wastewater Treatment Plant. Accessed by CAJA Staff at http://www.ci.sanmateo.ca.us/index.asp?NID=156 on September 25, 2008.

<sup>&</sup>lt;sup>4</sup> City of San Mateo, Wastewater Treatment Plant, Correspondence with Mark Von Aspern, Director, September 25, 2008.

<sup>&</sup>lt;sup>5</sup> City of San Mateo, Public Works Department, Improvements Project. Accessed by CAJA Staff at http://www.ci.sanmateo.ca.us/index.asp?NID=326 on November 21, 2008.

<sup>&</sup>lt;sup>6</sup> County of San Mateo, Neil R. Cullen, Director of Public Works, Inter-Departmental Correspondence, February 7, 2003.

were completed and they resulted in an increase in overall flow capacity for the system and reduced both inflow and infiltration into the sewer main.<sup>7</sup>

Tentative Cease and Desist Order No. R2-2008-0065 requires the City of San Mateo, Town of Hillsborough, and the CSCSD in San Mateo County to cease and desist discharging waste from their respective sanitary sewer systems in violation of requirements Regional Water Quality Control Board (RWQCB) Order Nos. 01-071 and R2-2007-0075 (NPDES Permit No. CA 0037541), Water Quality Control Plan for the San Francisco Bay Basin, and State Water Quality Control Board (SWQCB) Order No. 2006-0003 DWQ. Factors contributing to these violations include: the collection system and the SMWTP receiving high flows during rainy season, SMWTP problems, and the Crystal Springs/El Cerrito Trunk being significantly surcharged during wet weather. As of June 2, 2008, the CSCSD has developed all of the required elements of its Sewer System Management Plan pursuant to the RWQCB letter dated July 7, 2005, and SWQCB Order No. 2006-0003 DWQ. However, the CSCSD continues to have sanitary sewer overflows (SSOs) caused by root blockages. Therefore, the CSCSD must make necessary adjustments to reduce and eliminate SSOs from its collection system. In accordance with California Water Code Section 13301, that the City of San Mateo, Town of Hillsborough, and the CSCSD shall cease and desist from discharging and threatening to discharge wastes in violation of RWQCB and SWQCB orders by complying with provisions related to the following topics: immediate elimination of SSOs; spill response, recordkeeping, notification, and reporting; collection system maintenance and management; collection system condition and capacity assessments; capacity assurance; infrastructure renewal; and options for coordination.

In a letter addressed to County of San Mateo from the City of San Mateo Department of Public Works regarding the planning of two subdivisions in the CSCSD (one of which is the proposed project), the CSCSD is noted as being in arrears in its payments in an amount of \$1,274,000 to the City of San Mateo for operating and capital costs due under the Sanitary Sewer Agreement. Therefore, the City of San Mateo Department of Public Works cannot approve the additional flow that would result from these new subdivisions.

#### **REGULATORY SETTING**

#### Federal

#### United States Environmental Protection Agency (U.S. EPA)

#### Clean Water Act

The federal Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. The CWA made it unlawful for any person to discharge any pollutant from a

<sup>&</sup>lt;sup>7</sup> County of San Mateo, Public Works Department, Julie Young, Associate Civil Engineer, Phone Interview with CAJA Staff, November 24, 2008.

point source into navigable waters, unless a permit was obtained under its provisions. The CWA assists in the development and implementation of waste treatment management plans and practices by requiring provisions for treatment of waste using best management practices (BMPs) technology before there is any discharge of pollutants into receiving waters, as well as the confined disposal of pollution, so that it will not migrate to cause water or other environmental pollution. Additionally, CWA funds the construction of sewage treatment plants under the construction grants program.

#### National Pollutant Discharge Elimination System

The Water Permits Division (WPD) within the U.S. EPA Office of Wastewater Management leads and manages the NPDES permit program. As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S. The NPDES permit program oversees stormwater management and sewer and sanitary sewer overflows.

#### State

#### Porter-Cologne Water Quality Control Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) to preserve, enhance and restore the quality of the State's water resources. The Porter-Cologne Act established the SWRCB and the nine individual RWQCBs as the principal state agencies with the responsibility for controlling water quality in California. Under the Porter-Cologne Act, water quality policy is established, water quality standards are enforced for both surface and groundwater, and the discharges of pollutants from point and non-point sources are regulated. The Porter-Cologne Act authorizes the SWRCB to establish water quality principles and guidelines for long-range resource planning, including groundwater and surface water management programs and control and use of recycled water.<sup>8</sup>

#### Urban Water Management Plan

In accordance with the California Water Code Division 6, Part 2.6, Sections 10610 through 10656, also known as the UWMP Act, all urban water suppliers who directly serve 3,000 or more customers or who provide 3,000 or more acre-feet of water per year (AFY) are required to prepare a Urban Water Management Plan (UWMP). UWMPs are comprehensive reports identifying service area, sources of supply, reliability of supply, past, current and projected water use by type of use, conservation programs, public information and school education programs, capital projects. The purpose of the UWMP Act is to ensure that water suppliers plan for the long-term conservation and efficient use of the State's limited urban water supplies. The UWMP must be updated every five years and filed with the Department of Water Resources (DWR) and any city or county in the service area of the water provider.

<sup>&</sup>lt;sup>8</sup> United States Department of Energy, Porter-Cologne Water Quality Control Act. Accessed by CAJA Staff at http://www.etec.energy.gov/Regulation/Porter-Cologne-Water-Quality-Control-Act.htm on April 22, 2008.

The 2007 UWMP for the Mid-Peninsula District (which encompasses the project area) was adopted by the Vice President of Engineering & Water Quality on December 21, 2007 and was submitted to DWR within 30 days of approval.

#### **Regional and Local**

#### Regional Water Quality Control Board (RWQCB), Region 2

The RWQCB Region 2 (San Francisco Bay) office and the Central Coast office (Region 3) of the RWQCB share jurisdiction in San Mateo County; however, it is the Region 2 office, which has jurisdiction over the area of the project site. The RWQCB Region 2 office develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region. In accordance with Section 13263 of the California Water Code, RWQCBs are authorized to issue Waste Discharge Requirements (WDR), as well as periodically review self-monitoring reports submitted by the discharger, and perform independent compliance checking, and take enforcement action if necessary.

#### County of San Mateo, Crystal Springs County Sanitation District (CSCSD) Sewer Master Plan

In August 1999, Brown and Caldwell prepared a sewer system master plan for the CSCSD. The County authorized this work through an agreement with Brown and Caldwell dated December 17, 1996. The report provides a prioritized capital improvement program along with recommended follow-up field investigations and potential funding mechanisms.

#### County of San Mateo General Plan

#### 7.21 Suitable Land within City Sphere of Influence

• Consider that lands may be included within a city sphere of influence only if they are generally suitable for urban services (e.g., public sewer systems, public water supplies, fire and police protection) and urban land uses.

#### 8.31 Overcoming Constraints to Development

• Encourage efficient and effective infrastructure (e.g., water supply, wastewater, roads) necessary to serve the level of development allowable within urban areas.

#### 11.1 Adequate Wastewater Management

• Plan for the provision of adequate wastewater management facilities to serve development in order to protect public health, wildlife habitats, and water quality.

#### 11.4 Adequate Capacity for Unincorporated Areas

• Plan for the availability of adequate sewerage collection and treatment capacity for unincorporated urban areas.

#### **ENVIRONMENTAL IMPACTS**

#### Thresholds of Significance

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact in regards to wastewater if it would:

- a) Exceed wastewater treatment requirements of the applicable RWQCB;
- b) Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As discussed in Section V.C (General Impacts Section) of this DEIR, the potential impact associated with Threshold (a) was determined to result in a less-than-significant impact. Therefore, only Thresholds (b) and (e) listed above are addressed in the following discussion.

#### **Proposed Project**

The existing off-site sewer services are discussed above under the Environmental Setting subheading. The proposed on-site sewer system would consist of the development of underground sanitary sewer pipelines, gravity lines, risers, clean-outs and manholes (refer to Figure III-17). The proposed on-site pipeline system would include two separate sewer pipelines that would be installed within the northern and southern portions of the site (i.e., North [Line "A"] and South [Line "B"]). The pipelines would be installed within the on-site private roadway right-of-way. Line A would connect the individual systems associated with Lots 1-13 and convey the summation of wastewater along the northern portion of the private street before exiting the site via a new underground sewer line connection along Bel Aire Road. Additionally, Line B would connect the individual structures for Lots 14-25 for conveyance of wastewater off-site via a new pipeline segment running underground along Ascension Drive. The sewer system would connect to existing systems via the new system lines. All sewer lines leaving the site would be gravity fed, while the on-site lines would consist of a pressure system. Both of the proposed off-site sewer line extensions would connect into the existing CSCSD system. The sewer ejector pumps would be pre-manufactured, all-inclusive pumps with battery back-up, high water alarm, and would have industry-standard holding capacities. All appropriate utility-related easements would be provided within

the proposed on-site development. The appropriate utility infrastructure would be added after the grading phase.

#### **Project Impacts and Mitigation Measures**

#### Impact UTIL-1 Result in a Determination by the Wastewater Treatment Provider that it does not have Adequate Capacity to Serve the Project's Projected Demand in Addition to the Provider's Existing Commitments or Result in the Construction of New Wastewater Treatment Facilities

#### Sewer Services

Implementation of the proposed project would increase the amount of wastewater generated in the project area. The project would add wastewater produced by 25 single-family residential uses to the wastewater collection facilities of CSCSD, Hillsborough and the SMWTP. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>9</sup> As such, the amount of wastewater generated at the project site would increase. The site is currently undeveloped and does not produce any wastewater.

The San Mateo County Department of Public Works in its capacity of administering the CSCSD uses the sewage generation rate of 220 gallons per day (gpd) per equivalent residential unit.<sup>10</sup> Based on this generation rate of 220 gpd multiplied by the 25 proposed dwelling units, the proposed project is anticipated to generate approximately 5,500 gpd of wastewater, or approximately 0.0055 mgd. As mentioned above, wastewater from the proposed project site would be conveyed via proposed and existing wastewater infrastructure to the SMWTP. Currently, the SMWTP discharges an average daily flow of 12 mgd and has capacity to treat 15.7 mgd during the dry months (April 11 through October 31). This translates into a remaining capacity of 3.7 mgd at average daily flows that can be treated at the SMWTP during the most stressed time of the year (i.e., dry months). With an anticipated average daily wastewater generation of approximately 0.0055 mgd, the proposed project would represent approximately 0.0005 percent<sup>11</sup> of the daily flows treated by the SMWTP. Hence, the SMWTP has sufficient capacity to accommodate wastewater generated by the proposed project. Additionally, the project does not have the potential to cause the SMWTP to exceed NPDES permit requirements. Therefore, impacts associated

<sup>&</sup>lt;sup>9</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

<sup>&</sup>lt;sup>10</sup> Generation Rate = 25 units x 220 gpd = 5,500 gpd (Source: City of San Mateo Public Works, SMWTP, September 25, 2008).

<sup>&</sup>lt;sup>11</sup> Percentage calculated using the proposed project's average daily flow (0.0055 mgd) ÷ SMWTP average daily flow (12 mgd).

<sup>&</sup>lt;sup>12</sup> Percentage calculated using the proposed project's average daily flow (0.0055 mgd) ÷ SMWTP remaining capacity flow (3.7 mgd).

with wastewater treatment capacity would be *less than significant* and no mitigation measures are required.

#### Sewer Conveyance Infrastructure

As discussed above, the proposed project would include installation of new wastewater infrastructure within the site to convey wastewater generated by the proposed uses to the existing off-site wastewater lines and to the SMWTP. The additional flow resulting from implementation of the proposed project would represent only 0.0005 percent of the existing average daily flow of 12 mgd discharged by SMWTP. Refer to Figure III-17 for an illustration of the proposed wastewater infrastructure. According to County of San Mateo Public Works Department, there are no known sewer service problems or deficiencies in the immediate project area; however, the CSCSD has identified through a Master Sewer Plan<sup>13</sup> approximately \$2.3 million in capital improvement projects within the CSCSD. Both downstream jurisdictions are evaluating projects to reduce wet weather sewer overflows. Based on the CSCSD's agreement with both downstream agencies, a portion of the costs associated with future projects will be paid by the CSCSD. The CSCSD currently has a \$1 million loan from the County General Fund for a past capital improvement project completed by the Town of Hillsborough. The CSCSD also owes the City for their proportionate share of the current wastewater treatment plant project estimated at \$1.3 million.<sup>14</sup>

The proposed project would need to obtain a final approval from the CSCSD for a sewer capacity connection permit. As discussed previously, the City of San Mateo Department of Public Works cannot approve the additional flow that would result from the proposed project. The City of San Mateo would consider granting approval for the additional flow that would result from the proposed project provided that the CSCSD pays the amount due and the CSCSD presents an acceptable plan that assures sufficient revenues necessary to meet the current costs and the future additional costs as defined in the Sanitary Sewer Agreement. Therefore, impacts associated with wastewater conveyance infrastructure would be *potentially significant*.

The following mitigation measure would reduce Impact UTIL-1 to a *less-than-significant* level:

#### Mitigation Measure UTIL-1

The applicant shall mitigate the project-generated increase in sewer flow such that there is a "zero net increase" in flow during wet weather events, by reducing the amount of existing Inflow and Infiltration (INI) into the CSCSD sewer system. This shall be achieved through the construction of improvements to impacted areas of the sewer system, with construction plans subject to CSCSD approval. Construction of

<sup>&</sup>lt;sup>13</sup> County of San Mateo, Crystal Springs County Sanitation District, Sewer Master Plan, August 1999,

<sup>&</sup>lt;sup>14</sup> County of San Mateo Department of Public Works, James C. Porter, Director of Public Works, Response to Service Letter, September 17, 2008.

improvements, as approved by the CSCSD, shall be completed prior to the start of the construction of the residences.

#### **CUMULATIVE IMPACTS**

#### Sewer Services

Implementation of the proposed project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase demands on wastewater treatment capacity. As shown in Table IV.J-1 below, the proposed project and related projects would generate wastewater at an average net daily rate of approximately 456,386 gpd or 0.5 mgd.

# Table IV.J-1 Estimated Average Daily Cumulative Wastewater Generation for Proposed Project and Related Projects

Related Project No.	Land Use	Size (units or (square feet)	Average Daily Generation Rate	Total Average (gallons/day)
1	Water Supply Pipeline Improvement	NA	NA	NA
2	Facilities Master Plan	Campus- Wide	NA	NA
3	Residential Development	99 acres 11 du	220 gal/du/day	2,420
	Bridge Demolition & Reconstruction	Entire bridge	NA	NA
4	Dam Reconstruction (located beneath the abovementioned bridge)	Existing dam	NA	NA
5	Water Supply Pipeline Improvement	Pipeline segment	NA	NA
6	Construction of tunnel riser, vault, piping and related mechanical equipment	Tunnel associated improvements	NA	NA
7	Construction of major dam improvements: outlet structures, discharge culverts, pump station, pipelines	Associated dam improvements	NA	NA
8	Residential Subdivision	34 du 5.5 acres	220 gpd per du	7,480
9	Mixed Use         Residential Development         Office Development         Commercial Development         Townhouse and Condominium         Development         Residential Development	392 du 750,000 sf 93,000 sf 330 du 344 du	220 gal/du/day 0.18 gal/sf/day 0.18 gal/sf/day 160 gal/du/day 220 gal/du/day	86,240 135,000 16,740 52,800 75,680
10	Apartment Additions	30 du 6.78 acres	160 gal/du/day	4,800

Related Project No.	Land Use	Size (units or (square feet)	Average Daily Generation Rate	Total Average (gallons/day)
11	Townhouse Development	8 du	160 gal/du/day	1,280
12	Senior Housing Facility	135 du	160 gal/du/day <sup>1</sup>	21,600
13	<i>Mixed Use</i> Residential Development Commercial Development	12 acres	NA	NA
14	Condominium Development	76 du	160 gal/du/day	12,160
15	Townhouse Development	10 du	160 gal/du/day	1,600
16	Police Station	45,000 sf	0.18 gal/sf/day	8,100
17	Condominium Development	34 du	160 gal/du/day	5,440
18	<i>Mixed Use</i> Office Development Commercial Development	23,462 sf 11,426 sf	0.18 gal/sf/day 0.18 gal/sf/day	4,224 2,057
19	<i>Mixed Use</i> Residential Development (Affordable Housing)	68 du	220 gal/du/day	14,960
	Commercial Development	2,917 sf	0.18 gal/sf/day	525
20	Mixed Use Condominium Development Commercial Development	10 du 4,000 sf	160 gal/du/day 0.18 gal/sf/day	1,600 720
21	Townhouse Development	6 du	160 gal/du/day	960
22	Office Building Renovations	22 acres	NA	NA
		F	Related Projects Total	456,386
			Net Project Total	5,500
	Cumulative Net Total (Relate	ed Projects Tota	I + Net Project Total)	461,886
sf: NA ga <sup>1</sup> This pro	: dwelling unit square feet A: Not Available l: gallons esents a conservative generation r d condominium or apartment unit.	ate because sen	ior housing is likely to ger	nerate less wastewater than a
Source: All	l generation rates, except those fo			
Sanitation, S	Sewer Generation Rates Table, Ma	urch 20, 2002 u	nless denoted with an aster	risk. The generation rate for

# Table IV.J-1 Estimated Average Daily Cumulative Wastewater Generation for Proposed Project and Related Projects

As noted above, there is a remaining capacity of 3.7 mgd of wastewater at average daily flows that can be treated at the SMWTP during the most stressed time of the year. The proposed project and related projects are anticipated to generate approximately 0.5 mgd of wastewater, which would represent approximately 4 percent<sup>15</sup> of the average daily flows treated by the SMWTP and approximately 14

Residential Development is from City of San Mateo Public Works, SMWTP, September 25, 2008.

<sup>&</sup>lt;sup>15</sup> Percentage calculated using the cumulative average daily flow  $(0.5 \text{ mgd}) \div SMWTP$  average daily flow (12 mgd).

percent<sup>16</sup> of the excess treatment capacity presently available at the SMWTP. In addition, it is possible that some of the related projects consist of redevelopment that would result in the elimination of existing wastewater generation patterns at these sites. Thus, the cumulative net total amount of wastewater generation anticipated by the proposed project and related projects, shown in Table IV.J-1, could be overstated. Future development projects within the County would be subject to the locally-mandated water conservation (e.g., Green Building Ordinances) and sewer allocation programs. County-wide water conservation efforts would also be expected to partially offset the increased cumulative wastewater generation. Cumulative increases in wastewater generation would be within the excess treatment capacity currently available and projected to be available at the SMWTP. Therefore, cumulative impacts associated with wastewater treatment capacity would be *less than significant* and no mitigation measures are required.

#### **Cumulative Sewer Conveyance Infrastructure**

Only two of the 22 related projects are within the CSCSD (Projects No. 1 and 3) and only Project 3 would affect sewer capacity.<sup>17</sup> Similar to the proposed project, Project 3 would include the installation of wastewater infrastructure to convey wastewater generated by the proposed uses to the existing SMWTP wastewater lines. Connection fees for Project 3 would help to pay for the necessary upgrades to the sewer collection pipelines (i.e., wastewater lateral lines) as identified by the County of San Mateo Public Works Department. Additionally, water conservation measures required by the County of San Mateo General Plan and Green Building Ordinance (e.g., encouraging the efficient use of water supplies through effective conservation methods, requiring the use of water conservation devices in new structural development, and encouraging exterior water conservation) would be required for Project 3 to help reduce the amount of wastewater generated with respect to sewer conveyance infrastructure.

The potential need for Project 3 to require upgraded wastewater conveyance infrastructure to accommodate its wastewater demands requires site-specific evaluation and there is little, if any, cumulative relationship between the development of the proposed project and Project 3. However, as discussed previously, the City of San Mateo Department of Public Works cannot approve the additional flow that would result from the proposed project and likely from any of the related projects located in the CSCSD. The City of San Mateo would consider granting approval for the additional flow that would result from the proposed project provided that the CSCSD pays the amount due and the CSCSD presents an acceptable plan that assures sufficient revenues necessary to meet the current costs and the future additional costs as defined in the Sanitary Sewer Agreement. The proposed project-related sewer conveyance infrastructure impacts to a less-than-significant level. The sewer line capacity for Project 3 would also be

<sup>&</sup>lt;sup>16</sup> Percentage calculated using the cumulative average daily flow (0.5 mgd) ÷ SMWTP remaining capacity flow (3.7 mgd).

<sup>&</sup>lt;sup>17</sup> County of San Mateo Department of Public Works, James C. Porter, Director of Public Works, Response to Service Letter, September 17, 2008.

evaluated by the local regulatory agencies and would be mitigated to the extent feasible in accordance with CEQA. Therefore, cumulative impacts associated with wastewater conveyance infrastructure would be *less than significant* and no additional mitigation measures are required.

#### LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the mitigation measure listed above and compliance with applicable regulations would reduce project impacts to sewer service to a *less-than-significant* level.

### IV. ENVIRONMENTAL IMPACT ANALYSIS K. UTILITIES & SERVICE SYSTEMS 2. WATER

#### METHODOLOGY

Potential impacts on water services as a result of the proposed project were evaluated based on the adequacy of existing and planned water supplies for the project and its residents. The following factors were taken into consideration in performing the impact analysis: whether the proposed project would require construction of new water service facilities or expansion of existing facilities, result in a determination by the water provider that it does not have adequate supply to serve the project, or require additional entitlements. The responsible agency was contacted regarding the potential impacts on their facilities. Responses from utilities and service system agencies are included in Appendix C to this DEIR. In addition, various utilities and service systems policies and guidelines as defined by San Mateo County were also reviewed and considered during the project impact analysis.

#### **ENVIRONMENTAL SETTING**<sup>18</sup>

California Water Service Company (Cal Water) is an investor-owned public utility supplying water service to 1.7 million Californians through over 440,000 connections.<sup>19</sup> Cal Water has provided water service to the Mid-Peninsula community since 1931.

The project site is located in the Mid-Peninsula Water District (MPWD). The MPWD, comprised of 17 square miles, currently has a service population of 124,279 persons and serves 35,415 accounts.<sup>20</sup> The MPWD is located in San Mateo County approximately 15 to 20 miles south-southeast of the City of San Francisco. The area serves the communities of San Carlos and San Mateo and adjacent unincorporated portions of San Mateo County, including: The Highlands and Palomar Park. The City of Belmont separates the Cities of San Carlos and San Mateo dividing the MPWD into two systems. These two systems are considered divisions of the MPWD. In the MPWD's San Mateo Division, 14.656 million gallons of potable water is contained in 19 tanks. In the San Carlos Division 5.748 million gallons of potable water are stored in 21 tanks.

A potable water tank owned by Cal Water, enclosed by fencing and surrounded by Monterey pine trees, is located within the project site (APN: 041-111-020) and is served by a small access road that connects to Bel Aire Road. This parcel is not a part of the proposed project. This water tank is one of 41 tanks

<sup>&</sup>lt;sup>18</sup> Unless otherwise noted, the source for the information in this subsection is: California Water Service Company, 2007 Urban Water Management Plan Mid-Peninsula District, Adopted December 21, 2007.

<sup>&</sup>lt;sup>19</sup> Bay Area Water Supply and Conservation Agency, California Water Service - Mid-Peninsula District. Accessed by CAJA Staff at http://www.bawsca.org/docs/0607\_AP\_CalWater\_MP.pdf on November 13, 2008.

