

December 2016 | Public Review Draft EIR



## **Fire Station 41 (El Granada) Replacement Project EIR**

for the Coastsides Fire Protection District





December 2016  
Public Review Draft EIR

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# **Fire Station 41 (El Granada) Replacement Project EIR**

for the Coastside Fire Protection District

**State Clearinghouse #2015062089**

In Association With:

**Environmental Collaborative**



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# 1. Introduction

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Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Chapter 14 California Code of Regulations, Section 15378[a], the Fire Station 41 (El Granada) Replacement Project is considered a “project” subject to environmental review as its implementation is “an action [undertaken by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.” This Draft Environmental Impact Report (Draft EIR) provides an assessment of the potential environmental consequences of approval and implementation of the Fire Station 41 (El Granada) Replacement Project, herein referred to as “proposed project.” Additionally, this Draft EIR identifies mitigation measures and alternatives to the proposed project that would avoid or reduce significant impacts. This Draft EIR compares the development of the proposed project with the existing baseline condition, described in detail in each section of Chapter 4.0, Environmental Analysis. The Coastside Fire Protection District (CFPD) is the Lead Agency for the proposed project. This assessment is intended to inform the CFPD’s decision-makers, other responsible agencies, and the public-at-large of the nature of the proposed project and its effect on the environment as required by CEQA.

## 1.1 PROPOSED PROJECT

Upon obtaining the requisite approvals and permits, the proposed project would develop approximately 1 acre of the currently undeveloped 2.7-acre narrow project site, currently served by existing utility and roadway infrastructure, with a new 12,425-square-foot Fire Station 41, which would replace the existing 4,000 square-foot fire station located at 531 Obispo Road in El Granada. The project site’s topography is characterized by a downward slope of an average of about 15 percent toward the coast with an elevation that generally decreases from 30 feet to 20 feet above mean sea level (msl) from the northeast to the southwest. A drainage area surrounded by dense riparian habitat, approximately 200 feet in width,<sup>1</sup> is located slightly to the west of the center of the project site. The west side of the project site consists of non-native annual grassland habitat with an unimproved dirt road, west of the drainage area. The east side of the project site consists of non-native annual grassland, as well as 11 trees consisting of a mix of imported trees (i.e., no trees are native to the El Granada area).<sup>2</sup> These trees would be removed as part of the project to allow construction of the proposed fire station.

The proposed project would involve construction of a new 12,425-square-foot, single-story (30-foot maximum height) fire station. The proposed project would also include three apparatus bays that would

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<sup>1</sup> *Coastside Fire Protection District, Riparian Setback Analysis*, TRA Environmental Sciences, Inc., August 7, 2014. A copy of this analysis is included as Appendix C of the Initial Study. The Initial Study is included as Appendix A to this Draft EIR.

<sup>2</sup> A preliminary evaluation of trees was prepared by Kevin R. Kielty, Certified Arborist WE#0476A of Kielty Arborist Services, LLC on Wednesday, May 27, 2015. A copy of this evaluation is included as Appendix A of the Initial Study. The Initial Study is included as Appendix A of this Draft EIR.

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house a Fire Engine, a Truck, and a Heavy Rescue Vehicle with access via Obispo Road. The project includes the installation of an emergency generator, an above ground diesel fuel tank, a flag pole and a communications antenna within secured areas on-site. The project would include native, drought tolerant landscaping and a new curb, gutter and sidewalk along the frontage of the proposed Fire Station 41. Additionally, a total of 16 vehicular parking spaces would be provided on-site, including 13 secured parking spaces for staff, and three public parking spaces, including one accessible parking space.

Once the proposed project is complete, operations at the existing fire station would cease and be relocated to the new Fire Station 41. The parcel may be held by the CFPD or deemed surplus property and sold. Future use of the existing fire station site would be subject to separate environmental review, as needed. Operation of the proposed project is not expected to change beyond existing conditions and would continue to operate with existing staff. A fully staffed shift of fire fighters is commonly known as a company. The proposed Fire Station 41 would be staffed by a three-person company working 2.5 shifts per week. However, as the need for additional fire protection services increases in the future, additional staff would be required and could result in up to one additional company.

The proposed project also includes a minor subdivision to create two lots from the existing 2.7-acre parcel. Proposed Parcel A is for the commercially zoned area of the 2.7-acre parcel and proposed Parcel B is the large remainder of the site that is zoned El Granada Gateway (EG). Parcel B will accommodate the proposed fire station. No specific development of Parcel A is proposed; however, the commercial zoning would allow Neighborhood Business uses in the future. Any future proposed development of Parcel A would be subject to independent CEQA review.

The proposed project is described in more detail in Chapter 3, Project Description, of this Draft EIR.

## 1.2 EIR SCOPE

This document is a project EIR that identifies and analyzes potential environmental impacts of the proposed project. As a project EIR, the environmental analysis primarily focuses on the changes in the environment that would result from the development of the Fire Station 41 (El Granada) Replacement Project. This project EIR examines the specific short-term impacts (construction) and long-term impacts (operation) that would occur as a result of project approval.

The scope of this EIR was established by the Coastside Fire Protection District through the Initial Study scoping process. For a complete listing of environmental topics covered in this Draft EIR, see Chapter 4.0, Environmental Analysis.