<sup>&</sup>lt;sup>20</sup> Ibid.

serving the MPWD. A water main entering the project site from the north supplies water to the tank. Cal Water holds a twenty-foot wide easement along the alignment of the water main.

#### Water Supply and Availability

In accordance with the State Urban Water Management Planning (UWMP Act), which is described below, MPWD analyzed water supply in the 2007 UWMP by addressing availability of water during normal, single dry and multiple dry water years. Table IV.J-2 provides a breakdown of existing water supplies.

				One	Ν	Iulti Dry Yea	rs		
Source	Note	es	Normal (2007)	Critical Dry Year (2008)	2009	2010	2011		
San Francisco	Total Supply	(MGD)	35.08	31.39	31.39	27.30	27.30		
Public Utilities	from SFPUC	(AFY)	39,295	35,161	35,161	30,580	30,580		
Commission (SFPUC)	Est. Allotment to MPWD (AFY)		19,019	17,018	17,018	14,801	14,801		
MGD: mil Source: California	Notes: AFY: acre-feet per year MGD: million gallons per day								

## Table IV.J-2 Three Year Estimated Minimum Water Supply (AFY)

#### Purchased Water

Cal Water receives water from the City and County of San Francisco's regional system, operated by the San Francisco Public Utilities Commission (SFPUC). This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties. Therefore, the water furnished to customers in the MPWD is entirely purchased water. The projected water supply volume is summarized in Table IV.J-3.

## Table IV.J-3 Current and Planned Water Supplies from SFPUC (AFY)

2005 (Actual)	2010	2015	2020	2025	2030
18,253 19,498 19,2		19,205	19,335	19,346	19,516
	cre-feet per year nia Water Servi la District, Adop	ce Company, 2			t Plan Mid-

The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to firm-up its water supplies. The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff. The local reservoirs include: Crystal Springs Reservoirs, San Andreas Reservoir, Pilarcitos Reservoir, Calaveras Reservoir, and San Antonio Reservoir.

In 1984, Cal Water, along with 29 other Bay Area water suppliers, signed a Settlement Agreement and Master Water Sales Contract (Master Contract) with San Francisco, supplemented by an individual Water Supply Contract. These contracts, which expire in June 2009, provide for a 184 mgd (expressed on an annual average basis) Supply Assurance to the SFPUC's wholesale customers collectively. Cal Water's individual Supply Assurance is 35.39 mgd (or approximately 39,642 AFY). Although the Master Contract and accompanying Water Supply Contract expire in 2009, the Supply Assurance (which quantified San Francisco's obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely. The SFPUC can meet the demands of its retail and wholesale customers in years of average and above average precipitation. The Master Contract allows the SFPUC to reduce water deliveries during droughts, emergencies, and for scheduled maintenance activities. The SFPUC and all wholesale customers adopted an Interim Water Shortage Allocation Plan in 2000 to address the allocation of water between San Francisco, wholesale customers, and individual wholesale customers during water shortages of up to 20 percent of system-wide use.

#### Groundwater

The viability of installing groundwater wells has been investigated in the Water Supply and Facilities Master Plan for the MPWD. Findings in the Master Plan suggest that wells constructed within the MPWD will likely have limited capacity based on the hydrogeology of the region. However, Cal Water is still investigating this option, even considering the opportunistic nature of groundwater production in the area.

#### Surface Water

Cal Water does not have any surface water opportunities to supply water for MPWD.

#### **Recycled Water**

Currently, no wastewater is recycled for direct reuse in the MPWD.

#### Desalinated Water

Currently, desalinated water is not used in MPWD.

#### Transfer or Exchange Opportunities

Cal Water is not pursuing water transfers or exchanges at this time. However, during water rationing periods, or emergency conditions, Cal Water may consider water transfer entitlements and or banked water from neighboring agencies.

#### Local Water Infrastructure<sup>21</sup>

The MPWD has two main inlets. From Tunnels Pump Station, located on Canada Road near Crystal Springs Reservoir, and Hillcrest Meters, located in Redwood City, water flows through pipes in a variety of sizes ranging from 4 inches to 24 inches in diameter.

#### **Fire Flow**<sup>22</sup>

Mains, tanks, and pump stations are designed to deliver fire flows for normal residential, commercial, and industrial fires. Most storage tanks are designed to provide fire flows for a minimum of two hours. Facilities are not designed to handle wildfires such as the Oakland Hills fire, nor extended power outages such as could be possible after a major forest fire, earthquake, or other disaster.

#### Water Demand<sup>23</sup>

The average annual services for calendar year 2006 were 35,512. Single family residential services represent 87.7 percent, commercial services 9.6 percent, with all other service connection types comprising 2.7 percent. The demand per service has ranged from 157,000 to 178,000 gallons per year (gal/yr) for the past ten years, and tends to vary with changes in the climatic conditions and available supply. Cal Water has set the goal of a 10 percent reduction in demand (based on pre-drought response conditions of 1987), and expects to achieve this goal through public education and various conservation programs. This assumption was taken into consideration when computing and describing the range of overall system demand. Three demand projection scenarios were prepared to develop a range of projected demand for the MPWD. The long-term growth pattern was derived from the ten-year period 1997 to 2006. This period resulted in an overall annual average service connection growth rate of 0.12 percent. This pattern also employed the customer class factor in projecting service connection increases. The long-term growth pattern was chosen to establish the demand projection scenarios. These scenarios are described below and the past, current, and projected water demand for each scenario is shown in Table IV.J-4.

<sup>&</sup>lt;sup>21</sup> Mid-Peninsula Water District, About MPWD. Accessed by CAJA Staff at http://www.midpeninsulawater.org/view/12 on November 14, 2008.

<sup>&</sup>lt;sup>22</sup> California Water Service Company, 2007 Urban Water Management Plan Mid-Peninsula District, Adopted December 21, 2007.

<sup>&</sup>lt;sup>23</sup> *Ibid.* 

Scenario	2000	2005	2010	2015	2020	2025	2030
Scenario 1	18,088	16,876	13,680	13,855	14,036	14,222	14,413
Scenario 2	18,088	16,876	17,159	17,364	17,576	17,793	18,017
Scenario 3	18,088	16,876	19,437	19,655	19,881	20,113	20,353
Source: Cal	Y: acre-feet per ye ifornia Water Serv 2007, pages 48-50	vice Company, 20	007 Urban Wate	r Management H	Plan Mid-Peninsi	ıla District, Ado	pted December

## Table IV.J-4 Past, Current, and Projected Water Deliveries for Scenarios 1, 2, and 3 (AFY)

#### Scenario One

The long-term average growth pattern is applied to the lowest demand per service values, since 1980, for each customer class. This scenario forecasts an annual demand for the year 2030 of 14,413 acre-feet (AF) (without system losses). This scenario illustrates, based on actual demand values, that the residents of the MPWD can achieve a 28 percent reduction from pre-drought high demand. While this level of demand reduction was not sustained for very long, it is reasonable to believe that if the need was present this level could be maintained without threat to public health and safety.

#### Scenario Two

This scenario combines the long-term average growth pattern and the average annual demand per service values for each customer class. This scenario projected total demand through the year 2030 (without system losses). The demand per service varies by type of use, and therefore the total demand was calculated using each individual demand per service. This scenario represents the normal position of the demand range that should most likely occur provided the ten-percent conservation goal established by Cal Water and described above is achieved and maintained. To accomplish this level of demand it will be essential to effectively promote and implement appropriate conservation programs.

#### Scenario Three

The long-term average growth pattern is applied to the highest annual demand per service since 1980 for each customer class. The projected 2030 total demand for this scenario is 20,352 AF (without system losses). This scenario represents the total demand conditions that would exist if no conservation were achieved.

#### Summary of Purchased Water

Cal Water does not provide water to other agencies nor has any plans to due so in the future. Additional water uses such as saline barriers or groundwater recharge are not being planned. The estimated water losses for the MPWD would all be unaccounted-for system losses and are summarized in Table IV.J-5.

2000	2005	2010	2015	2020	2025	2030			
91718,088	1,37816,876	1,40313,680	1,41613,855	1,42914,036	1,44214,222	1,45514,413			
18,088	16,876	17,159	17,364	17,576	17,793	18,017			
18,088	16,876	19,437	19,655	19,881	20,113	20,353			
Source: Californ	Notes: AFY: acre-feet per year								

 Table IV.J-5

 Unaccounted-for Water Losses (AFY)

The past, current, and projected water deliveries based on the average projected consumption rate is presented in Table IV.J-6. As shown, total water use would grow from 19,004 AFY in 2000 to 19,472 AFY in 2030. The total water use presented in Table IV.J-6 would be the same as MPWD's demand projections of the SFPUC.

#### Table IV.J-6 Total Water Use (AFY)\*

2000	2005	2010	2015	2020	2025	2030
19,004	18,253	18,562	18,780	19,004	19,253	19,472
unaccounted- Source: Californ	rre-feet per year use was calculated b for water losses pres via Water Service ( er 21, 2007, page 53	ented in Table IV Company, 2007 U	J-6.		1	

Table IV.J-7 shows the water availability projections provided by SFPUC.

 Table IV.J-7

 Water Availability Projections (AFY)\*

2010	2015	2020	2025	2030
19,498	19,205	19,335	19,346	19516
<ul> <li>Notes: AFY: acre-feet per year</li> <li>* SFPUC provided these projections in their letter dated May 27, 2005, in Appendix A of the 2007 UWMP.</li> <li>Source: California Water Service Company, 2007 Urban Water Management Plan Mid-Peninsula District, Adopted December 21, 2007, page 53.</li> </ul>				

#### Supply and Demand Comparison

The following is an assessment of the reliability of its water service to the MPWD during normal, dry, and multiple dry water years. The water supply and demand assessment compares the total water supply sources available with the total projected water use over the next 20 to 25 years.

#### Normal Year Comparison

Table IV.J-8 compares the current and projected water supply and demand based on average demand (as described previously under Scenario 2) for the MPWD. The tables indicate that during average precipitation years the MPWD has sufficient water to meet the demand of the customers through 2030. The values are based on continued commitment to conservation programs and for the local supply to have full production capacity.

	2010	2015	2020	2025	2030
Supply Totals	19,498	19,205	19,335	19,346	19,516
Demand Totals	18,562	18,780	19,004	19,235	19,472
Difference	936	425	331	111	44
Difference as % of Supply	5%	2%	2%	1%	0%
Difference as % of Demand	5%	2%	2%	1%	0%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 56		Jrban Water M	lanagement Plan	Mid-Peninsula L	District, Adopted

## Table IV.J-8 Projected Normal Year Supply and Demand Comparison (AFY)

#### Single Dry-Year Comparison

Based on the operational record of other districts, the demand would be greater during a single-dry year than during a normal rainfall year. The water demand would increase due to maintenance of landscape and other high water uses that would normally be supplied by precipitation. In the case of MPWD, demand is unrelated to the rainfall pattern. Overall, the current MPWD demand pattern has remained below that of the pre-drought demand levels (1984 to 1992).

Tables IV.J-9 compares the current and projected water supply and demand. The water supply remains unchanged during single dry-year and per the SFPUC supply reliability assessment. The demand has been calculated based on average consumption rate (as described previously under Scenario 2) since the MPWD demand pattern did not change during historical single-dry year periods. Supply is marginal in meeting the demand for the MPWD. Water conservation measures would have to be aggressively pursued to reduce demand. These measures could include implementation of the four-stage rationing plan, which includes voluntary and mandatory stages, that was developed by Cal Water and is described in the 2007 UWMP.

	2010	2015	2020	2025	2030
Supply Totals	19,382	19,089	19,221	19,233	19,403
Demand Totals	18,562	18,780	19,004	19,235	19,472
Difference	820	309	216	(2)	(69)
Difference as % of Supply	4.2%	1.6%	1.1%	0.0%	-0.4%
Difference as % of Demand	4.4%	1.6%	1.1%	0.0%	-0.4%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 57		Urban Water M	lanagement Plan	Mid-Peninsula L	District, Adopted

 Table IV.J-9

 Projected Single Dry-Year Supply and Demand Comparison (AFY)

#### Multiple Dry-Year Comparison

During multiple dry-years, the supply can be curtailed by mandatory cutbacks by SFPUC and reductions in local water supply. The demand would fluctuate in conjunction with the change in supply by stricter enforcement of conservation methods as outlined four-stage rationing plan, which includes voluntary and mandatory stages, that was developed by Cal Water and is described in the 2007 UWMP. Table IV.J-10 compares the projected water supply and demand for the years between 2006 and 2010. The purchased supply projected by SFPUC anticipates a 10 percent cutback for 2006 and 2007, and 20 percent cutback for 2008 and 2009. This translates to a supply cutback for MPWD of 20 to 25 percent. Knowing that the main supply has been curtailed, the demand has been established based on lowest consumption rate that occurred for the district during the multi dry year (i.e., 1990). As shown in the table the supply is very marginal during 2006 and 2007. The demand is further reduced to its overall lowest consumption rate since 1980 (as described previously under Scenario 1) for the years 2008 and 2009. The comparison for these years shows the supply to be greater than the demand by 10 percent.

	2006	2007	2008	2009	2010
Supply Totals	16,779	16,377	15,177	14,986	19,326
Demand Totals	16,645	16,680	13,790	13,878	16,785
Difference	134	(303)	1,387	1,107	2,541
Difference as % of Supply	0.8%	-1.9%	9.1%	7.4%	13.1%
Difference as % of Demand	0.8%	-1.8%	10.1%	8.0%	15.1%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 58		Urban Water M	<b>1</b> anagement Plan	Mid-Peninsula 1	District, Adopted

 Table IV.J-10

 Projected Multiple Dry-Year Supply and Demand Comparison 2006-2010 (AFY)

Table IV.J-11 compares the projected water supply and demand for the years between 2011 and 2015. The purchased supply projected by SFPUC anticipates a normal supply for 2011, a cutback of 10 percent

for 2012 and 2013, and 20 percent cutback for 2014. Since only the supply has been curtailed, the demand has been established based on lowest consumption rate that occurred for the MPWD during the multiple dry year (i.e., 1990). The supply has a good margin for 2011 and small margin for 2012 and 2013. The demand is further reduced to its overall lowest consumption rate since 1980 (as described previously under Scenario 1) for the year 2014, which makes the supply exceed the demand by 14 percent.

	2011	2012	2013	2014	2015
Supply Totals	19,183	16,909	17,233	15,465	19,030
Demand Totals	16,813	16,841	16,869	14,109	16,924
Difference	2,370	68	364	1,356	2,106
Difference as % of Supply	12.4%	0.4%	2.1%	8.8%	11.1%
Difference as % of Demand	14.1%	0.4%	2.2%	9.6%	12.4%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 59		Urban Water M	lanagement Plan	Mid-Peninsula L	District, Adopted

Table IV.J-11Projected Multiple Dry-Year Supply and Demand Comparison 2011-2015 (AFY)

Table IV.J-12 compares the projected water supply and demand for the years between 2016 and 2020. The purchased supply projected by SFPUC anticipates a normal supply for 2016, and a cutback of 10 percent for 2017 to 2019. This equates to a cutback of 12 percent for the MPWD. Knowing that the main supply has been curtailed, the demand has been established based on the lowest consumption rate that occurred for the district during the multi dry year (i.e., 1990). The supply has a good margin from 2016 to 2020. The demand does not need to be further reduced to make the supply greater than the demand.

 Table IV.J-12

 Projected Multiple Dry-Year Supply and Demand Comparison 2016-2020 (AFY)

	2016	2017	2018	2019	2020
Supply Totals	18,888	17,013	17,333	17,036	19,156
Demand Totals	16,952	16,980	17,008	17,036	17,065
Difference	1,936	33	325	(1)	2,091
Difference as % of Supply	10.2%	0.2%	1.9%	0.0%	10.9%
Difference as % of Demand	11.4%	0.2%	1.9%	0.0%	12.3%
Notes: AFY: acre-feet per year Source: California Water Service C December 21, 2007, page 60.	1 .	Urban Water M	lanagement Plan	Mid-Peninsula I	District, Adopted

Table IV.J-13 compares the projected water supply and demand for the years between 2021 and 2025. The purchased supply projected by SFPUC anticipates a normal supply for 2021, a cutback of 10 percent for 2022 and 2023, and a cutback of 20 percent for 2024. Since the main supply has been curtailed, the

demand has been established based on the lowest consumption rate that occurred for the district during the multi dry year (i.e., 1990). The supply has a good margin from 2021 to 2023. The demand is further reduced to its overall lowest consumption rate since 1980 (as described previously under Scenario 1) for the year 2024, which makes the supply exceed the demand by 16.5 percent.

	2021	2022	2023	2024	2025
Supply Totals	19,014	17,388	17,705	15,948	19,163
Demand Totals	17,093	17,121	17,149	14,479	17,206
Difference	1,921	267	556	1,470	1,957
Difference as % of Supply	10.1%	1.5%	3.1%	9.2%	10.2%
Difference as % of Demand	11.2%	1.6%	3.2%	10.1%	11.4%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 61		Urban Water M	Ianagement Plan	Mid-Peninsula 1	District, Adopted

 Table IV.J-13

 Projected Multiple Dry-Year Supply and Demand Comparison 2021-2025 (AFY)

Table IV.J-14 compares the projected water supply and demand for the years between 2026 and 2030. The purchased supply projected by SFPUC anticipates a normal supply for 2026, a cutback of 10 percent for 2027 and 2028, and a cutback of 20 percent for 2029. Since the only supply has been curtailed, the demand has been established based on the lowest consumption rate that occurred for the district during the multi dry year (i.e., 1990). The supply has some margin from 2026 to 2028. The demand is further reduced to its overall lowest consumption rate since 1980 (as described previously under Scenario 1) for the year 2029, which makes the supply exceed the demand by 10 percent. This reduction is anticipated to occur due to stricter conservation measures.

Table IV.J-14Projected Multiple Dry-Year Supply and Demand Comparison 2026-2030 (AFY)

	2026	2027	2028	2029	2030
Supply Totals	19,021	17,769	18,082	16,319	19,327
Demand Totals	17,234	17,263	17,291	14,671	17,348
Difference	1,787	506	791	1,647	1,978
Difference as % of Supply	9.4%	2.8%	4.4%	10.1%	10.2%
Difference as % of Demand	10.4%	2.9%	4.6%	11.2%	11.4%
Notes: AFY: acre-feet per year Source: California Water Service ( December 21, 2007, page 62		Urban Water M	1anagement Plan	Mid-Peninsula	District, Adopted

#### **REGULATORY SETTING**

#### Federal

#### United States Environmental Protection Agency (U.S. EPA)

The Safe Drinking Water Act (SDWA), established on December 16, 1974, is the main federal law that ensures the quality of Americans' drinking water by setting standards for drinking water quality and provides guidance to the states, localities, and water suppliers who implement those standards.

#### State

#### State Water Resources Control Board

The Porter-Cologne Act entrusts the SWRCB and the nine RWQCBs with protecting California's waters (California Water Code 13001). As discussed previously, the RWQCBs are responsible for developing Basin Plans and regulating all pollutant or nuisance discharges that may affect either surface water or ground water in the region's jurisdiction (California Water Code 13240). Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate Regional Board (California Water Code 13260). No discharge may take place until a RWQCB issues WDRs or a waiver of the WDRs (California Water Code 13264).

#### California Department of Water Resources

The California DWR is responsible for the overall management of California's water resources. The regulations overseen by DWR regarding water service availability include the California UWMP Act and Senate Bills (SB) 221 and 610.

#### Senate Bills 221 and 610

SB 221 and SB 610 amended State law in January 2002, and are intended to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 221 and SB 610 are companion measures, which seek to promote more collaborative planning between local water suppliers, cities, and counties. SB 221 applies to the Subdivision Map Act, requiring an applicant's tentative map to verify that the public water supplier has "sufficient water supply" available to serve it. SB 610 applies to the Water Code, augmenting the CEQA process to definitively establish water availability.

#### SB 221

SB 221 applies to any "subdivision," defined as:

• A proposed residential development of more than 500 dwelling units, if the public water supplier has more than 5,000 service connections; or

• Any proposed development that increases connections by 10 percent or more, if the public water supplier has fewer than 5,000 connections

SB 221 does not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or to housing projects that are exclusively for very low and low-income households. The proposed project would not be subject to this bill because it contains fewer than 500 residential units.

#### SB 610

SB 610 requires water supply assessments (WSAs) to evaluate whether total projected water supplies will meet the projected water demand for certain development projects that are otherwise subject to CEQA review. Section 10912(a) of the California Water Code defines seven types of projects, which are subject to the mandates of SB 610, such as: (1) a residential development of more than 500 dwelling units; (2) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (3) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (4) a hotel or motel with more than 500 rooms; (5) an industrial or manufacturing establishment housing more than 1,000 persons or having more that 650,000 square feet or 40 acres; (6) a mixed use project containing any of the foregoing; or (7) any other project that would have a water demand at least equal to a 500 dwelling unit project. The proposed project would not be subject to the provisions of this bill because it does not meet any of the above-listed criteria.

#### Urban Water Management Plan

In accordance with the California Water Code Division 6, Part 2.6, Sections 10610 through 10656, also known as the UWMP Act, all urban water suppliers who directly serve 3,000 or more customers or who provide 3,000 or more AFY are required to prepare a UWMP. UMWPs are comprehensive reports identifying service area, sources of supply, reliability of supply, past, current and projected water use by type of use, conservation programs, public information and school education programs, capital projects. The purpose of the UWMP Act is to ensure that water suppliers plan for the long-term conservation and efficient use of the State's limited urban water supplies. The UWMP must be updated every five years and filed with the DWR and any city or county in the service area of the water provider. The 2007 Urban Water Management Plan for the MPWD was adopted by the Vice President of Engineering & Water Quality on December 21, 2007 and was submitted to DWR within 30 days of approval.

#### California Department of Public Health

The California Department of Public Health (CDPH) Drinking Water Program (DWP)<sup>24</sup> is within the Division of Drinking Water and Environmental Management. The DWP regulates public water systems; oversees water recycling projects; permits water treatment devices; certifies drinking water treatment and

<sup>&</sup>lt;sup>24</sup> California Department of Public Health, Drinking Water Program. Accessed by CAJA Staff at http://www.cdph.ca.gov/programs/Pages/DWP.aspx on June 2, 2008.

distribution operators; supports and promotes water system security; provides support for small water systems and for improving technical, managerial, and financial (TMF) capacity; and provides funding opportunities for water system improvements. Prior to construction of a new water system, CDPH must approve the identified water supply and the design of all proposed treatment, storage and distribution facilities. In addition, to ensure the water system will be able to deliver a high quality water service throughout the life of the improvements within its service area, the applicant must prepare a detailed plan for the long term operation, financing and management of the entire system. Once the system begins operation, monthly and quarterly water quality reports must be filed with CDPH to document the system's continued compliance with all applicable water quality regulations. At this time, drinking water quality is governed by the provisions of Title 22 of the California Code of Regulations (CCR), which specify the allowable maximum contaminant levels (MCL) for a wide range of primary and secondary water quality constituents.<sup>25</sup>

#### Groundwater Management Act (California Water Code 10750)

There are no statewide statutory regulations of groundwater in California except for groundwater flowing in subterranean streams through known and defined channels. Landowners overlying groundwater have the right to share the groundwater under their property with other overlying landowners without obtaining a permit from any state agency. Groundwater may also be used on adjacent lands, but this right is subordinate to the prior use of any overlying landowners. Surface water can be diverted or pumped into aquifers for later extraction, with SWRCB approval.

The California Ground Water Management Act, commonly referred to as Assembly Bill (AB) 3030, promotes development of voluntary groundwater management plans to guide ongoing management procedures for groundwater basins and ensure stable groundwater supplies in the future. The legislation is designed to provide local public agencies with increased management authority over groundwater resources in addition to those existing groundwater management capabilities. Several California counties have adopted groundwater regulation programs. Litigation has also resulted in court decrees regulating groundwater use in some cases.

#### Local

#### County of San Mateo General Plan

#### 10.1 <u>Coordinate Planning</u>

• Coordinate water supply planning with land use and wastewater management planning to assure that the supply and quality of water is commensurate with the level of development planned for an area.

<sup>&</sup>lt;sup>25</sup> California Department of Public Health, Public Drinking Water Systems. Accessed by CAJA Staff at http://ww2.cdph.ca.gov/certlic/drinkingwater/Pages/default.aspx on April 24, 2008.

#### 10.3 <u>Water Conservation</u>

• Promote the conservation and efficient use of water supplies.

#### 10.4 <u>Development of Water Supplies</u>

• Promote the development of water supplies to serve: (1) agricultural uses, as the highest priority; (2) domestic uses; and (3) recreational uses.

#### 10.10 <u>Water Suppliers in Urban Areas</u>

• Consider water systems as the preferred method of water supply in urban areas. Discourage use of wells to serve urban uses.

#### 10.12 <u>Coordination of Water Suppliers</u>

• Encourage water providers to coordinate the planned capacity of their facilities commensurate with the level of development permitted by adopted land use plans and wastewater management plans.

#### 10.13 <u>Water Systems in Unincorporated Areas</u>

• Support efforts to improve water distribution and storage systems in unincorporated neighborhoods and communities.

#### 10.25 Efficient Water Use

- Encourage the efficient use of water supplies through effective conservation methods.
- Require the use of water conservation devices in new structural development.
- Encourage exterior water conservation.

#### 10.26 <u>Wastewater Reuse</u>

- Encourage the reuse and recycling of water whenever feasible.
- Encourage the use of treated wastewater that meets applicable County and State health agency criteria.

#### 15.30 <u>Standards for Water Supply and Fire Flow for New Development</u>

• Require connection to a public water system or private water company or provision of an onsite water supply as a condition of approval for any new development proposal. • Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.

#### County of San Mateo Green Building Ordinance

On February 26th 2008, the San Mateo County Board of Supervisors approved a Green Building Ordinance that will apply to building projects within the unincorporated areas of San Mateo County. On October 7, 2008 the Board of Supervisors adopted an ordinance amending the regulations clarifying standards and requirements to improve the effectiveness of the Green Building Program. The purpose of the Green Building Program is to enhance public health and welfare by encouraging green building measures in the design, building and maintenance of buildings. Green Building Practices are intended to achieve the following goals:

- To encourage the conservation of natural resources;
- To reduce waste in landfills generated by construction projects;
- To increase energy efficiency and lower energy usage;
- To reduce operating and maintenance costs for buildings; and
- To promote a healthier indoor environment.

#### **ENVIRONMENTAL IMPACTS**

#### Thresholds of Significance

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact in regards to water supply if it would:

- b) Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed.

#### **Proposed Project**

The project applicant proposes to subdivide 6 legal parcels (i.e., APNs: 041-111-130, -160, -270, -280, - 320, and -360), which make up the proposed project site (excluding the water tower and cell site, APN: 041-111-020), into 25 single-family residential lots. The 25 lot sizes would range from 10,120 to 17,590 square feet (or 2.8 du/acre), where appropriate. Each lot would be developed with one single-family house. Design of the structures is not available at this time and would be proposed after the Tentative

Map is approved. Normal water usage is anticipated for single-family houses of the size typical for this neighborhood. Additionally, although there are no specific landscaping plans proposed at this time, the intent is to utilize drought-tolerant, native vegetation that require little watering once established. Fire hydrants will also be installed on-site per the State and County fire codes.

All appropriate utility-related easements would be provided within the proposed on-site development. Water service would be provided by the Cal Water via the on-site water tank located within the project site. The existing on-site water lines would be relocated to accommodate the new proposed development. The water tank would be accessed either via a connection to the water main in the private street with a saddle "T" connection. This connection would be implemented at the discretion of Cal Water. The proposed on-site water supply system would include: additional underground water pipelines and water mains in order to accommodate the proposed projects water needs (i.e., residential, fire emergency services). According to Cal Water, the developer will provide and pay for booster facilities at the tank site in order to serve the project with adequate water pressure. The proposed pipeline would loop around the proposed private street, while the water mains would be located within each individual lot (refer to Figure III-17). The on-site water pipeline segments would be connected to existing off-site water pipelines near: (1) the intersection of Bel Aire Road and the new private street; and (2) an extension from the north at the northeastern edge of the project site where other off-site single-family homes currently receive water service.

#### **Project Impacts and Mitigation Measures**

#### Impact UTIL-2 Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, and Would Not Require New or Expanded Entitlements

#### Water Supply

The proposed project does not meet any of the criteria for SB 221 or SB 610, and therefore, a WSA is not required. Implementation of the proposed project would increase the demand for water in the project area, with a project demand for 25 single-family homes from Cal Water's MPWD. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>26</sup> As such, the demand for water generated at the proposed project site would increase.

As stated previously, the MPWD's 2006 daily per capita water demand was approximately 128.0 gallons and for residential uses 89.7 gallons.<sup>27</sup> Based on this per capita generation rate of 89.7 gpd multiplied by the 69 persons generated by the proposed project, the proposed project is anticipated to demand approximately 6,189 gpd of water, or approximately 0.006 mgd or 6.72 AFY.

 <sup>&</sup>lt;sup>26</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

<sup>&</sup>lt;sup>27</sup> California Water Service Company, 2007 Urban Water Management Plan Mid-Peninsula District, Adopted December 21, 2007.

Three demand projection scenarios (Scenarios 1-3 described previously) were prepared to develop a range of projected demand for the MPWD. The long-term growth pattern was derived from the ten-year period 1997 to 2006. This period resulted in an overall annual average service connection growth rate within MPWD of 0.12 percent. The long-term growth pattern includes the population that would be generated by the proposed project. According to the existing water supply available to the MPWD (see Table IV.J-8), there is sufficient water supply during normal years for the MPWD. As shown in Table IV.J-9, supply during single dry-years would be marginal in meeting the demand for the MPWD. As shown in Tables IV.J-10 through IV.J-14, supply during multiple dry-years would range from marginal to good in meeting the demand for the MPWD. Per the MPWD's 2007 UWMP, proposed demand reduction programs contained therein are assumed to be implemented during drought years.<sup>28</sup> The proposed project would comply with all mandated conservation measures outlined in the UWMP and applicable County policies and ordinances (e.g., Green Building Ordinance).

Cal Water has stated that it is prepared to extend water service to the project site.<sup>29</sup> A deposit of the estimated cost of this extension would be required of the project applicant. Additionally, Cal Water would require approval of a satisfactory design to serve the proposed project. For example, pipeline routes in public right-of-ways where possible, and easements must have good access and be of reasonable terrain.

As described in Section IV.F (Land Use & Planning) of the DEIR, the proposed project would be consistent with the policies identified in the County of San Mateo General Plan. In addition, the project is consistent with the R-1/S-8 (one-family residential district and residential density district Number 8) zoning designation. Because of this consistency, the proposed project would not consume water in excess of the water supplies available to the County of San Mateo. Furthermore, although there are no specific landscaping plans proposed at this time, the intent is to utilize drought-tolerant, native vegetation that require little watering once established. Therefore, impacts associated with water services would be *less than significant* and no mitigation measures are required.

#### Water Supply Conveyance Infrastructure

As stated above, connection to the Cal Water system is included as part of the proposed project. It is anticipated either the project would tie in with a saddle "T" connection, or a direct connection to the storage tank located near the middle of the proposed project; however, this connection would be implemented at the discretion of Cal Water. Neither connection is likely to result in service interruptions in the proposed project area. The appropriate utility infrastructure would be added after the grading phase. As part of the conditions of approval and permitting process, the project applicant would be responsible for all costs associated with the installation of water infrastructure on the project site and the

<sup>&</sup>lt;sup>28</sup> *Ibid.* 

<sup>&</sup>lt;sup>29</sup> California Water Service Company, Ting He, P.E. Manager of Distribution, Engineering, Response to Service Letter, September15, 2008.

payment of connection fees would help to pay for the necessary upgrades to the water pipelines in the project area as a result of the proposed project. Therefore, impacts associated with water supply conveyance infrastructure would be *less than significant* and no mitigation measures are required.

#### Fire-Related Water Supply Infrastructure

According to County of San Mateo Fire Department/CALFIRE, there are currently no known fire flow or pressure issues in the project area.<sup>30</sup> However, according to Cal Water, the existing water system would not have adequate pressure to serve fire protection standards.<sup>31</sup> The proposed on-site water supply system would include additional underground water pipelines and water mains in order to accommodate the proposed projects water needs (i.e., residential, fire emergency services). Per the California Fire Code, Appendix B, fire flow is determined by the largest proposed building (using square footage of all floors) in a subdivision. If no building is over 3,600 square feet, the required fire flow would be 1,000 gallons per minute (gpm) at 20 pounds per square inch (psi) residual for a minimum of 2 hours. For structures over 3,600 square feet and no more than 4,800 square feet (for a typical wood frame construction (type VB SFD)) flows increase up to 1,750 gpm; more than 4,800 square feet (to 6200 square feet), required fire flows would be 2,000 gpm. The proposed water distribution system for the project would be designed to provide applicable fire flows at all hydrants, while maintaining a minimum residual pressure, in accordance with the standard fire design criteria. Fire hydrants will also be installed on-site per the County fire code.

The applicant would be responsible for implementation of booster facilities to be built at the water tank site to serve the project with adequate pressure. In addition to providing the necessary water pressure, the applicant will utilize fire sprinkler systems, property maintenance, vegetation management, and building construction using non-combustible materials and in accordance with the Wildland Urban Interface Building Standards. Fire hydrants will also be installed on-site per the State and County fire code. Implementation of fire safe regulations per all applicable codes would be required. Therefore, impacts associated with fire-related water supply infrastructure would be *less than significant* and no mitigation measures are required.

#### **CUMULATIVE IMPACTS**

#### **Cumulative Water Supply**

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase demands on water supply. Only seven of the 22 related projects are located outside of the City of San Mateo and within the County of San Mateo and would therefore receive

<sup>&</sup>lt;sup>30</sup> County of San Mateo / CALFIRE, Pete Munoa, Fire Marshall, Phone Interview with CAJA Staff, November 21, 2008.

<sup>&</sup>lt;sup>31</sup> California Water Service Company, Ting He, P.E. Manager of Distribution, Engineering, Response to Service Letter, September15, 2008.

their water supply from the MPWD (Projects No. 1 through 7), although only Project 3 would affect water demand. As shown in Table IV.J-15 below, the proposed project and relevant related projects (Projects No. 1 through 7) would demand an average net daily rate of approximately 8,970 gpd or 0.009 mgd.

# Table IV.J-15Estimated Average Daily Cumulative Water Demand<br/>for Proposed Project and Related Projects

Related Project No.	Land Use	Size	Average Daily Generation Rate	Total Average (gpd)
1	Water Supply Pipeline Improvement	NA	NA	NA
2	Facilities Master Plan	Campus- Wide	NA	NA
3	Residential Development	99 acres 11 du	89.7 gpd per person <sup>1</sup>	2,781 <sup>2</sup>
	Bridge Demolition & Reconstruction	Entire bridge	NA	NA
4	Dam Reconstruction (located beneath the abovementioned bridge)	Existing dam	NA	NA
5	Water Supply Pipeline Improvement	Pipeline segment	NA	NA
6	Construction of tunnel riser, vault, piping and related mechanical equipment	Tunnel associated improvements	NA	NA
7	Construction of major dam improvements: outlet structures, discharge culverts, pump station, pipelines	Associated dam improvements	NA	NA
		R	elated Projects Total	2,781
			Net Project Total	6,189
gp N2 Sources: <sup>1</sup> Californ 21, 200 <sup>2</sup> To calc per how Census	Cumulative Net Total (Relate a: dwelling unit bd: gallons per day A: Not Available mia Water Service Company, 2007 U 7. ulate the persons that would be gene usehold x 11 proposed units = 30.14 2000; Census 2000 SF1, SF3, DP1 residential uses multiplied by the 3.	Trban Water Man erated by the rela 4 or 31 persons { 1-DP4}. Based N	agement Plan Mid-Pen ted project, the followir (2.74 persons per house (PWD's 2006 daily per	ng method was used: 2.74 persons ehold based on San Mateo County capita water demand rate of 89.7

to demand approximately 2,781 gpd of water.

Three demand projection scenarios (Scenarios 1-3 described previously) were prepared to develop a range of projected demand for the MPWD. The long-term growth pattern was derived from the ten-year period 1997 to 2006. This period resulted in an overall annual average service connection growth rate within MPWD of 0.12 percent. The long-term growth pattern includes the population that would be generated

by the proposed project and related projects. According to the existing water supply available to the MPWD (see Table IV.J-8), there is sufficient water supply during normal years for the MPWD. As shown in Table IV.J-9, supply during single dry-years would be marginal in meeting the demand for the MPWD. As shown in Tables IV.J-10 through IV.J-14, supply during multiple dry-years would range from marginal to good in meeting the demand for the MPWD. Per the MPWD's 2007 UWMP, proposed demand reduction programs contained therein are assumed to be implemented during drought years.<sup>32</sup> The proposed project and the related projects would be required to comply with all mandated conservation measures outlined in the UWMP and applicable County policies and ordinances (e.g., Green Building Ordinance).

In addition, it is possible that some of the related projects consist of redevelopment that would result in the elimination of existing water demand patterns at these sites. Thus, the cumulative net total amount of water demand anticipated by the proposed project and related projects, shown in Table IV.J-15, could be overstated.

Future development projects within the County would be subject to the locally-mandated water conservation programs. County-wide water conservation efforts would also be expected to partially offset the incremental cumulative water demand as much as is feasible. Cumulative increases in water demand would be within the excess treatment capacity currently available and projected to be available at the MPWD. Therefore, cumulative impacts associated with water supply would be *less than significant* and no mitigation measures are required.

#### **Cumulative Water Supply Infrastructure**

The potential need for the related projects to require upgraded water lines to accommodate their water demands requires site-specific evaluation. However, the connection fees paid by individual applicants would help to pay for the necessary upgrades to the water lines described above. In consideration of the above, cumulative impacts associated with water supply infrastructure would be *less than significant* and no mitigation measures are required.

#### LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to water service created by the proposed project would be *less than significant*.

<sup>&</sup>lt;sup>32</sup> Ibid.

### IV. ENVIRONMENTAL IMPACT ANALYSIS K. UTILITIES & SERVICE SYSTEMS 3. SOLID WASTE

#### METHODOLOGY

Potential impacts of the proposed project on solid waste services were evaluated based on the adequacy of existing and planned solid waste disposal capacity of the landfill that would serve the proposed project. Solid waste disposal associated with the operation of the proposed project was estimated using waste generation rates from studies prepared by the California Integrated Waste Management Board (CIWMB) and information provided by the San Mateo County Ordinance 04099, and Ox Mountain Sanitary Landfill. The responsible agency was contacted regarding the potential impacts on their facilities. Responses from utilities and service system agencies are included in Appendix C to this DEIR. In addition, various utilities and service systems policies and guidelines as defined by San Mateo County were also reviewed and considered during the project impact analysis.

#### **ENVIRONMENTAL SETTING**

Allied Waste Industries, Inc. (Allied) provides the waste collection, recycling, transportation, disposal and related services to the project site and surrounding area. Allied also serves the following cities and unincorporated areas surrounding these cities: Atherton, Belmont, Burlingame, East Palo Alto, Foster City, Half Moon Bay, Hillsborough, Menlo Park, Redwood City, San Carlos, and San Mateo. Solid waste collected by Allied is taken to the South Bayside Integrated Facility (also known as the Shoreway Recycling and Disposal Center), which acts as a transfer station. From the transfer station, solid waste is then transported to the Ox Mountain Sanitary Landfill.

#### South Bayside Integrated Facility

Solid waste from the project area is hauled to the South Bayside Integrated Facility (Permit No.: 41-AA-0016), located at 225 Shoreway Road in the City of San Carlos.<sup>33</sup> The South Bayside Integrated Facility is permitted to accept mixed municipal solid waste, with a maximum daily disposal rate of 5,830 tons per day (TPD).<sup>34</sup> The South Bayside Integrated Facility station currently takes in approximately 4,000 TPD.<sup>35</sup>

<sup>&</sup>lt;sup>33</sup> California Integrated Waste Management Board, South Bayside Integrated Facility. Accessed by CAJA Staff at http://www.ciwmb.ca.gov/Profiles/Facility/Transfer/TransProfile1.asp?COID=41&FACID=41-AA-0016 on November 13, 2008.

<sup>&</sup>lt;sup>34</sup> South Bayside Waste Management Authority, April Lozal, Administrative Assistant, phone interview with CAJA Staff, November 13, 2008.

<sup>&</sup>lt;sup>35</sup> *Ibid*.

On April 26, 2007 the South Bayside Waste Management Authority (SBWMA) Board of Directors approved a facility master plan that will pave the way for needed environmental enhancements at the South Bayside Integrated Facility.<sup>36</sup> The facility master plan is currently being reviewed by SBWMA Member Agencies to determine the project scope and features. The master plan improvements are set to be constructed in three phases. Phase 1 traffic improvements are planned for fall 2008. The new Shoreway Environmental Center will be a national model for sustainable building practices and innovative recycling and material handling operations. Key features include:

- New state of the art Materials Recovery Facility for sorting single stream recyclables from residents and businesses;
- Expanded transfer station for more recycling and customer convenience;
- "Green building" features such as solar panels and use of natural light; and
- New environmental education center and demonstration gardens.

#### **Ox Mountain Sanitary Landfill**

From the South Bayside Integrated Facility, waste is transferred to the Ox Mountain Sanitary Landfill (Permit No.: 41-AA-0002), located two miles northeast of Half Moon Bay (specifically 12310 Highway 92, Half Moon Bay, CA).<sup>37</sup> As of 2000, the landfill has exceeded its permitted capacity of 37.9 million cubic yards (mcy) by approximately 6.7 mcy (17.8 percent). While the Ox Mountain landfill is currently in excess of its total permitted capacity, it continues to accept waste as the landfill gradually settles and new space becomes available. The closure date is planned for 2018. The landfill has a permitted maximum disposal of 3,598 TPD and currently receives 3,250 TPD.<sup>38</sup> The limitation is 178 round trips, made by transfer trucks, per day.

#### **Residential Solid Waste Generation**

<sup>&</sup>lt;sup>36</sup> South Bayside Waste Management Authority, Future Plans. Accessed by CAJA Staff at http://www.rethinkwaste.org/shoreway-facility/future-plans on November 13, 2008.

<sup>&</sup>lt;sup>37</sup> California Integrated Waste Management Board, Ox Mountain Sanitary Landfill. Accessed by CAJA Staff at http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=41&FACID=41-AA-0002 on November 13, 2008.

<sup>&</sup>lt;sup>38</sup> County of San Mateo, James Porter, Director, Department of Public Works, Response to Service Letter, September 17, 2008.

Solid waste is generated by industrial, commercial, institutional, residential, and other types of land uses. In the unincorporated portions of San Mateo County in 2005, the residential waste stream accounted for 23 percent of the total waste stream with the remaining 77 percent generated by nonresidential sources.<sup>39</sup>

#### **REGULATORY SETTING**

#### Federal and State

#### Integrated Waste Management Act of 1989

Two pieces of legislation (AB 939 and SB 1322) signed into law as the Integrated Waste Management Act of 1989 created and shaped the authority and responsibility of the CIWMB. The Act was enacted to reduce, recycle, and reuse solid waste generated in the State, the centerpiece of which mandated goals of 25 percent diversion of each city's and county's waste from disposal by 1995, and 50 percent diversion in 2000, along with a process to ensure environmentally safe disposal of waste that could not be diverted. AB 939 requires counties to prepare a Countywide Integrated Waste Management Plan (CIWMP). An adequate CIWMP contains a summary plan that includes: goals and objectives; a summary of waste management programs and infrastructure; information about existing and proposed solid waste facilities; and an overview of specific steps that will be taken to achieve the goals outlined in the components of the CIWMP. All jurisdictions within the State were required to reach a 50 percent diversion rate by the year 2000 or be subject to a \$10,000/day fine. Unincorporated areas in the County are currently diverting 64 percent of the waste stream to the landfill, though this rate has not yet been confirmed by the CIWMB.<sup>40</sup>

#### Local

#### County of San Mateo General Plan

#### 13.10 Long-Term Landfill Disposal Capability

• Provide long-term landfill disposal capability for non-renewable wastes and residues from resource recovery operations.

#### 13.23 Promoting Curbside Recycling

<sup>&</sup>lt;sup>39</sup> California Integrated Waste Management Board, Jurisdictional Profile for Unincorporated San Mateo County. Accessed by CAJA Staff at http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=U&JURID=455&JUR=San+Mateo%2DUnincor porated on November 13, 2008.

<sup>&</sup>lt;sup>40</sup> County of San Mateo, James Porter, Director, Department of Public Works, Response to Service Letter, September 17, 2008.

• Promote the establishment of curbside recycling programs as a means to increase recycling.

#### 13.25 Locating Rubbish Collection Points

• Consider permitting the placement of receptacles for recyclables within appropriate residential and commercial areas.

#### County of San Mateo Green Building Ordinance

On February 26th 2008, the San Mateo County Board of Supervisors approved a Green Building Ordinance that will apply to building projects within the unincorporated areas of San Mateo County. On October 7, 2008 the Board of Supervisors adopted an ordinance amending the regulations clarifying standards and requirements to improve the effectiveness of the Green Building Program. The purpose of the Green Building Program is to enhance public health and welfare by encouraging green building measures in the design, building and maintenance of buildings. Green Building Practices are intended to achieve the following goals:

- To encourage the conservation of natural resources;
- To reduce waste in landfills generated by construction projects;
- To increase energy efficiency and lower energy usage;
- To reduce operating and maintenance costs for buildings; and
- To promote a healthier indoor environment.

#### County of San Mateo Ordinance No. 04099

On February 26, 2002, the San Mateo County Board of Supervisors adopted Ordinance No. 04099 that will apply to construction and demolition projects within the unincorporated areas of San Mateo County.<sup>41</sup> The purpose of this ordinance is to promote the reduction of solid waste and reduce the stream of solid waste going to landfills. A Waste Management Plan (WMP) is necessary to demonstrate compliance with County Ordinance 04099 that requires covered projects to salvage, reuse or recycle 100 percent of inert solids (asphalt, brick, concrete, dirt, fines, rock, sand, soil, and stone) and at least 50 percent of the remaining construction and demolition debris generated by the project.<sup>42</sup> A WMP is required if your project consists of one or more of the following:

<sup>&</sup>lt;sup>41</sup> San Mateo County, RecycleWorks, County of San Mateo Ordinance No. 04099. Accessed by CAJA Staff at http://www.recycleworks.org/con\_dem/or\_04099.html on November 24, 2008.

<sup>&</sup>lt;sup>42</sup> San Mateo County, RecycleWorks, How to Prepare a Waste Management Plan (WMP). Accessed by CAJA Staff at http://www.recycleworks.org/con\_dem/ordinance\_condem.html on November 24, 2008.

- 1. Demolition work only, where the cost of the work exceeds \$5,000 as determined by the Building Official.
- 2. The renovation, remodel or addition to an existing structure or the construction of a new structure where the cost of the work exceeds \$250,000 as determined by the Building Official.
- 3. Any new structure that is equal to or greater than 2,000 square feet.

#### **ENVIRONMENTAL IMPACTS**

#### Thresholds of Significance

Based on Appendix G to the CEQA Guidelines, the proposed project would have a significant environmental impact in regards to solid waste services if it would:

- f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- g) Not comply with federal, state, and local statutes and regulations related to solid waste.

#### **Proposed Project**

The solid waste generated during the construction and operational phases of the proposed project would be accommodated by the South Bayside Integrated Facility. Ox Mountain does not recycle construction and demolition materials; however, it would be utilized for operations phases. The County Ordinance No. 04099 requires that 100 percent of inert solids (asphalt, brick, concrete, dirt, fines, rock, sand, and stone) be salvaged, reused, or recycled. In addition, 50 percent of all other construction and demolition debris in a project must also be salvaged, reused, or recycled. Curbside recycling of cans, bottles, paper cardboard and yard waste would also be made available.

#### **Project Impacts and Mitigation Measures**

#### Impact UTIL-3 Be Served by a Landfill with Insufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs

Implementation of the proposed project would result in an increase in solid waste generation during both the short-term construction phase and long-term operational phase; however, the maximum amount of materials would be diverted in all phases per San Mateo's Ordinance No. 04099.

#### Construction Phase

The construction phase of the proposed project would generate debris in the form of wood, scrap metal, asphalt/concrete, green waste, etc. Much of this solid waste generated during the construction phase can be recycled. San Mateo County requires (County Ordinance Code 04099) all major construction projects to submit a Waste Management Plan to the County. This plan requires identifying that 100 percent of

inert solids (e.g., asphalt, brick, concrete, dirt, fines, rock, sand, soil and stone) must be recycled or salvaged, and 50 percent of non-inert debris (e.g., wood, metal, roofing, etc.) must be recycled or salvaged.

Materials can either be separated on-site and hauled as clean loads to appropriate recycling facilities or combined and taken to an approved recycling facility.<sup>43</sup> The plan must also describe how the debris would be transported from the site. County of San Mateo Ordinance No. 04099 makes approval and acceptance of the Waste Management Plan a requirement for issuance of a building permit. Recycling facilities on the County's list of approved facilities are expected to have sufficient capacity to process all waste generated by construction of the proposed project. Provided the project conforms to County of San Mateo Ordinance No. 04099, impacts associated with solid waste generated during construction would be *less than significant* and no mitigation measures are required.

#### **Operational Phase**

The site is currently undeveloped and does not produce any solid waste. Implementation of the proposed project would increase the generation of solid waste in the project area. The project would generate solid waste for 25 single-family homes in an area served by the South Bayside Integrated Facility and Ox Mountain Landfill. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>44</sup> As such, the generation of solid waste at the proposed project site would increase.

The unincorporated areas of the County of San Mateo have a resident daily disposal rate of one pound per person per day.<sup>45</sup> Based on this generation rate of one pound per person per day multiplied by the 69 persons generated by the proposed project, the proposed project is anticipated to demand approximately 69 pounds of solid waste per day, or approximately 0.0345 TPD.

As mentioned above, the project area is served by the South Bayside Integrated Facility and Ox Mountain Landfill. Currently, the South Bayside Integrated Facility takes in approximately 4,000 TPD and has capacity to take in 5,830 TPD. This translates into a remaining capacity of 1,830 TPD that can be taken in by the South Bayside Integrated Facility. Currently, the Ox Mountain Landfill takes in approximately 3,250 TPD and has capacity to take in 3,598 TPD. This translates into a remaining capacity of 348 TPD that can be taken in by the Ox Mountain Landfill.

<sup>&</sup>lt;sup>43</sup> A searchable database of where to recycle certain items is provided by RecycleWorks, a program of San Mateo County, and is available at: http://www.recycleworks.org/cgi-bin/bin/user/searchdatabases.pl.

 <sup>&</sup>lt;sup>44</sup> 2.74 persons per household x 25 proposed units = 68.5 or 69 persons {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4}

<sup>&</sup>lt;sup>45</sup> Generation Rate = 69 persons x one pound per person per day = 69 pounds per day. (Source: California Integrated Waste Management Board. Jurisdictional Profile for Unincorporated San Mateo County. Accessed by CAJA Staff at http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=U&JURID=455&JUR=San+Mateo%2DUnincor porated on November 13, 2008.

With an anticipated average daily solid waste generation of approximately 0.0345 TPD, the proposed project would represent approximately 0.002 percent<sup>46</sup> of the remaining capacity that can be taken in daily by the South Bayside Integrated Facility and approximately 0.01 percent<sup>47</sup> of the remaining capacity that can be taken in daily by the Ox Mountain Landfill. As stated above, while the Ox Mountain landfill is currently in excess of its total permitted capacity, it continues to accept waste as the landfill gradually settles and new space becomes available. Both the South Bayside Integrated Facility and Ox Mountain Landfill have sufficient capacity to meet the solid waste service demands of the proposed project. The proposed project would comply with all applicable County policies and ordinances (e.g., Green Building Ordinance). Provided the project provides adequate space on each parcel for recycling,<sup>48</sup> impacts associated with solid waste generated during operation would be *less than significant* and no mitigation measures are required.

Although impacts were found to be less than significant, the following recommended mitigation measure would further reduce any adverse solid waste impacts.

#### Mitigation Measure UTIL-3

The applicant shall prepare and submit a facility recycling program for the collection and loading of recyclable materials prepared in response to the California Solid Waste Reuse and Recycling Access Act of 1991 as described by the CIWMB, Model Ordinance, Relating to Areas for Collecting and Loading Recyclable Materials in Development Projects, March 31, 1993. Adequate space or enclosures for recycling bins shall be provided at appropriate locations to promote recycling of paper, metal, glass, and other recyclable material.

#### Impact UTIL-4 Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste

The California Integrated Waste Management Act of 1989 was enacted to reduce, recycle, and reuse solid waste generated in the State to the maximum extent feasible and requires city and county jurisdictions to identify an implementation schedule to divert 50 percent of the total waste stream from landfill disposal by the year 2000. As discussed above, unincorporated areas in the County are currently diverting 64 percent of the waste stream to the landfill. The proposed project would comply with the California Integrated Waste Management Act, as well as the other regulations described in the Regulatory Setting section. Therefore, impacts associated compliance with statutes and regulations related to solid waste would be *less than significant* and no mitigation measures are required.

<sup>&</sup>lt;sup>46</sup> Percentage calculated using the proposed project's daily generation rate (0.0345) ÷ South Bayside Integrated Facility capacity (1,830 TPD).

<sup>&</sup>lt;sup>47</sup> Percentage calculated using the proposed project's daily generation rate (0.0345) ÷ Ox Mountain Landfill capacity (348 TPD).

<sup>&</sup>lt;sup>48</sup> County of San Mateo, James Porter, Director, Department of Public Works, Response to Service Letter, September 17, 2008.

#### **CUMULATIVE IMPACTS**

Implementation of the project in combination with the 22 related projects (see Table III-1, Related Projects) would further increase the generation of solid waste. Only seven of the 22 related projects are located outside of the City of San Mateo and within the County of San Mateo and would therefore be subject to the provisions of County Ordinance Code 04099, requiring creation and implementation of a Waste Management Plan as a condition for issuance of a building permit. Only two of these County projects (Project Nos. 2 and 3) would create long-term waste generation due to the nature of their land uses. As shown in Table IV.J-16 below, the proposed project and related projects would generate approximately 10,438 pounds of solid waste per day, or approximately 5.2 TPD

Related Project No.	Land Use	Size (units or (square feet)	Average Daily Generation Rate	Total Average (pounds/day)
1	Water Supply Pipeline Improvement	NA	NA	NA
2	Facilities Master Plan	Campus- Wide	NA	NA
3	Residential Development	99 acres 11 du	1 pound/person/day	31
	Bridge Demolition & Reconstruction	Entire bridge	NA	NA
4	Dam Reconstruction (located beneath the abovementioned bridge)	Existing dam	NA	NA
5	Water Supply Pipeline Improvement	Pipeline segment	NA	NA
6	Construction of tunnel riser, vault, piping and related mechanical equipment	Tunnel associated improvements	NA	NA
7	Construction of major dam improvements: outlet structures, discharge culverts, pump station, pipelines	Associated dam improvements	NA	NA
8	Residential Subdivision	34 du 5.5 acres	1 pound/person/day	94
9	Mixed Use Residential Development Office Development Commercial Development Townhouse and Condominium Development Residential Development	392 du 750,000 sf 93,000 sf 330 du 344 du	1 pound/person/day 6 lbs/1,000 sf/day 5 lbs/1,000 sf/day 4 lbs/du/day 1 pound/person/day	1,075 4,500 480 1,320 943
10	Apartment Additions	30 du	4 lbs/du/day	120
11	Townhouse Development	6.78 acres 8 du	4 lbs/du/day	32
12	Senior Housing Facility	135 du	4 lbs/du/day <sup>1</sup>	540

# Table IV.J-16 Estimated Average Daily Cumulative Solid Waste Generation for Proposed Project and Related Projects

Related Project No.	Land Use	Size (units or (square feet)	Average Daily Generation Rate	Total Average (pounds/day)
13	<i>Mixed Use</i> Residential Development	12 acres	NA	NA
15	Commercial Development	12 acres	INA	NA
14	Condominium Development	76 du	4 lbs/du/day	304
15	Townhouse Development	10 du	4 lbs/du/day	40
16	Police Station	45,000 sf	6 lbs/1,000 sf/day	270
17	Condominium Development	34 du	4 lbs/du/day	136
	Mixed Use			
18	Office Development	23,462 sf	6 lbs/1,000 sf/day	141
	Commercial Development	11,426 sf	5 lbs/1,000 sf/day	57
	Mixed Use			
19	Residential Development	68 du	1 pound/person/day	187
1)	(Affordable Housing)			
	Commercial Development	2,917 sf	5 lbs/1,000 sf/day	15
	Mixed Use			
20	Condominium Development	10 du	4 lbs/du/day	40
	Commercial Development	4,000 sf	5 lbs/1,000 sf/day	20
21	Townhouse Development	6 du	4 lbs/du/day	24
22	Office Building Renovations	22 acres	NA	NA
		F	Related Projects Total	10,369
			Net Project Total	69
	Cumulative Net Total (Relate	ed Projects Tota	l + Net Project Total)	10,438

## Table IV.J-16 Estimated Average Daily Cumulative Solid Waste Generation for Proposed Project and Related Projects

This presents a conservative generation rate because senior housing is likely to generate less solid waste than a standard condominium or apartment unit.

Source: All Generation Rates, except those for Residential Development, are from the City of Los Angeles Bureau of Sanitation, Solid Waste Generation, 1981. A different method was used to calculate solid waste generated by related projects involving Residential Development. The persons that would be generated by these related projects was calculated as follows: 2.74 persons per household x the number of proposed units {2.74 persons per household based on San Mateo County Census 2000; Census 2000 SF1, SF3, DP1-DP4]. Similar to the proposed project, a generation rate of one pound per person was used {based on California Integrated Waste Management Board. Jurisdictional Profile for Unincorporated Mateo County. Accessed CAJA San by Staff at http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=U&JURID=455&JUR=San+Mateo%2DUnincorporated on November 13, 2008. Based on the generation rate of one pound per person per day multiplied by the number of persons generated by the related project, the number of pounds per day for each related project involving Residential Development was calculated.

As noted above, there is a remaining capacity of 1,830 TPD that can be taken in by the South Bayside Integrated Facility and a remaining capacity of 348 TPD that can be taken in by the Ox Mountain Landfill. The proposed project and related projects are anticipated to generate approximately 5.2 TPD of

solid waste, which would represent approximately 0.3 percent<sup>49</sup> of the remaining capacity that can be taken in daily by the South Bayside Integrated Facility and approximately 1.5 percent<sup>50</sup> of the remaining capacity that can be taken in daily by the Ox Mountain Landfill.

In addition, it is possible that some of the related projects consist of redevelopment that would result in the elimination of existing solid waste patterns at these sites. Thus, the cumulative net total amount of solid waste anticipated by the proposed project and related projects, shown in Table IV.J-16, could be overstated.

Future development projects within the County would be subject to the provisions of County Ordinance Code 04099. County-wide recycling and diversion efforts would also be expected to partially offset the incremental cumulative solid waste generation as much as is feasible. Cumulative increases in solid waste would be within the excess capacity currently available and projected to be available at the South Bayside Integrated Facility and Ox Mountain Landfill. Therefore, cumulative impacts associated with solid waste would be *less than significant* and no mitigation measures are required.

#### LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to solid waste services created by the proposed project would be less than significant.

<sup>&</sup>lt;sup>49</sup> Percentage calculated using the cumulative net total's daily generation rate (5.2 TPD) ÷ South Bayside Integrated Facility capacity (1,830 TPD).

<sup>&</sup>lt;sup>50</sup> Percentage calculated using the cumulative net total's daily generation rate (5.2 TPD) ÷ Ox Mountain Landfill capacity (348 TPD).

### V. GENERAL IMPACT CATEGORIES

#### A. SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts which cannot be avoided. Specifically, Section 15126.2(b) states:

Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reason why the project is being proposed, notwithstanding their effect, should be described.

Based on the analysis contained in this Draft EIR (DEIR), implementation of the proposed Ascension Heights Subdivision project ("proposed project") would result in significant and unavoidable environmental impacts relative to short-term air quality and noise impacts during the construction phase (specifically grading).

#### **B.** GROWTH INDUCING IMPACTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines requires a discussion of the ways in which a proposed action could be growth inducing. This includes ways in which the project would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Section 15126.2(d) of the CEQA Guidelines reads as follows:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The project applicant proposes to subdivide six legal parcels (13.25 acres total), which make up the project site, into 25 single-family lots. Lot sizes would range from 10,120 square feet to 17,590 square feet (see Figure III-12). Each lot would be developed with one single-family house. Approximately 98,102 square feet (approximately 17 percent of the total project site) of on-site private roadways would be developed, including the main access road (Lot "C"), the Emergency Vehicle Access (EVA) road and the new water tank access road. In addition to the proposed 25 single-family homes and road infrastructure, the proposed project open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation area, trails and a tot lot. The tot lot and trails would be available for use by the general public. Additionally, new utility lines (i.e., associated with the water

supply, wastewater and storm drain systems) would be installed to accommodate the proposed project. All appropriate utility-related easements would be provided within the proposed on-site development. Further, 2,821 square feet east of the water tank and cell site would be dedicated to California Water Service Company (Cal Water; owner of the water tank). The water tank and cell site is not part of the proposed project.

As discussed in subsection V.C below, implementation of the proposed project would increase the permanent residential population on the project site by approximately 69 persons. This new residential population would likely patronize local businesses and services in the area, fostering economic growth. Although the project would provide short-term construction-related employment opportunities, which would likely be filled from the local employee base, no permanent jobs would be created by the proposed project. Therefore, the project would not result in long-term employment growth in the area.

Public services (i.e., police, fire protection, schools & libraries, parks and recreation) to a portion of the project site and surrounding area are currently provided by the San Mateo County Sheriff's Department, San Mateo City Fire Department, County of San Mateo Fire Department/California Department of Forestry and Fire Protection (CALFIRE), San Mateo-Foster City School District (SMFCSD), the San Mateo Union High School District (SMUHSD), the San Mateo County Library (SMCL), and the San Mateo Public Library (SMPL), San Mateo County Parks and Recreation Division, Highlands Recreation District, and the County of San Mateo Department of Public Works, respectively. As discussed in Section III (Project Description), Parcels APN: 041-111-280 and 041-111-320 associated with the proposed project are not within the boundaries of the San Mateo County Service Areas (CSA), specifically CSA #1 (refer to Figure III-11). A condition of approval of the project would include annexation to these Districts. Annexation would require: (1) application by property owner to the San Mateo LAFCO, including a map and legal description and LAFCO and State Board of Equalization Fees; (2) adoption of a property tax exchange resolution by the Board regarding amount of property tax to be transferred between the County General Property Tax and County governed districts; (3) special parcel tax for CSA #1 for enhanced police and fire; and (4) approval by LAFCO and recordation of certificate of completion. The residential population generated by the proposed project would result in an incremental increased demand for the public services provided by these agencies. However, as discussed in Section IV.H (Public Services), the project's demand for public services could be accommodated by existing services and would not create a need for new or altered governmental facilities.

Further, the proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. The tot lot and trails would be available for use by the general public. The 0.45-acre (19,602-square foot (sf)) proposed undisturbed and protected area would be included within the southwest corner of the project site. The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. Trails 1 and 2 would consist of 5-foot diameter pathways that would transverse the northern portion of the site and the proposed common area/conservation area, respectively. The above recreation and open space amenities would reduce the project's demand for

parks and recreation services. The tot lot would consist of approximately 8,365 square feet and would be located near the project's main site entrance on the northeastern side of the new private street adjacent to Lot 1. Therefore, the project would not require the construction of new facilities that could result in significant environmental impacts.

The project site is located in an area that is currently developed with single-family residential land uses, which are served by existing utility infrastructure and service systems. Wastewater service and treatment to the project area is currently provided by the Crystal Springs County Sanitation District (CSCSD) and the San Mateo Wastewater Treatment Plant (SMWTP), respectively; water service to the project area is provided by Cal Water; and solid waste disposal services are accommodated by the South Bayside Integrated Facility and the Ox Mountain Sanitary Landfill. Implementation of the proposed project would increase demand for the services provided by these agencies. Although the project site, this infrastructure would connect to the existing infrastructure that is located in roadways adjacent to the project site. The new utility infrastructure associated with the project would serve the needs of the project only and would not accommodate additional development. Therefore, the project would not require the construction of new utility infrastructure that could result in significant environmental impacts.

Overall, the proposed project would not result in significant growth-inducing impacts.

#### C. IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

This subsection addresses potential environmental resources for which the proposed project would not result in significant effects. California Public Resources Code (PRC) Section 21003(f) states "...it is the policy of the State that all persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the CEQA Guidelines Section 15126.2(a), "an EIR shall focus on the significant effects on the environment." Section 15128 of the CEQA Guidelines states:

## An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.

An Initial Study was prepared for the proposed project on August 28, 2002 and is included in Appendix A of this DEIR. Based on the analysis contained in the Initial Study and analysis done for the preparation of various DEIR sections, the Lead Agency has determined that implementation of the proposed project would not result in significant environmental impacts to the environmental impact topics listed below and therefore, are not discussed in detail in Section IV (Environmental Impact Analysis) of this DEIR. (Some potential impacts are discussed in the various sections of Section IV and were determined to be less than significant; those issues are not discussed below.)

#### 1. AESTHETICS

The proposed project would not have a substantial adverse effect on a scenic vista. The San Mateo County General Plan does not define or include a description of scenic vistas. In general, a "scenic vista" is typically considered an aesthetically-pleasing view, as seen through an opening or passage. The General Plan does not include a description or list of vantage points within the County from which vistas are considered "scenic," nor does the General Plan specifically identify the scenic vistas that are available from the County. The project site is not visible through an opening or passageway; hence, there are no scenic vistas within the project area.

#### 2. AGRICULTURE RESOURCES

The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. The project site is largely undeveloped and is surrounded by single-family residential development. Additionally, the project site does not include any State-designated agricultural lands. The Extent of Important Farmland Map Coverage maintained by the Division of Land Protection indicates that the project site is not designated as "Prime Farmland", "Unique Farmland", or "Farmland of Statewide Importance", but is rather designated as "Urban and Built-up Land" and/or "Other Land."<sup>1</sup> Therefore, the proposed project would have no impact related to the conversion of prime farmland, unique farmland or farmland of statewide importance to a non-agricultural use, and no further analysis of this issue is warranted.

The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act Contract. A significant impact may occur if a project were to result in the conversion of land zoned for agricultural use or under a Williamson Act Contract from agricultural use to another non-agricultural use. The project site consists of six parcels and is zoned R-1/S-8 (single-family residential/7,500 square foot minimum lot size). The project site is not currently zoned for agricultural use and is not subject to a Williamson Act Contract. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act Contract and no impact would occur. As such, no further analysis of this issue is warranted.

The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use. A significant impact may occur if a project results in the conversion of farmland to another, non-agricultural use. As discussed above, the project site is located in a developed area and neither the project site nor the surrounding properties are zoned or utilized for agricultural activities. Therefore, implementation of the proposed

<sup>&</sup>lt;sup>1</sup> California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program, Important Farmland in California, 2004. Accessed by CAJA Staff at http://www.conservation.ca.gov/dlrp/fmmp/products/Pages/FMMP-MapProducts.aspx on June 16, 2008.

project would not result in an impact associated with the conversion of farmland to a non-agricultural use. Therefore, no further analysis of this issue is warranted.

#### 3. BIOLOGICAL RESOURCES

The proposed project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the federal Clean Water Act (CWA; including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Per Section IV.C (Biological Resources), no Waters of the U.S. or Waters of the State were observed on the project site during site surveys, including wetlands, streams, ponds, or lakes. Furthermore, such jurisdictional features are not expected to have occurred on the site historically. The project site is situated on a steeply sloped hill top along a ridge that separates the closest jurisdictional water course, Polhemus Creek, from creeks and drainages that drain towards the San Francisco Bay. The project site supports entirely upland (non-wetland) vegetation consisting of coast live oaks, coniferous trees, annual grassland, and scattered coyote brush, with well drained and non-wetland soils; the site lacks drainage-like or depressional topography. Further, the site is too steep to support any intermittent or perennial water courses, nor areas that could hold water for a sufficient length of time to support wetland plants or develop hydric soil conditions. During a May 2003 site field survey, the only surface water found was located in tire ruts along a dirt road downslope from an erosional feature that contained denuded soils and upland grassland plant species, located at the east end of the project site. No surface water, evidence of recent ponding or areas dominated by wetland vegetation were observed on the site during the field reconnaissance conducted on June 27, 2008. Thus, the project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. No further discussion of this issue is required.

The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Per Section IV.C (Biological Resources), due to considerable residential and commercial development within and surrounding the project site, including a network of busy roadways surrounding the site, the project site does not provide viable linkages or migration corridors between habitat areas. To the extent that small and fragmented patches of remnant habitats occur within the project site, they have become virtual islands of habitat and provide limited opportunity for wildlife movement and exchange of genetic material. Wildlife movement between the site and large expanses of undeveloped public land including the Crystal Springs Reservoir area, located two miles to the west, is likely to be very restricted (except for bird species) due to the lack of physical linkages and existing barriers, such as Interstate 280 (I-280), located 0.75 miles to the west of the project site. Migration through the site may occasionally occur for only the most mobile terrestrial species, such as mule deer as "accidental" incidents, possibly facilitated by disturbances causing an individual to panic and flee the site, and likely only at night when the considerable barriers of traffic and human disturbance activities in the surrounding urban environment are at their lowest levels. Such movement is sporadic and very unlikely to result in a significant exchange in genetic material or linkage of the site to core habitat areas. Further, no available waters or wetlands are located on-site. Thus, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No further discussion of this issue is required.

The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan? The project site is not subject to any conservation plans. Thus, the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. No further discussion of this issue is required.

#### 4. CULTURAL RESOURCES

The proposed project would not cause a significant adverse change in the significance of a historical resource as defined in Section 15064.5. As noted in the County of San Mateo General Plan, "from the times of the earliest Indian inhabitants to today's era of technology development, San Mateo County has had a legacy rich in historical, archaeological and architectural resources."<sup>2</sup> The project site is currently undeveloped, sans a potable water tank (owned by the Cal Water) and a cell transmitter site (APN: 041-111-020), enclosed by fencing and surrounded by Monterey pine trees. This site is served by a small access road that connects to Bel Aire Road, which also serves as the only current access point to the project site. This parcel is not a part of the proposed project. Under the proposed project, 2,821 square feet east of the tank and cell site would be dedicated to Cal Water. Construction of the proposed project would require the removal of various on-site trees and the demolition of the existing access road for the water tank site. A new access road to the water tank site would be developed as part of the project and would connect off the proposed new main access road for the project. According to a Cultural Records search performed by Sonoma State University's Northwest Information Center (NWIC)<sup>3</sup>, no state and/or federal inventories list historic properties within the project site. As such, historical impacts would be less than significant and no further analysis is required.

The proposed project would not cause a significant adverse change in the significance of an archaeological resource pursuant to Section 15064.5. According to a Cultural Records search performed by Sonoma State University's NWIC<sup>4</sup>, the proposed project area contains no recorded Native American or historic-period archaeological resources. In addition, NWIC has no record of an archaeological study of the project area. The Cultural Records search discovered that based on an evaluation of the

<sup>4</sup> Northwest Information Center, 2008, Ibid.

<sup>&</sup>lt;sup>2</sup> County of San Mateo, Planning & Building Department, County of San Mateo General Plan (November 1986), Chapter 5: Historical & Archaeological Resources, Historical and Archaeological Resources Background. Accessed by CAJA Staff at http://www.sforoundtable.org/P&B/pb\_general\_plan.html on June 16, 2008.

<sup>&</sup>lt;sup>3</sup> Northwest Information Center, Sonoma State University, File#07-1871, July 16, 2008.

environmental setting and features associated with known sites, Native American cultural resources in this part of San Mateo County have been found on ridges or hilltops, on mid-slope benches, near intermittent and perennial watercourses and near productive ecotones. The proposed project area contains hilltop terraces near the head of drainages. Given the similarity of these environmental factors, there is a moderate likelihood that unrecorded Native American cultural resources exist in the project area. Review of historical literature and maps gave no indication of historic-period archaeological resources within the project area. With this in mind, there is a low possibility of identifying historic-period archaeological resources within the project site.

Procedures of conduct following the discovery of archaeological resources have been mandated by PRC Section 5097.5 and 21082 and by CEQA guidelines Section 15064.5(f). According to the provisions in CEQA, in the event that subsurface resources are encountered during the course of grading and/or excavation, all development shall temporarily cease in these areas until the Planning and Building Department of the County of San Mateo is contacted and agrees upon a qualified archaeologist to be brought onto the project site to properly assess the resources and make recommendations for their disposition. Construction activities could continue in other areas. If any find were determined to be significant by the archeologist. The County and the archeologist shall meet to determine the appropriate course of action. All cultural materials recovered from the project site would be subject to scientific analysis, professional museum curation and a report prepared according to current professional standards. Therefore, archaeological resources impacts would be less than significant and no further discussion of this issue is required.

The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. No paleontological resources are known to exist on the project site. Per the NIWC<sup>5</sup>, the project site is not located in an area designated by the County of San Mateo as being in a paleontological site or survey area. However, it is possible that during excavations anticipated for the project resources could be encountered. Procedures of conduct following the discovery of paleontological resources have been mandated by PRC Section 5097.5 & 21082 and by CEQA Guidelines Section 15064(f). According to the provisions in CEQA, a qualified paleontologist as determined by the Planning and Building Department of the County of San Mateo shall monitor future ground-disturbing activities in native soil. In the event that paleontologist resources are discovered during grading and/or excavation, the monitor shall be empowered to temporarily halt or divert construction in the immediate vicinity of the discovery while it is evaluated for significance. Construction activities could continue in other areas. If any find were determined to be significant by the paleontologist, the County and paleontologist shall meet to determine the appropriate course of action. All paleontological materials recovered for the site would be subject to scientific analysis, professional museum curation and a report prepared according to current professional standards. Therefore, paleontological resources impacts would be less than significant and no further discussion of this issue is required.

<sup>&</sup>lt;sup>5</sup> Northwest Information Center, 2008, Ibid.

The proposed project would not disturb any human remains, including those interred outside of formal cemeteries. No known human burials have been identified on the project site or within recorded resources located in the vicinity. However, it is possible that unknown human remains could occur on the project site, and if proper care is not taken during project construction, damage to or destruction of these unknown remains could occur. Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code (HSC) Section 7050.5, PRC Section 5097.98 and the California Code of Regulations (CCR) Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The San Mateo County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the most likely descendent (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, re-intern the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC. The project is required to comply with these procedures of conduct following the discovery of human remains. Therefore, human remains impacts would be less than significant and no further discussion of this issue is required.

#### 5. GEOLOGY/SOILS

The proposed project would not expose people or structures to potential, substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, as delineated on the most recent Alguist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a know fault. Per Section IV.D (Geology & Soils), geotechnical site analysis revealed no evidence of surface features that are indicative of active faulting. Additionally, this analysis determined that the site does not lie within a Alquist-Priolo Earthquake Fault Zone and that the nearest mapped active fault to the site, the San Andreas Fault, is located approximately 1.6 kilometers to the southwest. Further, as discussed in the Treadwell & Rollo (November 2003) report (refer to Appendix F of the DEIR), based on a review of the Natural Hazards section of the General Plan, which states that with the exception of some right-lateral displacement on the trace of the San Andreas fault in 1906, surface rupture has not historically been a frequent occurrence in the county. Based on the sites location outside of an Earthquake Fault Zone and the lack of evidence for active faulting at the site, the fault rupture potential at the site is very low. Thus, the project would not expose people or structures to potential, substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault on-site, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area. Therefore, impacts would be less than significant and no further discussion of this issue is required.

The proposed project would not expose people or structures to potential, substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Per Section IV.D (Geology/Soils), the Geotechnical Hazard Synthesis Map for San Mateo County (1976) includes the project site in a zone described as having "poor to good earthquake stability". The degree of stability presumably depends on the inherent strength of the bedrock materials, which consist of serpentinite and melange in the designated zone. It is expected that the earthquake stability of the project site would be in the upper end of the specified range based on the presence of relatively strong sandstone bedrock. A compilation of ground failure occurrences induced by earthquakes in the region between 1800 and 1970 included no instances of historical earthquake-induced ground failure at the project site (Youd and Hoose, 1978). Subsurface exploration by others shows that moderately hard to hard sandstone is present at depths less than 3 feet below the existing ground surface. Based on the shallow bedrock depths and presence of clay in the near-surface soil, the potential for liquefaction and cyclic densification at the project site is low. Therefore, the proposed project would not expose people or structures to potential, substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Thus, impacts would be less than significant and no further discussion of this issue is required.

The proposed project would not be located on expansive soil, as defined by the California Building Code, creating substantial risks to life or property. Per Section IV.D (Geology/Soils), expansive soils shrink or swell with changes in moisture content. Clay mineralogy, clay content, and porosity of the soil influence the change in volume. The shrinking and swelling caused by expansive clay-rich soil can result in damage to overlying structures. The National Resource Conservation Service (NRCS) Soil Survey describes soils in the site vicinity as loam, clay loam, and clay having a moderate to high shrink-swell potential. Project site soils encountered in geotechnical site studies contained more sand and silt than reported by the NRCS. Furthermore, during site analyses a sample of colluvium collected from a depth of one foot below the ground surface had a very low plasticity index of 4 and a low liquid limit of 23. These data indicate a low shrink-swell potential for near-surface soils, which are consistent with colluvium derived from Franciscan sandstone bedrock. Therefore, impacts would be less than significant and no further discussion of this issue is required.

The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. The proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Sewer service would be provided by the CSCSD (see Section IV.J, Utilities & Service Systems). Thus, the proposed project would not result in impacts associated with not having soils capable of supporting such wastewater disposal infrastructure. No further discussion of this issue is required.

#### 6. HAZARDS AND HAZARDOUS MATERIALS

The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The proposed project would not involve the routine transport, use or disposal of substantial quantities of hazardous materials. The proposed project would involve the development of residential and open space land uses and would only involve the use of

common household and maintenance solvents typically associated with such activities. As such, no impact would occur and no further discussion of this issue is required.

The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The project site is undeveloped, with the exception of an on-site access road associated with the on-site water tank and cell site (not part of the proposed project). This road would be demolished as part of the proposed project; however, the existing water tank parcel would remain in its current condition and would be separated from the proposed residential development. Additionally, under the proposed project, 2,821 square feet east of the tank and cell site would be dedicated to Cal Water and a new access road to the water tank site would be developed, which would connect off the proposed new main access road for the project. Besides the abovementioned site uses, the project site has never been developed and has remained vacant. The proposed project would not involve the routine transport, use or disposal of substantial quantities of hazardous materials. The proposed project would involve the use of common household and maintenance solvents typically associated with such activities. As such, no impact would occur and no further analysis of this issue is required.

The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school. A significant adverse impact may occur if a project site is located within 0.25 mile of an existing or proposed K-12 school site and is projected to release toxic emissions which pose a health hazard beyond regulatory thresholds. No existing or proposed K-12 schools are located within 0.25 miles of the project site, the nearest being approximately 0.50 miles to the west. The project site is located less than 0.25 miles from the College of San Mateo situated to the northeast. The proposed project would not involve the routine transport, use, disposal, or accidental release of substantial quantities of hazardous materials. The project would not involve the emissions of hazardous materials except temporarily during construction and grading activities, in which truck trips would use diesel fuels. This particular issue is addressed in the Section IV.B (Air Quality) of the DEIR. Therefore, the proposed project would not have the potential to emit substantial quantities of hazardous materials within 0.25 mile of an existing or proposed K-12 school. Thus, impacts would be less than significant and no further analysis of this issue is required.

The proposed project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment. California Government Code Section 65962.5 requires various state agencies to compile lists of hazardous waste disposal facilities, unauthorized releases from underground storage tanks, contaminated drinking water wells, and solid waste facilities from which there is known migration of hazardous waste. The information is filed with the Secretary for Environmental Protection on an annual basis minimally. The proposed project site is not included on the

list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.<sup>6</sup> Therefore, the project would not result in impacts related to being located on a site that is included on a list of hazardous materials sites. Thus, no further analysis of this issue is required.

The proposed project would not be located within an airport land use plan or within two miles of a public airport or public use airport and would not result in a safety hazard for people residing or working in the project area. The proposed project would also not be within the vicinity of a private airstrip. The project site is not within an airport land use plan, nor is it within 2 miles of a public or private airport. The closest airport is the San Carlos Airport, located approximately 5 miles to the east of the project site. Therefore, the proposed project would not expose persons to safety hazards associated with an airport. Thus, no impact would occur and no further analysis of this issue is required.

The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed project would not affect an emergency response plan or emergency evacuation plan. While the proposed project would introduce new development to the project site, such development would conform with all applicable local, County, regional, State, and federal regulations pertaining to emergency safety. Additionally, per Section III (Project Description), an EVA road would be developed on-site to ensure sufficient emergency response. Further, various mitigation measures have been included in the DEIR during temporary construction impacts (i.e., associated with staging, traffic, haul routes, etc.) to ensure proper safety protocol is followed at all times during the initial development of the proposed project. As such, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts would be less than significant and no further analysis of this issue is required.

#### 7. HYDROLOGY & WATER QUALITY

The proposed project would not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, nor would the proposed project redirect or impede flood flows. According to the most recent Federal Emergency Management Agency (FEMA) Digital Q3 Flood Data Map, the project site is located outside the 100- and 500-year floodplain.<sup>7</sup> Thus, the project would not result in placement of housing within a 100- or 500-year flood hazard area or placement of structures within a 100-or 500-year flood hazard area that would impede or redirect flood flows. Thus, impacts would be less than significant and no further analysis of this issue is required.

<sup>&</sup>lt;sup>6</sup> Department of Toxic Substances Control, EnviroStor Database, Cleanup Sites and Hazardous Waste Permitted Facilities. Accessed by CAJA Staff at http://www.envirostor.dtsc.ca.gov/public/ on July 10, 2008.

<sup>&</sup>lt;sup>7</sup> ESI and FEMA, Hazard Information and Awareness. Accessed by CAJA Staff at http://mapserver2.esri.com/cgi-bin/hazard.adol?s=0&c=-122.337673,37.537313&p=1&cd=z&d=0 on October 27, 2008.

The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Per Section IV.E (Hydrology & Water Quality), Crystal Springs Reservoir Dam is located approximately one mile to the northwest of the project site. Although dam failure is unlikely due to current State regulations for design, maintenance, and monitoring of dams, low-lying areas may be exposed to the hazard of inundation from failure of local dams such as Crystal Springs Reservoir. Per the San Mateo County Dam Failure Inundation Areas Map, the project area is located just outside an inundation area; however, nearby roadways such Crystal Springs Road and Polhemus Road are at risk. Due to its topography, the project site is not located in an area at substantial risk of inundation; therefore, the proposed project would not expose people or structures to significant risk of loss, injury or death as a result. Therefore, no impact would occur and no further analysis of this issue is required.

The proposed project would not be located in an area at risk of inundation by seiche, tsunami, or mudflow. The project site is not located adjacent to any substantially large bodies of water (i.e., the ocean) that could sustain a seiche, which could affect the project site. The project site is approximately 8 miles from the Pacific Ocean, and separated by mountain ridges. The project site is located in a relatively hilly area, approximately 3 miles away from the nearest mountain range. Considering the project site's inland location, the project would not be subject to inundation by tsunamis. The project site is located in a highly developed area that is not subject to mudflows. Therefore, no impact would occur from inundation by seiche, tsunami or mudflow and no further analysis of this issue is required.

#### 8. LAND USE & PLANNING

The proposed project would not conflict with any Habitat Conservation Plan or Natural Community Conservation Plan. Neither the project site nor the surrounding area is subject to a Habitat Conservation Plan or Natural Community Conservation Plan. As such, the project would not result in conflicts with either of these types of plans. Thus, no further analysis of these issues is necessary.

#### 9. MINERAL RESOURCES

The proposed project would not 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. A significant impact may occur if a project is located in an area used or available for extraction of a regionally-important mineral resource and the project converted an existing or potential future regionally-important mineral extraction use to another use or if the project affected access to a site used or potentially available for regionally-important mineral resource extraction. According to the County General Plan, the project site is not located in an area used or available for extraction of a regionally-important mineral resource. As such, the proposed project would not convert an existing or potential future regionally-important mineral extraction use to another use. Further, the proposed project would not affect access to a site used or potentially available for regionally-important mineral resource extraction. Therefore, the proposed project would not 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. Thus, no impact would occur and no further analysis of this issue is necessary.

The proposed project would not 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. A significant impact would occur if a project is located in an area used or available for extraction of a locally-important mineral resource extraction and the project converted an existing or potential future locally-important mineral extraction use to another use or if the project affected access to a site used or potentially available for locally-important mineral resource extraction. According to the County General Plan, the project site is not within the designated boundaries of any general, specific or land use plan designated for the extraction of any locally-significant mineral resources. Therefore, no impact to the loss of availability to locally-important mineral resources would occur and no further analysis of this issue is necessary.

### 10. NOISE

The proposed project would not cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Construction of the proposed project would include the use of typical construction equipment such as jackhammers, pneumatic tools, saws, and hammers, all of which would generate some groundborne vibration and groundborne noise. No pile driving or blasting activities would be utilized for the project, which are known to generate substantial vibration. Based on a review of the proposed site plan and vicinity maps (refer to Figures III-3, III-4, III-12 and III-18), site grading and home construction on the northeast portion of the site may take place as close as 50 feet from the rear of the existing residences fronting on Parrott Drive. Other area residences will be further removed from the construction activities at 200 feet or more from the proposed home pads. The groundborne vibration levels produced by earth moving and grading equipment at 25 feet (0.035 to 0.210 in/sec PPV<sup>8</sup>) are below vibration impact thresholds for residential structures (0.5 in/sec PPV<sup>9</sup>), and thus groundborne vibration from site work would not be expected to impact the adjacent residences. Therefore, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels. No further analysis of this issue is required.

The proposed project is not located within an airport land use plan or private airstrip where people residing or working in the proposed project would be exposed to excessive noise levels. A significant project-related impact may occur if a project were placed within a public airport land use plan area, or within 2 miles of a public airport, and would introduce substantial new sources of noise or substantially add to existing sources of noise within or in the vicinity of the project site during construction of the project. The project site is not within an airport land use plan, nor is it within 2 miles of a public or private airport. The airport closest to the project site is the San Carlos Airport, located approximately 5 miles to the east of the project site. Therefore, the proposed project would not expose residents at the

<sup>&</sup>lt;sup>8</sup> *PPV* = *Peak Particle Velocity which is defined as the maximum instantaneous positive or negative peak of the vibration wave. The PPV is typically used to evaluate the potential for vibration induced building damage.* 

<sup>&</sup>lt;sup>9</sup> National Cooperative Highway Research Program, 1997.

project site to excessive noise levels associated with an airport. Thus, no further analysis of this issue is required.

# **11. POPULATION AND HOUSING**

The proposed project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). The proposed project includes the development of 25 residential homes, on-site roadways, open space and recreation uses and associated utilities infrastructure. This growth is consistent with the growth anticipated in the County General Plan. While the project does include the development of a new private main access road and utilities infrastructure, these improvements would only accommodate development on the project site. The proposed project would result in a total increase in permanent population of approximately 69 persons.<sup>10</sup> The project site is located within Census Tract 6068.00 (Census Tract), which is bounded by Polhemus Road to the west; Hillsborough zip code boundaries to the north; and the Arthur J. Younger Freeway (SR 92) to the east and south. This figure represents approximately 2.1 percent of the population anticipated in US Census Tract 6068.00 (population 3,241 persons in 2000) and approximately 0.010 percent of the County of San Mateo's anticipated population at 2015 (i.e., 772,300 persons). Anticipated proposed project build-out would be by the year 2013. Therefore, the proposed project would not induce substantial population growth in the area, either directly or indirectly and no further discussion of this issue is required.

The proposed project would not displace substantial numbers of existing housing or numbers or people, necessitating the construction of replacement housing elsewhere. A significant impact may occur if a project would result in displacement of existing housing units, necessitating construction of replacement housing elsewhere. There are no existing housing units on the project site. Therefore, the proposed project would not displace substantial numbers of existing housing. No impact would occur and no further discussion of this issue is required.

# **12. RECREATION**

The proposed project would not 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. A significant impact may occur if a project includes substantial employment of population growth, which could generate a demand for park or recreational facilities that exceed the capacity of existing parks or recreational and causes premature deterioration of the facilities. Maintenance of public parks and recreational facilities in San Mateo County is funded largely through the general funds, through the Quimby Act and other park fees. The proposed project would not place a substantial additional generation of the parks. As discussed in Section IV.H.4 (Recreation/Parks), the proposed project

<sup>&</sup>lt;sup>10</sup> Association of Bay Area Governments, Projections 2007, September 2007. 2.74 persons per household X 25 homes = 68.5 persons (69 persons).

includes on-site open space and recreation amenities such as: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot; thereby, offsetting the incremental rise in demand. As demand for park services by the proposed project is considered to be negligible, proposed project impacts on maintenance of those facilities would likewise have no significant impact and no further analysis of this issue is required.

The proposed project includes recreational facilities; however, the construction of which would not have an adverse physical effect on the environment. The proposed open space and recreation amenities would include: an undisturbed and protected area, common areas/conservation areas (Lot "A"), trails and a tot lot. The tot lot and trails would be available for use by the general public. The 0.45-acre (19,602-square foot (sf)) proposed undisturbed and protected area would be included within the southwest corner of the project site. The on-site common areas or conservation areas would be located within the southern and western portions of the project site. These Lot "A" areas would constitute approximately 4.12 acres (179,519 sf), which represents approximately 31 percent of the project site. Trails 1 and 2 would consist of 5-foot diameter pathways that would transverse the northern portion of the site and the proposed common area/conservation area, respectively. The above recreation and open space amenities would reduce the project's demand for parks and recreation services. The tot lot would consist of approximately 8,365 square feet and would be located near the project's main site entrance on the northeastern side of the new private street adjacent to Lot 1. Although open space and recreation amenities are proposed as part of the project, the proposed project itself is considered a residential project. The associated environmental impacts are analyzed in the individual subsections of the DEIR (Sections IV.A through IV.J). As outlined in these sections, impacts would be less than significant with implementation of mitigation. Refer to Section IV.H.4, Public Services, Parks and Recreation for more detail on the proposed open space and recreational facilities. Thus, no further analysis of this issue is required.

# **13. TRANSPORTATION/TRAFFIC**

The proposed project would not exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads or highways. Per the Traffic Analysis Report prepared for the proposed project (refer to Section IV.I, Transportation/Traffic), since the project would add less than 100 peak hour trips to regional roads, no analysis under the Congestion Management Program (CMP) of the City/County Association of Governments (C/CAG) is required. The CMP guidelines specify that a project must implement travel demand management (TDM) measures if the project produces 100 or more new peak hour trips on CMP roadways. The analysis of project traffic on CMP roadway facilities indicates that the project would add approximately 19 trips to SR 92 during the AM peak hour and approximately 25 trips during the PM peak hour. Therefore this project is not required to implement any TDM measures.<sup>11</sup> Thus, impacts would be less than significant and no further analysis of this issue is required.

<sup>&</sup>lt;sup>11</sup> Hexagon Transportation Consultants, Inc. 2008. Ascension Subdivision Residential Development, Draft Traffic Analysis Report, August 12, 2008.

The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks. The proposed project does not include any aviation-related uses. As such, the proposed project would have no associated airport use impact and no further analysis of this issue is required.

The proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks). There are currently two public transit systems serving the project area, the SamTrans Bus Service and the Caltrain Service (refer to Section IV.I, Transportation/Traffic). Additionally, current pedestrian facilities in the area consist of sidewalks on the neighborhood streets. No bus stops or bicycle facilities are proposed as part of the project. The project Vesting Tentative Map (refer to Figure III-12) shows that the new private access road would develop sidewalks along most of the proposed roadway, specifically along all 32-foot wide segments. Further, the proposed project would include an on-site trail system (i.e., Trail 1 and Trail 2), which would connect to off-site sidewalk systems. As outlined in Section III (Project Description), Trail 1 would consist of a 5foot wide pathway that would transverse the northern portion of the site running behind proposed Lots 1-6 and would be accessible from two points: (1) the stairs to be located near the tot lot; and (2) the far northeastern corner of the proposed on-site private main access road (near the front of Lot 6). While Trail 2 would consist of a 5-foot wide pathway, which would run through the proposed common area/conservation area located within the southwestern portion of the project site (specifically adjacent to Lots 18, 19 and 20). This trail would be accessible from two points: (1) the western portion along the private main access road (near Lot 13); and (2) via stairs leading up to the trail from Ascension Drive (refer to Figure III-12). The above project attributes would provide adequate alternative pedestrian transportation opportunities within and in the immediate vicinity of the project site. The project would not conflict with any adopted policies, plans or programs supporting alternative transportation. Therefore, no impact would occur and no further analysis is required.

# 14. UTILITIES & SERVICE SYSTEMS

The proposed project would not exceed treatment requirements of the applicable Regional Water Quality Control Board. As described in Section IV.J (Utilities & Service Systems), the RWQCB Region 2 (San Francisco Bay) office develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region. In accordance with Section 13263 of the California Water Code, the RWQCB is authorized to issue Waste Discharge Requirements (WDR), as well as periodically review self-monitoring reports submitted by the discharger, perform independent compliance checking, and take enforcement action if necessary. The City of San Mateo Wastewater Treatment Plant (SMWTP) is in the process of upgrading the existing wastewater system with improvements that include the replacement of anaerobic digesters and installation of centrifuges. The proposed project would be required to comply with all applicable wastewater treatment requirements of the RWQCB Region 2 (San Francisco Bay) office. Therefore, project-related impacts associated with the exceedance of treatment requirements of the RWQCB Region 2 (San Francisco Bay) office is required.

# VI. ALTERNATIVES TO THE PROPOSED PROJECT

# **INTRODUCTION**

The CEQA Guidelines require that EIRs include the identification and evaluation of a reasonable range of alternatives that are designed to reduce the significant environmental impacts of the project while still meeting the general project objectives. The CEQA Guidelines also set forth the intent and extent of alternatives analysis to be provided in an EIR. Those considerations are discussed below.

Section 15126.6(a) of the CEQA Guidelines states: "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparable merits of the alternatives. 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 decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose it's reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

### Purpose

Section 15126.6(b) of the CEQA Guidelines states: "Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly."

### **Potentially Significant Project Impacts**

The proposed project impacts that would be significant and unavoidable consist of the following:

- Air Quality Generated NO<sub>x</sub> Emissions (Temporary Construction)
- Noise Short-term Increase in Noise Levels (Temporary Construction)

The proposed project impacts that would be less than significant with mitigation include the following:

- Air Quality Generated PM<sub>10</sub> Emissions (Temporary Construction)
- **Biological Resources** Special-Status Plant and Wildlife Species, Tree Preservation
- Geology & Soils Landslide and Slope Instability Hazards, Soil Erosion/Loss of Topsoil

- Hydrology & Water Quality Existing Storm Drain System Capacity
- **Public Services** Fire Protection Services
- **Transportation/Traffic** On-Site Circulation
- Utilities & Service Systems Wastewater Conveyance Infrastructure

#### **Project Contributions to Potentially Significant Cumulative Impacts**

The proposed project's incremental contribution to cumulative impacts that would be less than significant with mitigation includes the following:

• **Transportation/Traffic** – Traffic During Construction (Temporary)

All other impacts are less than significant without mitigation. Therefore, the choice of proposed project alternatives for analysis in the DEIR focused on those that would further reduce and avoid significant air quality, biological resources, geology and soils, hydrology and water quality, noise, public services, transportation, and utilities impacts.

### **Project Objectives**

As stated above, the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the proposed project. The Ascension Heights Subdivision project ("proposed project") proposes to subdivide six legal parcels, which make up the project site, into 25 single-family residential lots. In addition, the proposed project would include open space and recreation amenities. The objectives of the proposed project are as follows:

- Provide sufficient housing supply jointly with the cities located in the County that meet San Mateo County's projected housing needs;
- Provide phased residential development consistent with economic and social needs and environmental constraints;
- Enhance and preserve the environmental quality of residential areas in the County through appropriate mitigation programs;
- Work with all affected local jurisdictions and agencies to develop appropriate impact mitigation and fee structure programs to greatly reduce or eliminate the project's impacts on the community's existing residents;
- Provide development of open space and trails in the County's residential areas;

- Establish a system of trails and walkways as an alternate mode of travel, which would provide convenient and safe movement of non-motorized traffic;
- Provide a well-designed development that is compatible and complementary with surrounding land uses; and
- Blend the building types and densities with surrounding residential developments to provide orderly visual and land use transitions.

# Selection of a Reasonable Range of Alternatives

Section 15126.6(c) of the CEQA Guidelines states: "The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

### Alternatives Rejected as Being Infeasible

As described above, Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reasons underlying the lead agency's determination. Alternatives involving commercial, recreational and/or industrial land uses were dismissed as being infeasible because they would not satisfy the proposed project's primary objective of increasing housing opportunities in San Mateo County. Also, commercial and/or industrial land use alternatives would not necessarily reduce the significant impacts associated with the proposed project. An alternative involving an alternate project site was also rejected as being infeasible because the project applicant does not own a site with similar requirements (i.e., size, zoning, etc.) to develop the proposed project.

### **Overview of Selected Alternatives**

Four alternatives are evaluated in this analysis. Differences between the alternatives include changes to number and/or size of single-family residential lots, impervious surface area, and quantity of cut and fill for grading. The alternatives to be analyzed in comparison to the proposed project include:

Alternative A:	No Project/No Build
Alternative B:	City of San Mateo Zoning (R1-B District)
Alternative C:	Large-Lot
Alternative D:	15-Lot

# Assumptions and Methodology

A project may have the potential to generate significant impacts, but considerations in project design may also afford the opportunity to avoid or reduce such impacts. The alternatives analysis is presented as a comparative analysis to the proposed project, and assumes that all applicable mitigation measures proposed for the project would apply to each alternative. The following alternatives analysis compares the potential environmental impacts of four alternatives with those of the proposed project for each of the environmental topics analyzed in detail in Section IV (Environmental Impact Analysis) of this Draft EIR (DEIR).

# ALTERNATIVE A. NO PROJECT/NO BUILD

As required by CEQA, this subsection analyzes a "No Project" Alternative (Alternative A). Under Alternative A (No Project/No Build) the proposed project would not be constructed, and the project site would remain in its current, partially undeveloped condition. The analysis of Alternative A assumes the continuation of existing conditions, as well as development of the related projects described in Section III.B (Related Projects) and those forecasted under the County General Plan. The potential environmental impacts associated with Alternative A are described below and are compared to the environmental impacts associated with the proposed project.

### Aesthetics

Under Alternative A, no grading, tree and vegetation removal, or development would occur on the project site and the existing aesthetic characteristics would remain unchanged. There would be no impacts to scenic resources, visual character, and no new sources of light and glare would be developed on the project site. Therefore, this alternative would eliminate the proposed project's less-than-significant impacts to visual resources.

# Air Quality

Under Alternative A, no grading or construction would occur at the site. Thus, this alternative would not generate any fugitive dust or other pollutant emissions associated with grading and construction activities at the site and during truck haul trips. Implementation of Alternative A would eliminate the proposed project's short-term air quality impacts resulting from grading activities. This DEIR concluded that the long-term operation of the proposed project would result in less-than-significant impacts to air quality. Under Alternative A, a single-family residential subdivision would not be developed on the site, and no new traffic trips would be generated. As such, Alternative A would not generate any pollutant emissions associated with long-term operation of a housing development and would eliminate the proposed project's less-than-significant air quality impacts associated with long-term operation of the project.

### **Biological Resources**

Because the project site would not be developed under Alternative A, no trees or vegetation would be removed from the site. Thus, this alternative would eliminate the proposed project's potentially significant, but mitigable, impacts related to special-status plant and wildlife species and their habitat. Impacts to the Mission blue butterfly (MBB), tree preservation, and nesting birds and mammals would be eliminated under this alternative. Overall impacts to biological resources would be less under Alternative A than under the proposed project.

# Geology & Soils

Under Alternative A, no development would occur on the project site. This DEIR concluded that the project site is located in a seismically active region and development of the proposed project would expose future structures and residents to seismic ground shaking. However, the project applicant would

be required to design and construct the proposed project in conformance to the most recently adopted CBC design parameters and impacts would be less than significant. Under Alternative A, the potential for seismic ground shaking would still exist, however, no new structures or residents would be exposed. Therefore, impacts associated with seismic ground shaking would be less under Alternative A than under the proposed project.

Overall, the project site is subject to geologic and soil instabilities. Currently, the project site has erosional features. Under Alternative A, these erosional features would continue to worsen. The proposed project includes improvements to the erosional features. Therefore, impacts related to landslide and slope and soil erosion hazards would be greater under Alternative A than under the proposed project.

# Hydrology & Water Quality

This DEIR concluded that the construction and long-term operation activities associated with the proposed project would result in less-than-significant impacts to water quality. Alternative A would not include grading, construction, or development of a single-family residential subdivision on the project site and as such, would not have the potential to contribute any pollutants to runoff that are typically associated with construction and occupancy of the site. Additionally, although Alternative A does not include the development of any impermeable surfaces on the site (i.e., structures, streets, sidewalks); Alternative A would not include any proposed on-site existing drainage improvements (as proposed under the project). Existing runoff from the site generally flows overland and down the relatively steep hillsides of the site. The existing storm drain system on the site is not adequate to accommodate the existing flows from the site, resulting in a potentially significant impact to off-site uses. The existing drainage conditions have resulted in severe erosion of portions of the site, whereas implementation of the proposed project (as well as Alternatives B through D) would reduce the potential for erosion on the project site over the existing condition (through incorporation of project design and drainage mitigation measures). Therefore, implementation of this alternative would result in slightly greater hydrological impacts than those described for the proposed project.

### Land Use & Planning

Under Alternative A, the project site would continue to be partially vacant. As with the proposed project, there would be no division of an established community, no conflicts with applicable plans, policies, or regulations, and no conflicts with an adopted habitat conservation plan. Similar to the proposed project, Alternative A would result in less-than-significant impacts related to land use & planning.

### Noise

Because Alternative A would not involve any grading of the project site and construction of the proposed homes would not occur, this alternative would eliminate the proposed project's short-term significant and unavoidable impacts related to construction noise. Also, because this alternative would not result in permanent uses on the site, Alternative A would eliminate the proposed project's less-than-significant noise impacts associated with long-term operation of the proposed project.

# **Public Services**

# Police

Under Alternative A, there would be no development of residential land uses and no new residents or visitors would occupy the project site, and thus, this alternative would not create a demand for police services. Therefore, implementation of this alternative would eliminate the proposed project's less-than-significant impacts to police services.

# Fire Protection

Under Alternative A, there would be no development of residential land uses and no new residents or visitors would occupy the project site, and thus, this alternative would not create a demand for fire protection services. Therefore, implementation of this alternative would eliminate the proposed project's less-than-significant impacts to fire protection services.

# Schools & Libraries

Under Alternative A, there would be no development of residential land uses and no new residents or school-aged children would occupy the project site, and thus, this alternative would not create a demand for school or library services. Therefore, implementation of this alternative would eliminate the proposed project's less-than-significant impacts to school and library services.

### **Recreation/Parks**

Under Alternative A, there would be no development of residential land uses and no families on the project site, and thus, this alternative would not create a demand for recreation and park services. Therefore, implementation of this alternative would eliminate the proposed project's less-than-significant impacts to recreation and park services.

### **Transportation/Traffic**

Because no single-family residential land uses would be developed on the project site under Alternative A, no new traffic trips would be generated. Alternative A would also avoid the proposed project's potentially significant, but mitigable, traffic impacts associated with construction activities, as well as the potentially significant, but mitigable, impact related to on-site circulation.

### **Utilities & Service Systems**

### Sewer

Because Alternative A would not result in the development of single-family residential land uses on the project site, this alternative would not result in generation of wastewater at the project site. Thus, Alternative A would eliminate the proposed project's potentially significant, but mitigable, impacts to sewer service.

### Water

Because Alternative A would not result in the development of single-family residential land uses on the project site, this alternative would not result in a demand for water at the project site. Thus, Alternative A would eliminate the proposed project's less-than-significant impacts to water service.

# Solid Waste

Because Alternative A would not result in the development of single-family residential land uses on the project site, this alternative would not result in generation of solid waste at the project site. Thus, Alternative A would eliminate the proposed project's less-than-significant impacts to landfill capacity.

# **Relationship of the Alternative to the Objective**

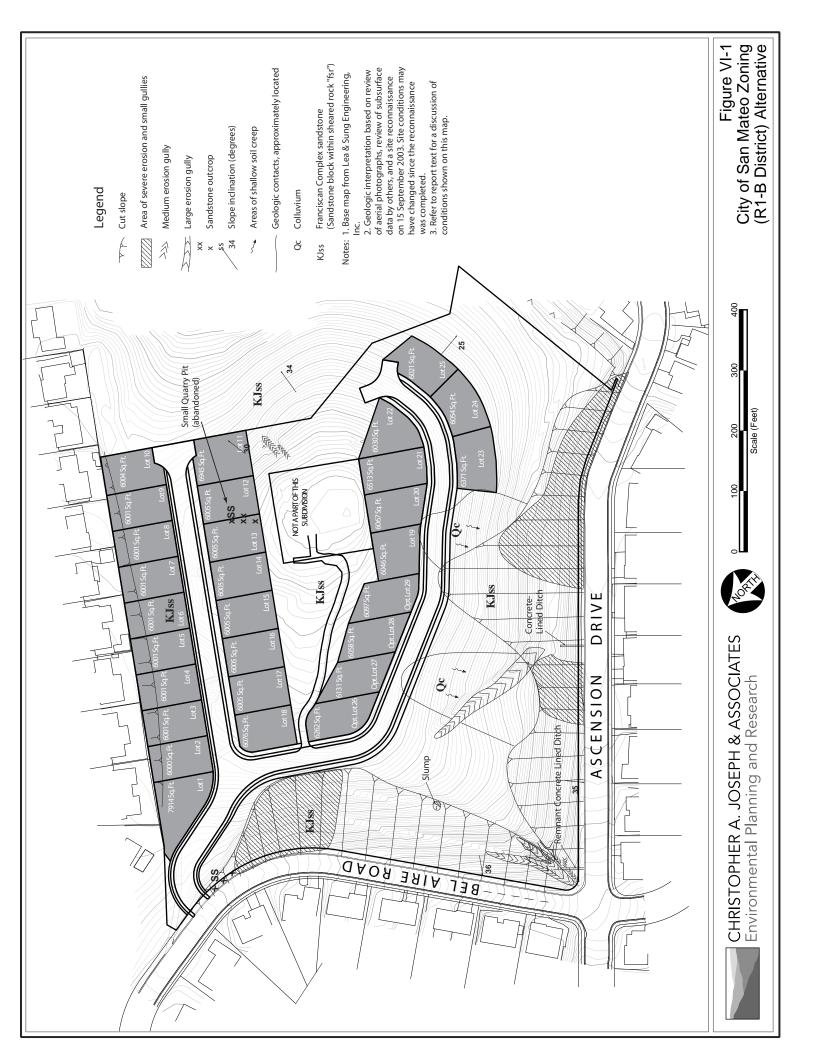
Alternative A (No Project/No Build) does not meet the project objectives.

# ALTERNATIVE B. CITY OF SAN MATEO ZONING (R1-B DISTRICT)

Alternative B (City of San Mateo Zoning (R1-B District)) includes development of the proposed project site similar to that described in Section III (Project Description), but the lot sizes would be consistent with the City of San Mateo R1-B Zoning District. Under Alternative B, the project site would be subdivided into at least 25 lots with the potential development of 4 additional lots (optional), and each lot would be developed with one single-family house and associated landscaping and access infrastructure (see Figure VI-1). However, lot sizes would be limited to a minimum of 6,000 square feet (sf), as opposed to the 10,120 to 17,590 sf (or 2.8 du/acre) lot size range proposed under the proposed project. Additionally, minimum parcel width would be 60 feet. Under Alternative B, the reduced lot sizes would decrease the area of development from that of the proposed project, resulting is a reduction of visual access, grading and excavation, and impermeable surfaces.

Under this alternative, access to the site would be provided via the new private main access road connecting to Bel Aire Road. The eastern portion of the proposed project's private subdivision street would not be developed. A portion of the existing California Water Service Company (Cal Water) water tank/cell site access road would be relocated. Under this alternative, the proposed 25-29 lots would be reconfigured to allow preservation of 3.24-acres of open space at the top of the hill. In addition, a larger conservation easement would be dedicated. Unlike the proposed project, Alternative B would not include development of a tot lot. Because lot sizes would be reduced under Alternative B, the Emergency Vehicle Access (EVA) road would be eliminated; however, the new main access roads design features (i.e., width, slope, curve, turnarounds) would comply with California Department of Forestry and Fire Protection (CALFIRE) and County design standards and requirements for emergency access. In addition, the proposed project's Trail 1 and Trail 2, and the drainage systems that parallel Ascension Drive would be eliminated.

Except as described above, other project characteristics (e.g., lighting, landscaping, erosion repair) are assumed to be generally similar to those of the proposed project, for the purpose of analyzing this alternative. The potential environmental impacts associated with this alternative are described below and are compared to the environmental impacts associated with the proposed project.



# Aesthetics

Similar to the proposed project, Alternative B would include the development of a 25 single-family-unit subdivision on the project site, and would include the potential development of 4 optional units. While this alternative reduces the area of development and would reduce visual impacts from that of the proposed project, some of the development would be visible from portions of several scenic roadways (i.e., Polhemus Road, I-280, and SR 92) due to the project site's elevated topography. However, this DEIR concluded that because the project site constitutes such a small percentage of the greater field of view as seen from these roadways, development of the proposed project would not greatly alter the views, and as such, would not significantly affect these views. Similar to the proposed project, development of Alternative B would not affect the overall value of the views seen from these roadways. In addition and similar to the proposed project, Alternative B would be similar to surrounding viewsheds and uses (i.e., landscaping, mature trees, and glimpses of single-family homes).

This DEIR concluded that the proposed project would not significantly affect scenic resources on the site and that through compliance with County General Plan policies, the proposed project could represent an "attractive urban development," which also falls under the County's definition of a scenic resource. The scenic resources found on portions of the project site include large trees and natural scenery (grasses and shrubs). Similar to the proposed project, this alternative would result in the alteration of portions of the project site that has a "natural scenery" appearance. Like the proposed project, tree removal associated with this alternative would be replaced in compliance with the appropriate tree replacement requirements, which shall be determined in coordination with the County Community Development Director. Unlike the proposed project, this alternative would preserve open space at the top of the hill. In addition, Alternative B would dedicate a larger conservation easement than would the proposed project. Similar to the proposed project, development of Alternative B would represent an "attractive urban development."

This DEIR also concluded that development of the proposed project on the site would not adversely alter the visual character of the site or surrounding areas, given the somewhat mixed visual nature of the site and the surrounding single-family residential land uses. Like the proposed project, this alternative's final project design (i.e., landscaping and residential homes) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes and landscaping would be designed and constructed to be compatible with or contribute to the appearance and visual character of the surrounding area.

Sources of light and glare associated with the proposed project would result in less-than-significant impacts. As mentioned above and like the proposed project, this alternative's final project design would comply with all applicable policies, regulations, and codes, as well as Bel Aire Lighting District standards, and would be required to undergo County approval prior to issuance of building permits to ensure that the proposed homes, roadways streetlights, and associated lighting plans would be designed and constructed to be compatible with the surrounding area.

Considering the similarity of Alternative B with the proposed project, impacts related to scenic resources, visual character, and light and glare would be less than significant, similar to the proposed project.

# Air Quality

Similar to the proposed project, Alternative B would include the development of a 25 single-family unit subdivision on the project site, and would include the potential development of 4 optional units. However, this alternative would result in the reduction in the amount of grading and off-haul trips from the site. This DEIR concluded that potential emissions associated with construction of the proposed project would not exceed the BAAQMD operational threshold for ROGs or result in a probability of the Maximally Exposed Individual (MEI)<sup>1</sup> contracting cancer greater than 10 in one million due to TAC emissions. According to the BAAQMD CEQA Guidelines, the implementation of the prescribed control measures listed in the Air Quality section (Mitigation Measure AQ-1) would reduce the proposed project's potential PM<sub>10</sub> emissions during grading operations would exceed the BAAQMD NO<sub>x</sub> operational emissions threshold; therefore, Mitigation Measure AQ-1 lists several control measures that can be implemented to reduce NO<sub>x</sub> emissions from construction equipment exhaust during the grading phase.

Because this alternative would include less grading and need for off-haul trips, these emissions would be less under Alternative B than under the proposed project. However, the  $NO_x$  emissions may continue to exceed the BAAQMD operational threshold, even with mitigation. Therefore, short-term air quality impacts under Alternative B may be similar to the proposed project.

This alternative would include the same number of single-family homes as the proposed project, with the potential to include 4 additional units. This alternative would result in the generation of a comparable number of traffic trips as would the proposed project. Thus, the amount of operational pollutant emissions that would be generated under Alternative B would be similar to the proposed project and would also be below the BAAQMD thresholds of significance.

# **Biological Resources**

Although Alternative B would include the development of a 25 unit single-family residential subdivision (with the potential development of 4 optional units), similar to the proposed project, Alternative B's reduced lot sizes would decrease the area of development from that of the proposed project and would involve slightly less grading. Thus, the overall amount of vegetation and tree removal would be less. This DEIR concluded that the proposed project would require the removal of several lupine plants, which are host plants for the MBB, on the southwestern portion of the project site. Thus, the proposed project impacts to this sensitive species would be potentially significant. Under Alternative B, less area would be developed and the proposed project's EVA road, Trail 2, and drainage systems parallel to Ascension

<sup>&</sup>lt;sup>1</sup> An MEI is a hypothetical off-site person, usually at or near the site boundary, who would receive the maximum exposure from a facility's operations.

Drive would be eliminated; hence, the small population (15 to 20 plants) of one of the larvae host plants (*Lupinus formosus*) for the federally endangered MBB would be avoided. Alternative B avoids development within this sensitive area of the project site and thus eliminates the proposed project's potentially significant impact to the MBB.

Additionally, this DEIR concluded that during construction, existing trees that are not proposed for removal and nesting birds could be adversely affected, and impacts related to trees and nesting birds would be potentially significant. Mitigation measures prescribed in this DEIR would reduce the impacts to a less-than-significant level. Although Alternative B would require removal of fewer trees, similar significant impacts would occur. Tree removal associated with this alternative would be replaced in compliance with the appropriate tree replacement requirements, which shall be determined in coordination with the County Community Development Director. However, implementation of the mitigation measures prescribed for the proposed project would also reduce the significant impacts of Alternative B to a less-than-significant level.

# Geology& Soils

Similar to the proposed project, Alternative B includes the development of a 25 single-family residential unit subdivision on the project site, and would include the potential development of 4 optional units. This DEIR concluded that because of the steep inclination of the site's slopes, development of the proposed project could result in landslides and soil instabilities if the project did not implement proper grading and drainage design. As such, this DEIR concluded that the proposed project's impacts related to landslides and soil instabilities would be significant, but could be mitigated to a less-than-significant level with implementation of the mitigation measures. Alternative B would reduce the grading associated with the proposed project and would avoid more of the on-site geotechnical constraints compared to the proposed project site, similar significant impacts related to landslides and soil instabilities could occur. The mitigation measures prescribed for the proposed project would also apply to this alternative and would reduce the significant impacts to a less-than-significant level, similar to the proposed project.

### Hydrology & Water Quality

Similar to the proposed project, Alternative B would result in the development of 25 single-family homes (with the potential development of 4 optional units). Development under Alternative B would be subject to the same SWPPP requirements as would the proposed project, and thus, water quality impacts under this alternative would be less than significant, similar to the proposed project. Considering there are no aquifers under the site or in the vicinity of the site, development of the project site in any manner would not affect groundwater recharge. The proposed drainage infrastructure under Alternative B would be similar to that proposed under the project. This DEIR concluded that the proposed project's improvements to drainage patterns on the project site would reduce the potential for erosion and siltation over the existing condition. This would be true for Alternative B as well, and this alternative would result in less-than-significant impacts related to erosion/siltation, similar to the proposed project. Given that the amount of impervious surfaces that would be developed on the project site as a result of Alternative B

would be similar as under the proposed project, the amount of runoff from the site would be similar as that created by the proposed project. Because two storm drains that would accommodate runoff from the project site are already functioning over capacity, runoff generated by Alternative B would result in significant impacts related to storm drain capacity, similar to the proposed project. However, the design features and the prescribed mitigation measures in this DEIR for the proposed project's significant impacts to storm drain capacity would also reduce the impact to less than significant under this alternative.

# Land Use & Planning

This DEIR concluded that implementation of the proposed project would result in less-than-significant impacts related to division of an established community. Similar to the proposed project, Alternative B would result in the same type of development on the project site, and would not conflict with any of the relevant land use plans, policies, regulations, or any adopted habitat conservation plans (i.e., a HCP or a NCCP). Thus, similar to the proposed project, Alternative B would also result in less-than-significant land use and planning impacts.

### Noise

Relative to construction activities, Alternative B would include generally the same amount of development of the project site as the proposed project, requiring the same types and number of construction equipment. Noise levels associated with construction of Alternative B would be approximately the same as noise levels under the proposed project. This DEIR concluded that noise levels associated with construction of the proposed project on the project site and the soil haul trucks would result in a substantial, temporary increase in noise levels at land uses adjacent to the project site and along the roadways that would be used by the haul trucks; construction noise impacts were determined to be significant and unavoidable. Thus, short-term construction noise levels under Alternative B would also be significant and unavoidable.

Similar to the proposed project, Alternative B would include the development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would result in the generation of the same number of traffic trips as the proposed project. Thus, the types and amount of noise that would be generated under Alternative B would be the same as under the proposed project and would not constitute a substantial, permanent increase in noise levels. Operational noise impacts under Alternative B would be less than significant with mitigation, similar to the proposed project.

### **Public Services**

# Police

Similar to the proposed project, Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents (including optional 4 units), potentially increasing the demand for police projection services. Under Alternative B, the lot layout is reduced from that of the proposed project and the

secondary EVA road would be eliminated as the new main access roads design features (i.e., width, slope, curve, turnarounds) would comply with CALFIRE and County design standards and requirements for emergency access. This DEIR concluded that the proposed project's impacts related to police services would be less than significant. Under Alternative B, impacts related to police services would also be less than significant, albeit slightly greater with the optional 4 units developed.

# Fire Protection

Similar to the proposed project, Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents, potentially increasing the demand for fire protection services. Under Alternative B, the lot sizes and layout are reduced from that of the proposed project and the secondary EVA road would be eliminated as the new main access roads design feature (i.e., width, slope, curve, turnarounds) would comply with CALFIRE and County design standards and requirements for emergency access. This DEIR concluded that through compliance with State and CALFIRE's fire safety codes, County subdivision regulations for construction, access, fire flows, and fire hydrants, and various mitigation measures, the proposed project's impacts related to fire protection services would be less than significant. Thus, impacts under Alternative B related to fire protection services would also be less than significant with mitigation, albeit slightly greater with the optional 4 units developed.

# Schools & Libraries

Similar to the proposed project, Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents (some are expected to be school-aged children), potentially increasing the demand for school and library services. This DEIR concluded that the proposed project's impacts related to school and library services would be less than significant. Thus, impacts under Alternative B related to school and library services would also be less than significant, albeit slightly greater with the optional 4 units developed.

### **Recreation/Parks**

Because Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents, the demand for recreation and parks services associated with this alternative would be the same as the demand created by the proposed project. Recreation and open space amenities to be implemented under the proposed project would offset the demand for parks and recreation services. This DEIR concluded that the proposed project's impacts related to recreation and parks would be less than significant. Although the tot lot would not be developed under this alternative, the open space/common area and conservation easement area would increase in size over that of the proposed project. Thus, impacts under Alternative B related to recreation and parks would also be less than significant.

# **Transportation/Traffic**

Similar to the proposed project, Alternative B would include the development of a 25 single-family unit subdivision on the project site (with the potential development of 4 optional units), but would result in a reduction in the amount of grading and off-haul trips from the project site from that of the proposed project. This DEIR concluded that the proposed project would result in significant impacts related to project-specific construction traffic and cumulative construction traffic, but these impacts would be reduced to less–than-significant levels through implementation of the mitigation measures prescribed in this DEIR. Although development under this alternative would reduce the number of off-haul trips during construction, the number of trips could still be considered substantial and would result in significant temporary impacts related to project-specific and cumulative construction traffic. However, the mitigation measures prescribed in this DEIR for similar significant impacts associated with the proposed project would also reduce these impacts under Alternative B to a less-than-significant level.

Alternative B would result in the generation of a similar number of traffic trips as would the proposed project (or slightly greater with the development of the optional 4 units) and would also comply with the required County guidelines for on-site parking. Under this alternative and similar to the proposed project, parking to accommodate the proposed residential uses would be provided on each of the individual lots and visitor parking would be provided via curbside parking. Thus, impacts related to parking accommodations would be less than significant, similar to the proposed project.

Because lot sizes would be reduced under Alternative B, the EVA road would be eliminated; however, main access roads design features (i.e., width, slope, curve, hammerhead turnarounds) would comply with CALFIRE and County design standards and requirements for emergency access. Under Alternative B and similar to the proposed project, impacts associated with site access and on-site circulation would be less-than-significant with implementation of mitigation.

Similar to the proposed project, the new private subdivision access streets would develop sidewalks along the proposed streets, accommodating pedestrian traffic within the project site and between the project site and the main access road (Bel Aire Road). Similar to the proposed project, impacts related to pedestrian access would be less than significant under Alternative B.

# **Utilities & Service Systems**

### Sewer

Because Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents, similar to the proposed project, the generation of wastewater at the site and the need for sewer service associated with this alternative would be the same as that under the proposed project. This DEIR concluded that the proposed project's impacts related to sewer service (specifically wastewater conveyance infrastructure) would be less than significant with mitigation. Thus, impacts under Alternative B related to sewer service would also be less than significant with mitigation.

### Water

Because Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents, similar to the proposed project, the consumption of water at the site and the need for water service associated with this alternative would be similar as that under the proposed project. This DEIR concluded that the proposed project's impacts related to water service would be less than significant. Thus, impacts under Alternative B related to water service would also be less than significant.

# Solid Waste

Because Alternative B would result in development of 25 single-family homes on the project site (with the potential development of 4 optional units), and would generate approximately 69-79 residents, similar to the proposed project, the generation of solid waste at the site and the need for landfill capacity associated with this alternative would be the same as that under the proposed project. This DEIR concluded that the proposed project's demand for landfill capacity could be accommodated, and project impacts related to solid waste would be less than significant. Thus, impacts under Alternative B related to solid waste would also be less than significant.

# Relationship of the Alternative to the Project Objective

Alternative B (City of San Mateo Zoning (R1-B District)) would meet the project objectives.

# **ALTERNATIVE C. LARGE-LOT**

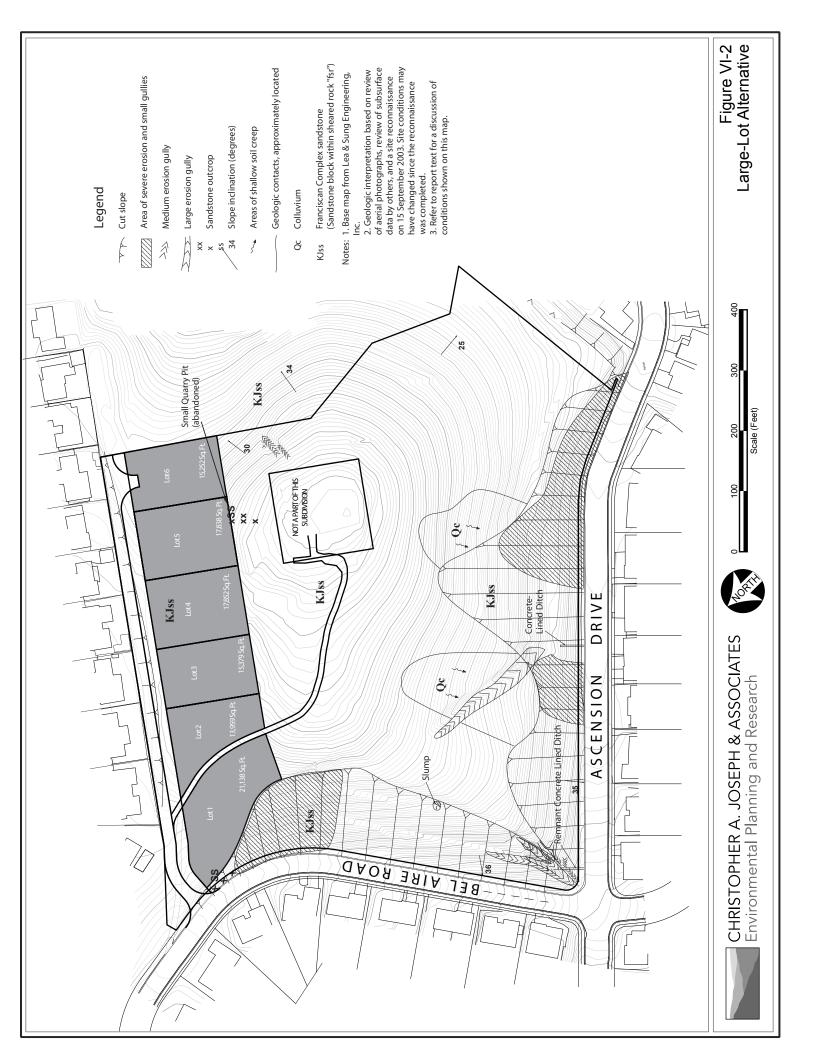
Alternative C (Large-Lot) includes a residential subdivision of the northeastern portion of the project site into six lots, and development of each lot with one-single-family house and associated landscaping, and utility/access infrastructure (see Figure IV-2). However, lot sizes would be larger than under the proposed project, ranging from 13,959 sf to 21,138 sf. Under this alternative, access to the site would be provided via a new main access roadway that would extend from Bel Aire Road, parallel the northern boundary of the site, and end in a hammerhead turnaround. Additionally, the water tank/cell site access road that currently connects to Bel Aire Road would be relocated to connect to Alternative C's new main access road instead of Bel Aire Road. Unlike the proposed project, Alternative C would not include development of a tot lot.

Many lots associated with the proposed project would not be included in this alternative and no homes would be developed near the top of the hill or the southern slope, thereby reducing visual impacts of the proposed project. The remainder of the site would be placed in a conservation easement. While Trail 1 could still be provided under this alternative, Trail 2, the EVA road, and southern drainage and utility features associated with the proposed project would be eliminated, and would avoid the small population of one of the larvae host plants (*Lupinus formosus*) for the MBB. Although the EVA road would be eliminated under Alternative C; the design features of the new main access road (i.e., sufficient width, hammerhead turnaround) would comply with CALFIRE and County design standards and requirements for emergency access. Overall, Alternative C would reduce the grading associated with the proposed project and would avoid the significant on-site geotechnical constraints and steep slopes.

Except as described above, other project characteristics (e.g., lighting, landscaping, erosion repair) are assumed to be generally similar to those of the proposed project, for the purpose of analyzing this alternative. The potential environmental impacts associated with this alternative are described below and are compared to the environmental impacts associated with the proposed project.

### Aesthetics

Alternative C would include the development of a six-unit single-family subdivision on the project site, with associated landscaping, and lighting similar to the proposed project. Under this alternative, all of the development would occur on the northeastern side of the site, and due to the topography of the site, would not be visible from I-280, SR 92, or Polhemus Road. The DEIR concluded that because the project site constitutes such a small percentage of the greater field of view as seen from these roadways, development of the proposed project would not greatly alter the views seen from these scenic roadways, and as such, the proposed project would not significantly affect these views. Under Alternative C, development on the project site would not be visible from these scenic roadways.



Portions of the development could be visible from adjacent neighborhoods. However, views toward the project site from these neighborhoods are not considered scenic, and the visible portions of the development would not affect the quality of the views that are available from these vantage points. Thus, Alternative C would eliminate the proposed project's less than significant impact to scenic resources.

As with the proposed project, this alternative's final project design (i.e., landscaping and residential homes) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes and would be required to undergo County approval prior to issuance of building to ensure that the design of the development would be compatible with or contribute to the appearance and visual character of the surrounding area. Also, tree removal associated with this alternative would be replaced in compliance with the appropriate tree replacement requirements, which shall be determined in coordination with the County Community Development Director. This DEIR concluded that the proposed project would not significantly affect scenic resources on the site and that through compliance with County General Plan policies, the proposed project could represent an "attractive urban development," which also falls under the County's definition of a scenic resource.

This DEIR also concluded that development of the proposed project on the site would not adversely alter the visual character of the site or surrounding areas, given the somewhat mixed nature of the site and the surrounding single-family residential land uses. Further, sources of light and glare associated with the proposed project would not result in significant light and glare impacts. Alternative C would develop the site with the same type of land use as would the proposed project, but would develop far less of the site, resulting in the removal of fewer trees and inclusion of fewer sources of light and glare. Thus, impacts related to scenic resources, visual character, and light and glare would be reduced from that of the proposed project and less than significant, similar to the proposed project.

# Air Quality

Alternative C would include the development of a six-unit single-family subdivision on the project site (19 fewer units than the proposed project) and would result in a reduction in the amount of grading and off-haul trips from the site. This DEIR concluded that potential emissions associated with construction of the proposed project would not exceed the BAAQMD operational threshold for ROGs or result in a probability of the MEI contracting cancer greater than 10 in one million due to TAC emissions. According to the BAAQMD CEQA Guidelines, the implementation of the project's potential PM<sub>10</sub> emissions during construction to a less than significant impact. The unmitigated NO<sub>x</sub> emissions during grading operations would exceed the BAAQMD NO<sub>x</sub> operational emissions threshold; therefore, Mitigation Measure AQ-1 lists several control measures that can be implemented to reduce NO<sub>x</sub> emissions from construction equipment exhaust during the grading phase. Because this alternative would include substantially less grading and need for off-haul trips, these emissions would be less under Alternative C than the proposed project, and the NO<sub>x</sub> operational emissions threshold.

Because Alternative C would include the development of fewer single-family homes than the proposed project, this alternative would result in the generation of fewer traffic trips than the proposed project. Thus, the amount of operational pollutant emissions that would be generated under Alternative C would be less than under the proposed project and would not exceed the BAAQMD thresholds of significance. Operational air quality impacts under Alternative C would be less than significant, similar to the proposed project.

# **Biological Resources**

Alternative C would include the development of a six-unit single-family residential subdivision on the project site, 19 fewer units than under the proposed project. Further, the extent of grading on the site would be considerably less than under the proposed project. Thus, the overall amount of vegetation and tree removal would be substantially less. This DEIR concluded that portions of the southwestern lots and development of the drainage infrastructure and Trail 2 in this area would require the removal of several lupine plants, which are host plants for the MBB. Thus, the proposed project impacts to this sensitive species would be significant. Mitigation measures prescribed in this DEIR for these impacts include redesigning portions of the proposed project to avoid removal of the lupine, which would reduce the impact to a less-than-significant level. Alternative C would not include development of the southern lots, Trail 2, the EVA road, or associated drainage infrastructure on the slope above Ascension Drive. Therefore, Alternative C would not impact the lupine in the area and would also avoid the proposed project's significant impacts to the MBB.

Additionally, this DEIR concluded that during construction, existing trees that are not proposed for removal and nesting birds could be adversely affected, and impacts related to trees and nesting birds would be potentially significant. Mitigation measures prescribed in this DEIR for these significant impacts would reduce the impacts to a less-than-significant level. Although Alternative C would require removal of far fewer trees, similar significant impacts could occur. However, implementation of the mitigation measures prescribed for the proposed project would also reduce the significant impacts of Alternative C to a less-than-significant level.

### Geology & Soils

Alternative C includes the development of a six-unit single-family residential subdivision on the project site. This DEIR concluded that because of the steep inclination of the site's slopes and on-site geotechnical constraints, development of the proposed project could result in landslides and soil instabilities if the proposed project did not implement proper grading and drainage design. As such, this DEIR concluded that the proposed project's impacts related to landslide and slope instability hazards and soil erosion would be significant, but could be mitigated to a less-than-significant level with implementation of the mitigation measures. Because Alternative C would not include as much development on the steep slopes of the project site compared to the proposed project, impacts would be greatly reduced; albeit, not to less-than-significant levels. Most, if not all of the mitigation measures prescribed for the proposed project, would also apply to this alternative and would reduce the Alternative C significant impacts to a less-than-significant level, similar to the proposed project.

# Hydrology & Water Quality

Alternative C would result in the development of a six-unit single-family residential subdivision with associated landscaping, and circulation. Development under this alternative would be subject to the same SWPPP requirements as would the proposed project, and thus, water quality impacts under Alternative C would be less than significant, similar to the proposed project. Considering there are no aquifers under the site or in the vicinity of the site, development of the project site in any manner would not affect groundwater recharge. This DEIR concluded that the proposed improvements to drainage patterns on the project site would reduce the potential for erosion and siltation over the existing condition. This would be true for Alternative C as well, and this alternative would result in less-than-significant impacts related to erosion/siltation, similar to the proposed project. Given that the amount of impervious surfaces that would be developed on the project site as a result of Alternative C would be substantially less than under the proposed project, the amount of runoff from the site would also be considerably less than that created by the proposed project. However, because two storm drains that would accommodate runoff from the project site are already functioning over capacity, runoff generated by Alternative C would result in significant impacts related to storm drain capacity, similar to the proposed project, but only to the Bel Aire Road storm drain. The mitigation measures prescribed in this DEIR would also reduce the Alternative C significant impact under this alternative to a less-than–significant level.

# Land Use & Planning

Alternative C includes the development of a six-lot single-family residential subdivision on the project site, 19 lots fewer than the proposed project. Uses would be the same as under the proposed project, increasing the number of residents in the project area by approximately 17, which would be 52 fewer residents than under the proposed project. This DEIR concluded that implementation of the proposed project would result in less-than-significant impacts related to division of an established community. Thus, Alternative C would also result in less-than-significant impacts related to this issue as well. Given that Alternative C would result in the same type of development on the project site as the proposed project, this alternative would not conflict with any of the relevant land use plans, policies, or regulations. However, the existing land use designation for the project site calls for the development of 2.4 to 6.0 single-family dwelling units per acre. Thus, development of only six units on the project site may be inconsistent with the General Plan land use designation for the site, which envisions development of a higher density. Thus, this impact would be potentially significant. Further, considering that the project site is not subject to any adopted habitat conservation plan (i.e., a HCP or a NCCP), development of the site in any manner would not result in conflicts with any adopted habitat conservation plan.

# Noise

Alternative C would include development of 19 fewer homes on the project site and overall would develop less of the site than would the proposed project. Although construction under this alternative would require the use of less construction equipment, the types of equipment that would be used and the noise levels associated with the equipment would be the same as under the proposed project. Additionally, construction under Alternative C would occur directly adjacent to the existing single-family

homes that border the project site on the northeast. This DEIR concluded that noise levels associated with construction of the proposed project on the project site and the soil haul trucks would result in a substantial, temporary increase in noise levels at land uses adjacent to the project site and along the roadways that would be used by the haul trucks; construction noise impacts were determined to be significant and unavoidable. Although the construction period for Alternative C would not last as long as the construction period for the proposed project, and this alternative would not require as much export and haul trips, the construction activities under this alternative would still result in a substantial, temporary increase in noise levels at adjacent land uses near the project site and along the roadways used by the haul trucks. Thus, construction noise levels under Alternative C would also be significant and unavoidable, similar to the proposed project.

Alternative C would include the development of six single-family homes, 19 fewer than the proposed project and would generate fewer traffic trips. Thus, the types and amount of noise that would be generated under Alternative C would be the less than under the proposed project and would not constitute a substantial, permanent increase in noise levels. Operational noise impacts under Alternative C would be less than significant, similar to the proposed project.

# **Public Services**

# Police

Alternative C includes development of six single-family homes on the project site, 19 fewer than the proposed project. The number of potential residents associated with this alternative would be approximately 17, which is 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for police protection service could be accommodated, and impacts related to police services would be less than significant. Thus, because Alternative C would create less of a demand for police protection than the proposed project, impacts under Alternative C related to police services would also be less than significant.

# Fire Protection

Alternative C includes development of six single-family homes on the project site, 19 fewer than the proposed project. The number of potential residents associated with this alternative would be approximately 17, which is 52 fewer residents than under the proposed project, resulting in fewer demands for fire protection services. Alternative C also eliminates the proposed project's flag lots, which are of potential concern to CALFIRE. This DEIR concluded that through compliance with State and CALFIRE's fire safety codes, County subdivision regulations for construction, access, fire flows, and fire hydrants, and various prescribed mitigation measures, the proposed project's impacts related to fire protection services would be less than significant. Thus, impacts under Alternative C related to fire protection services would also be less than significant with mitigation.

# Schools & Libraries

Alternative C includes development of six single-family homes on the project site, 19 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 17, 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for school and library services could be accommodated, and project impacts related to school and library services would be less than significant. Thus, because Alternative C would generate fewer residents and school-aged children than the proposed project, impacts under Alternative C related to school and library services would also be less than significant.

# **Recreation/Parks**

Alternative C includes development of six single-family homes on the project site, 19 fewer than the proposed project. The number of potential residents associated with this alternative would be approximately 17, 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for recreation and park services could be accommodated, and project impacts related to recreation and park services would be less than significant. Thus, because Alternative C would generate fewer residents and school-aged children than the proposed project, impacts under Alternative C related to recreation and park services would also be less than significant.

### **Transportation/Traffic**

Alternative C would include the development of a six single-family unit subdivision on the project site, 19 fewer units than under the proposed project. Further, this alternative would result in a reduction in the amount of grading and off-haul trips from the site during construction over the proposed project. This DEIR concluded that the proposed project would result in significant impacts related to project-specific construction traffic and cumulative construction traffic, but these impacts could be reduced to less-than-significant levels through implementation of the mitigation measures prescribed in this DEIR. Because this alternative would substantially reduce the number of off-haul trips during grading, Alternative C would reduce the proposed project's significant impacts related to project-specific and cumulative construction traffic to a less-than-significant level.

Under Alternative C, the new private main access road would develop sidewalks along the proposed roadway, accommodating pedestrian traffic within the project site and between the project site and the main access road (Bel Aire Road). Similar to the proposed project, impacts related to pedestrian access would be less than significant under Alternative C.

Alternative C would also result in the generation of far fewer traffic trips than the proposed project. Like the proposed project, this alternative would comply with the required County parking standards and impacts related to parking accommodations would be less than significant, similar to the proposed project.

Under Alternative C, the new private main access road would be planned. Under this alternative, the new main access road design features (i.e., width, slope, curve, hammerhead turnaround) would comply with CALFIRE and County design standards and requirements for emergency access. Alternative C would

develop fewer lots and streets than the proposed project and impacts related to access and circulation would be less than significant under Alternative C.

# Utilities & Service Systems

## Sewer

Alternative C includes development of six single-family homes on the project site, 19 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 17, 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's impacts related to sewer service (specifically wastewater conveyance infrastructure) would be less than significant with mitigation. Thus, impacts under Alternative C would also be less than significant with mitigation.

### Water

Alternative C includes development of six single-family homes on the project site, 19 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 17, 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for water service could be accommodated, and project impacts related to water service would be less than significant. Thus, because Alternative C would consume less water than the proposed project, impacts under Alternative C related to water service would also be less than significant.

### Solid Waste

Alternative C includes development of six single-family homes on the project site, 19 fewer than the proposed project. The number of potential residents associated with this alternative would be approximately 17, 52 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for landfill capacity could be accommodated, and project impacts related to solid waste would be less than significant. Thus, because Alternative C would generate less solid waste than the proposed project, impacts under Alternative C related to solid waste would also be less than significant.

### **Relationship of the Alternative to the Project Objective**

Because Alternative C (Large Lot) includes the development of six single-family homes (as opposed to 25), this alternative only partially meets the project objectives.

# **ALTERNATIVE D. 15-LOT**

Alternative D (15-Lot) includes subdivision of the northeastern portion of the project site into 15 lots and development of each lot with one-single-family house, associated landscaping, and utility/access infrastructure (see Figure VI-3). However, lot sizes would be generally smaller than under the proposed project, ranging from 7,549 sf to 9,054 sf. Under this alternative, access to the site would be provided via a new main access roadway that would extend from Bel Aire Road, splitting into eastern and southern legs. The eastern leg of the access roadway would terminate in a hammerhead turnaround. The southern leg would also terminate in a hammerhead turnaround with the water tank/cell site access road realigned from its current entrance to the site (at Bel Aire Road) to the southern leg's turnaround. Unlike the proposed project, Alternative D would not include development of a tot lot.

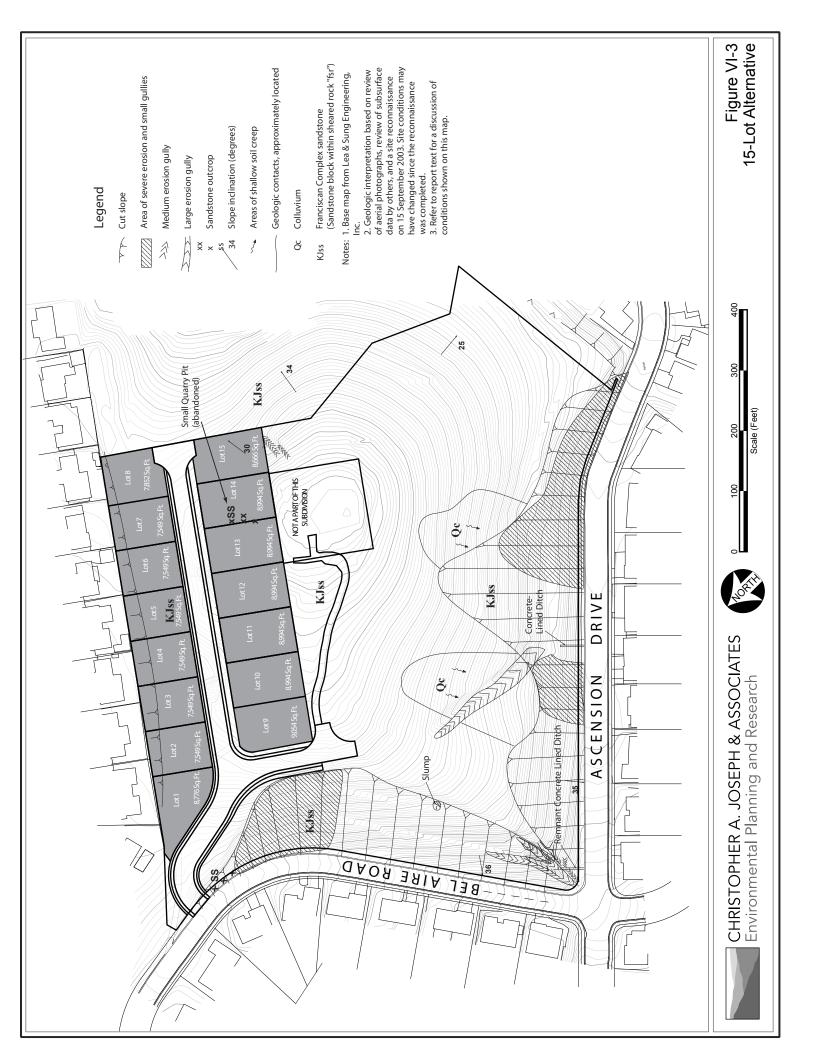
Similar to Alternatives B and C, many lots associated with the proposed project would not be included in this alternative, and the 15 lots would be created at the back side (northeast side) of the hill, which would reduce the visual impacts associated with the proposed project. The remainder of the site would be placed in a conservation easement. Trail 2, the EVA road, drainage and utility features associated with the proposed project, as well as proposed project's southern lots, would be eliminated, and would avoid the small population of lupine, which is a host plant for the MBB. Overall, Alternative D would reduce the grading associated with the proposed project and would avoid the significant on-site geotechnical constraints and most of the steep slopes.

Except as described above, other project characteristics (e.g. lighting, landscaping, erosion repair) are assumed to be generally similar to those of the proposed project, for the purpose of analyzing this alternative. The potential environmental impacts associated with this alternative are described below and are compared to the environmental impacts associated with the proposed project.

# Aesthetics

Alternative D would include the development of a 15-unit single-family subdivision on the project site and associated landscaping and lighting. Considering that the homes would be developed on the northeastern side of the project site, most of the development under this alternative would be obstructed from view by intervening topography, and would not be visible from Polhemus Road or SR 92. Although it is possible that portions of the structures on the site could be visible from I-280, given the distance of the project site from this scenic roadway, it is not likely that changes to the site under this alternative would be readily discernable. This DEIR concluded that because the project site constitutes such a small percentage of the greater field of view as seen from these roadways, development of the proposed project would not alter the views seen from these scenic roadways, and as such, the proposed project would not significantly affect these views. Similarly, development of Alternative D also would not affect the views seen from these scenic roadways.

As with the proposed project, this alternative's final project design (i.e., landscaping and residential homes) would comply with all applicable General Plan policies, Subdivision Regulations and County Ordinance Codes and would be required to undergo County approval prior to issuance of building permits



to ensure that the design of the development would be compatible with or contribute to the appearance and visual character of the surrounding area. Also, tree removal associated with this alternative would be replaced in compliance with the appropriate tree replacement requirements, which shall be determined in coordination with the County Community Development Director. This DEIR concluded that the proposed project would not significantly affect scenic resources on the site. The proposed project could represent an "attractive urban development," which also falls under the County's definition of a scenic resource.

This DEIR also concluded that development of the proposed project on the site would not adversely alter the visual character of the site or surrounding areas, given the somewhat mixed nature of the site and the surrounding single-family residential land uses. Further, sources of light and glare associated with the proposed project would not result in significant light and glare impacts. Considering that Alternative D would develop the site with single-family homes (similar to the proposed project), would develop less of the site, and would include fewer sources of light and glare, impacts related to scenic resources, visual character, and light and glare would be less than significant, similar to the proposed project.

# Air Quality

Alternative D would include the development of 15 single-family homes on the project site (10 fewer homes than the proposed project) and would result in a reduction in the amount of grading and off-haul trips from the site during construction compared to the proposed project. This DEIR concluded that potential emissions associated with construction of the proposed project would not exceed the BAAQMD operational threshold for ROGs or result in a probability of the MEI contracting cancer greater than 10 in one million due to TAC emissions. According to the BAAQMD CEQA Guidelines, the implementation of the prescribed mitigation measures listed in the Air Quality section (Mitigation Measure AQ-1) would reduce the project's potential PM<sub>10</sub> emissions during construction to a less than significant impact. The unmitigated NO<sub>x</sub> emissions during grading operations would exceed the NO<sub>x</sub> operational emissions threshold; therefore, Mitigation Measure AQ-1 lists several control measures that can be implemented to reduce NO<sub>x</sub> emissions from construction equipment exhaust during the grading phase. Because this alternative would include less grading and need for off-haul trips, these emissions would most likely exceed the BAAQMD NO<sub>x</sub> operational emissions threshold. Therefore, short-term air quality impacts under Alternative D would be similar to the proposed project.

Because Alternative D would include fewer single-family homes than the proposed project, this alternative would result in the generation of fewer traffic trips than the proposed project. Thus, the amount of operational pollutant emissions that would be generated under Alternative D would be less than under the proposed project and would not exceed the BAAQMD thresholds of significance. Operational air quality impacts under Alternative D would be less than significant, similar to the proposed project.

### **Biological Resources**

Alternative D would include the development of a 15-unit single-family residential subdivision on the project site, 10 fewer units than under the proposed project. Further, the extent of grading on the site would be less than under the proposed project. Thus, the overall amount of vegetation and tree removal would be less under this alternative. This DEIR concluded that portions of the southwestern lot lines of the proposed project, development of the drainage infrastructure, and Trail 2 in this area would require the removal of several lupine plants, which are host plants for the MBB. Thus, the proposed project impacts to this sensitive species would be significant. Mitigation measures prescribed in this DEIR for these impacts include redesigning portions of the proposed project to avoid removal of the lupine, which would reduce this impact to a less-than-significant level.

Alternative D does not include development of the proposed project's southern lots, Trail 2, or associated drainage infrastructure on the slope above Ascension Drive. Therefore, this alternative would not impact the lupine in the area, thus avoiding the proposed project's significant impacts to the MBB.

Additionally, this DEIR concluded that during construction, existing trees that are not proposed for removal and nesting birds could be adversely affected, and impacts related to trees and nesting birds would be potentially significant. Mitigation measures prescribed in this DEIR for these significant impacts would reduce the impacts to a less-than-significant level. Although Alternative D would require removal of far fewer trees, significant impacts could occur. However, implementation of the mitigation measures prescribed for the proposed project would also reduce the significant impacts of Alternative D to a less-than-significant level.

### Geology & Soils

Alternative D includes the development of a 15-unit single-family residential subdivision on the project site. This DEIR concluded that because of the inclination of the site's slopes, development of the proposed project could result in deep-seated slope failure and debris-flow type landslides could occur if the proposed project did not implement proper grading and drainage design. As such, this DEIR concluded that the proposed project's impacts related to landslides and soil instabilities would be significant, but could be mitigated to a less-than-significant level with implementation of the mitigation measures. Because Alternative D would also include development on some of the steep slopes of the project site, similar significant impacts related to landslides and soil instabilities could occur. However, because this alternative would develop far less of the site than the proposed project, these impacts would occur at a much less degree than the proposed project. Further, most of the mitigation measures prescribed for the proposed project to reduce these impacts would also apply to this alternative and would reduce the significant impacts to a less-than-significant level, similar to the proposed project.

# Hydrology & Water Quality

Alternative D would result in the development of 15 single-family homes and associated landscaping, and circulation. Development under this alternative would be subject to the same SWPPP requirements as the

proposed project, and thus, water quality impacts under Alternative D would be less than significant, similar to the proposed project. Considering there are no aquifers under the site or in the vicinity of the site, development of the project site in any manner would not affect groundwater recharge. This DEIR concluded that the proposed improvements to drainage patterns on the project site would reduce the potential for erosion and siltation over the existing condition. This would be true for Alternative D as well, and this alternative would result in less-than-significant impacts related to erosion/siltation, similar to the proposed project. Given that the amount of impervious surfaces that would be developed on the project site as a result of Alternative D would be less than under the proposed project, the amount of runoff from the site would also be less than that created by the proposed project. However, because two storm drains that would accommodate runoff from the project site are already functioning over capacity, runoff generated by Alternative D would result in significant impacts related to storm drain capacity, similar to the proposed project. The mitigation measures prescribed in this DEIR would also reduce the significant impact under this alternative to less than significant.

### Land Use & Planning

Alternative D includes the development of a 15-lot single-family residential subdivision on the project site, 10 fewer lots than the proposed project. Uses would be the same as under the proposed project, increasing the number of residents in the project area by approximately 43, which would be 26 fewer residents than under the proposed project. This DEIR concluded that implementation of the proposed project would result in less-than-significant impacts related to division of an established community. Thus, Alternative D would also result in less-than-significant impacts related to this issue as well.

Given that Alternative D would result in the same type of development on the project site, this alternative would not conflict with any of the relevant land use plans, policies, or regulations, similar to the proposed project. However, the existing land use designation for the project site calls for the development of 2.4 to 6.0 single-family dwelling units per acre. Thus, development of only 15 units on the project site may be inconsistent with the General Plan land use designation for the site, which envisions development of a higher density on the site. Further, considering the project site is not subject to any adopted habitat conservation plan (i.e., a HCP or a NCCP), , development of the site in any manner would not result in conflicts with any adopted habitat conservation plan.

#### Noise

Alternative D would include development of 10 fewer homes on the project site than the proposed project, and overall would develop less of the site than the proposed project. However, construction of Alternative D would still require the same types and possibly the same number of construction equipment as the proposed project, resulting in the same temporary noise level increases as described for the proposed project. This DEIR concluded that noise levels associated with construction of the proposed project site and the soil haul trucks would result in a substantial, temporary increase in noise levels at land uses adjacent to the project site and along the roadways that would be used by the haul trucks; construction noise impacts were determined to be significant and unavoidable. Although the construction period for Alternative D would not last as long as the construction period for the proposed

project, and this alternative would not require as much export and haul trips, the construction activities under this alternative would still result in a substantial, temporary increase in noise levels at adjacent land uses near the project site and along the roadways used by the haul trucks. Thus, construction noise levels under Alternative D would also be significant and unavoidable, similar to the proposed project.

Alternative D would include the development of 10 fewer single-family homes than the proposed project and would generated fewer traffic trips. Thus, the types and amount of noise that would be generated under Alternative D would be less than the proposed project and would not constitute a substantial, permanent increase in noise levels. Operational noise impacts under Alternative D would be less than significant, similar to the proposed project.

### **Public Services**

# Police

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, or 26 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for police services could be accommodated, and project impacts related to police services would be less than significant. Thus, because Alternative D would create less of a demand for police protection than the proposed project, impacts under Alternative D related to police services would also be less than significant.

# Fire Protection

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, or 26 fewer residents than under the proposed project. Similar to Alternatives A, B and C, Alternative D also eliminates the proposed project's flag lots, which are of potential concern to CALFIRE. This DEIR concluded that through compliance with State and CALFIRE's fire safety codes, County subdivision regulations for construction, access, fire flows, and fire hydrants, and various prescribed mitigation measures, project impacts related to fire protection services would be less than significant. Thus, impacts under Alternative D related to fire protection services would also be less than significant with mitigation.

### Schools & Libraries

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, 26 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for school and library services could be accommodated, and project impacts related to school and library services would be less than significant. Thus, because Alternative D would generate fewer residents and school-aged children than the proposed project, impacts under Alternative D related to school and library services would also be less than significant.

# **Recreation/Parks**

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, 26 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for recreation and park services could be accommodated, and project impacts related to recreation and park services would be less than significant. Thus, because Alternative D would generate fewer residents and school-aged children than the proposed project, impacts under Alternative D related to recreation and park services would also be less than significant.

# **Transportation/Traffic**

Alternative D would include the development of a 15-unit single-family subdivision on the project site, 10 fewer units than would be developed under the proposed project. Furthermore, this alternative would result in a reduction in the amount of grading and off-haul trips from the site during construction compared to the proposed project. This DEIR concluded that the proposed project would result in significant impacts related to project-specific construction traffic and cumulative construction traffic, but these impacts could be reduced to less-than-significant levels through implementation of the mitigation measures prescribed in this DEIR. Because this alternative would substantially reduce the number of off-haul trips during grading, Alternative D would reduce the proposed project's significant impacts related to project-specific to a less-than-significant level.

Under Alternative D, the new private main access road would develop sidewalks along the proposed roadway, accommodating pedestrian traffic within the project site and between the project site and the main access road (Bel Aire Road). Similar to the proposed project, impacts related to pedestrian access would be less than significant under Alternative D.

Alternative D would result in the generation of fewer traffic trips than the proposed project. Like the proposed project, this alternative would comply with the required County parking standards, and impacts related to parking accommodations would be less than significant, similar to the proposed project.

Under Alternative D, the new private main access road would be planned. Under this alternative, the new roadway design features (i.e., width, slope, curve, hammerhead turnarounds) would comply with CALFIRE and County design standards and requirements for emergency access. Alternative D would develop fewer lots and streets than the proposed project and impacts related to access and circulation would be less than significant under Alternative D.

### **Utilities & Service Systems**

### Sewer

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, or 26 fewer residents than the proposed project. This DEIR concluded that the

proposed project's impacts related to sewer service (specifically wastewater conveyance infrastructure) would be less than significant with mitigation. Thus, impacts under Alternative D would also be less than significant with mitigation.

# Water

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, or 26 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for water service could be accommodated, and project impacts related to water service would be less than significant. Thus, because Alternative D would consume less water than the proposed project, impacts under Alternative D related to water service would also be less than significant.

# Solid Waste

Alternative D includes development of 15 single-family homes on the project site, 10 fewer homes than the proposed project. The number of potential residents associated with this alternative would be approximately 43, or 26 fewer residents than under the proposed project. This DEIR concluded that the proposed project's demand for landfill capacity could be accommodated, and project impacts related to solid waste would be less than significant. Thus, because Alternative D would generate less solid waste than the proposed project, impacts under Alternative D related to solid waste would also be less than significant.

# Relationship of the Alternative to the Project Objective

Because Alternative D (15 Lots) includes the development of 15 single-family homes (as opposed to 25), this alternative only partially meets the project objectives.

# E. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In addition to the discussion and comparison of impacts of the proposed project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. In this case, Alternative A (No Project/No Build) would result in the least amount of significant However, Section 15126.6 of the CEQA Guidelines requires that an environmental impacts. environmentally superior alternative be selected other than the No Project Alternative in order to attempt to meet project objectives. Based on the alternatives analysis provided above and the Alternatives Comparison table (see Table VI-1), it has been determined that most of the impacts that would occur under Alternative C would be similar to those that would occur under the proposed project. However, given that this alternative would include the development of much fewer single-family homes and much less of the site, the impacts that would occur under the proposed project would occur to a lesser degree under this alternative. Additionally, Alternative C would avoid the significant and unavoidable temporary construction-related air quality impact that would occur under the proposed project. For these reasons, Alternative C is selected as the environmentally superior alternative to the proposed project.

# June 2009

# Table VI-1 Alternatives Comparison

AESTHETICS	Proposed Project	ALTERNATIVE A (No Project/No Build)	ALTERNATIVE B (City of San Mateo Zoning [R1-B District])	ALTERNATIVE C (Large-Lot)	ALTERNATIVE D (15-lot)
Impact AES-1: Scenic Resources	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AES-2: Visual Character	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AES-3: Light & Glare	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AES-4: Temporary Construction/Grading L Impacts	Less than significant	No impact	Less than significant	Less than significant	Less than significant
AIR QUALITY					
Impact AQ-1: Construction/Demolition Emissions Sign	Significant & unavoidable	No impact	Significant & unavoidable	Less than significant	Significant & unavoidable
Impact AQ-2: Regional Emissions – Daily L Emissions of ROG, NOX, and PM <sub>10</sub>	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AQ-3: CO Emissions L	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AQ-4: Odors L	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AQ-5: TACs L	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact AQ-6: GHG and GCC	Less than significant	No impact	Less than significant	Less than significant	Less than significant
BIOLOGICAL RESOURCES					
Impact BIO-1: Special-Status Species					
Special-Status Plant Species	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
Special-Status Wildlife Species	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
Impact BIO-2: Riparian Habitat or other Sensitive L Natural Community	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
GEOLOGY & SOILS					
Impact GEO-1: Strong Seismic Ground Shaking L	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact GEO-2: Landslides & Soil Instabilities L	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
Impact GEO-3: Soil Erosion or Loss of Topsoil	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation

# June 2009

# Table VI-1 (Continued) Alternatives Comparison

Dotatration         Less than significant         No impact         Less than significant         No impact         Less than significant         Less than significant         Less than significant         No impact         Less than significant         Less than significant         Less than significant         No impact         Less than sign	Impact Area	Proposed Project	ALTERNATIVE A (No Project/No Build)	ALTERNATIVE B (City of San Mateo Zoning [R1-B District])	ALTERNATIVE C (Large-Lot)	ALTERNATIVE D (15-lot)
critter Discharge Requirements         Less than significant         No impact         Less than significant         Less than significant <thluss significant<="" th="" than=""> <th< td=""><td>HYDROLOGY &amp; WATER QUALITY</td><td></td><td></td><td></td><td></td><td></td></th<></thluss>	HYDROLOGY & WATER QUALITY					
rth HDRO-2: Ground Water Supplies or Ground         Less than significant           0. IDJO-3: Folicy Forcers         Less than significant & unavoidable         No impact         Less than significant         Less than significant         Less than significant           0. IDJO-3: Folicy Forcers         Less than significant & unavoidable         No impact         Less than significant         Less than significant         Less than significant         Less than significant	Impact HYDRO-1: Violate Water Quality Standards or Waste Discharge Requirements	Less than significant	No impact	Less than significant	Less than significant	Less than significant
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Use & PLANING       Less than significant       No impact       Less than significant       Less than significant         tet LU-1: Division of Community       Less than significant       No impact       Less than significant       Potentially significant         tet LU-2: Policy Inconsistency       Less than significant       No impact       Significant & unavoidable       Significant & unavoidable         tet NOISE-1: Construction Noise       Significant & unavoidable       No impact       Less than significant       Less than significant         tet NOISE-2: Operational Noise       Iss than significant       No impact       Less than significant       Less than significant         tet NOISE-2: Operational Noise       Less than significant       No impact       Less than significant       Less than significant         tet NOISE-2: Operational Noise       Less than significant       No impact       Less than significant       Less than significant         tet NOISE-2: Operational Noise       Less than significant       No impact       Less than significant       Less than significant         tet S-2: Fire Services       Less than significant       No impact       Less than significant       Less than significant         tet S-2: Fire Services       Less than significant       No impact       Less than significant       Less than significant         tet S-3: Wild/fre Hacar	Impact HYDRO-4: Runoff and Exceedance of Storm drain Capacity	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
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VI. Alternatives to the Proposed Project Page VI-36

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# Table VI-1 (Continued) Alternatives Comparison

Impact Area	Proposed Project	ALTERNATIVE A (No Project/No Build)	ALTERNATIVE B (City of San Mateo Zoning [R1-B District])	ALTERNATIVE C (Large-Lot)	ALTERNATIVE D (15-lot)
Impact TRANS-3: Site Access and On-Site Circulation	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
Impact TRANS-4: Parking	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact TRANS-5: Pedestrian Access	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact TRANS-6: Construction Impacts	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
UTILITIES & SERVICE SYSTEMS					
Impact UTIL-1: Wastewater Capacity and Facilities	Less than significant w/mitigation	No impact	Less than significant w/mitigation	Less than significant w/mitigation	Less than significant w/mitigation
Impact UTIL-2: Water Supplies and Entitlements	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact UTIL-3: Solid Waste Capacity and Facilities	Less than significant	No impact	Less than significant	Less than significant	Less than significant
Impact UTIL-4: Federal, State, and Local Statutes and Regulations Related to Solid Waste	Less than significant	No impact	Less than significant	Less than significant	Less than significant

# VII. PREPARERS OF THE EIR AND PERSONS CONSULTED

# PREPARERS OF THE EIR

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San Mateo County, Sheriff's Office Mark Hanlon, Captain

Greg Munks, Sheriff Carlos Bolanos

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San Mateo Foster City School District

Dr. Pendery A. Clark, Superintendent Susan Silver, Associate Superintendent Jan Rosas, Ed.D., Assistant Superintendent

San Mateo Union High School District

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