## 1.3 ENVIRONMENTAL REVIEW PROCESS

### 1.3.1 DRAFT EIR

An Initial Study was prepared for the proposed project in June 2015. Pursuant to State CEQA Guidelines Section 15063, the Coastside Fire Protection District determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with

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Section 21080.4 of the California Public Resources Code, the CFPD circulated the Initial Study and Notice of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research (OPR) State Clearinghouse and interested agencies and persons on June 30, 2015 for a 30-day review period. The NOP solicited comments from identified responsible and trustee agencies, as well as interested parties regarding the scope of the Draft EIR. Appendix A of this Draft EIR contains the Initial Study and Appendix B includes the NOP as well as the comments received by the CFPD in response to the NOP.

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for the period identified in the Notice of Availability attached to the front of this document. During the comment period, the public is invited to submit or e-mail written comments on the Draft EIR and/or requested entitlements to the Coastside Fire Protection District. Written comments should be submitted to:

Paul Cole, Assistant Chief  
Coastside Fire Protection District  
1191 Main Street  
Half Moon Bay, CA 94019  
Phone: (650) 726-5213  
Email: paul.cole@fire.ca.gov

### 1.3.2 FINAL EIR

Upon completion of the public review period, the Coastside Fire Protection District will review all written comments received and prepare written responses for each comment. A Final EIR will then be prepared, incorporating all of the comments received, responses to the comments, and any changes to the Draft EIR that result from the comments received. The Final EIR will then be presented to the Coastside Fire Protection District for potential certification as the environmental document for the proposed project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR.

All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to final action on the proposed project. The Final EIR will need to be certified by the CFPD and findings will need to be made regarding the extent and nature of the impacts presented in the Final EIR prior to making a decision to approve or deny the proposed project.

Upon certification of the EIR by the CFPD, the CFPD may then consider the proposed project itself, which it may approve, deny, or approve with conditions. The CFPD may require the mitigation measures specified in this Draft EIR as conditions of project approval, and it may also require other feasible mitigation measures. Alternately, the CFPD may find that the mitigation measures are outside the jurisdiction of the CFPD to implement, or that there are no feasible mitigation measures for a given significant impact. In the latter case, the CFPD may nonetheless determine that the proposed project is necessary or desirable due to specific overriding considerations, including economic factors, and may approve the proposed project despite an unavoidable, significant impact.

Upon certification of the EIR by the CFPD, the County of San Mateo may consider the required land use permits, including the Coastal Development Permit, for the proposed project including the minor subdivision, which it may approve, deny, or approve with conditions. San Mateo County's decision on the required Coastal Development Permit for the project is appealable to the Coastal Commission.



## **INTRODUCTION**

### **1.3.3 MITIGATION MONITORING**

Public Resources Code Section 21081.6 requires that the lead agency adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR. The Mitigation Monitoring and Reporting Program for the proposed project will be completed as part of the Final EIR.

## 2. Executive Summary

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This chapter presents an overview of the proposed Fire Station 41 (El Granada) Replacement Project, herein referred to as “proposed project.” This executive summary also provides a summary of the alternatives to the proposed project, identifies issues to be resolved, areas of controversy, and conclusions of the analysis contained in Chapters 4.1 through 4.6 of this Draft Environmental Impact Report (Draft EIR). For a complete description of the proposed project, see Chapter 3, Project Description, of this Draft EIR. For a discussion of alternatives to the proposed project, see Chapter 5, Alternatives to the Proposed Project, of this Draft EIR.

This Draft EIR addresses the environmental effects associated with the implementation of the proposed project. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report is a public document designed to provide the public and local and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making.

This Draft EIR has been prepared pursuant to the requirements of CEQA (California Public Resources Code, Division 13, Section 21000, et seq.) and the State CEQA Guidelines (Title 14 of the California Code of Regulations, Division 6, Chapter 3, Section 15000, et seq.) to determine if approval of the identified discretionary actions and related subsequent development could have a significant impact on the environment. The Coastside Fire Protection District (CFPD), as the Lead Agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable CFPD technical personnel and review of all technical subconsultant reports. Information for this Draft EIR was obtained from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, greenhouse gas emissions, noise, geotechnical and transportation and circulation).

### 2.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. The main purposes of this document as established by CEQA are:

- To disclose to decision-makers and the public the significant environmental effects of proposed activities.
- To identify ways to avoid or reduce environmental damage.
- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.

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- To disclose to the public reasons for agency approval of projects with significant environmental effects.
- To foster interagency coordination in the review of projects.
- To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in the statutes and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and must adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

### 2.1.1 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- **Chapter 1: Introduction.** Describes the purpose of this Draft EIR, background on the proposed project, the Notice of Preparation (NOP), the use of incorporation by reference, and Final EIR certification.
- **Chapter 2: Executive Summary.** Summarizes the background and description of the proposed project, the format of this Draft EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the proposed project.
- **Chapter 3: Project Description.** A detailed description of the proposed project location and the environmental setting on and surrounding the project site, the proposed project, the objectives of the proposed project, approvals anticipated being included as a part of proposed project, the necessary environmental clearance for the proposed project, and the intended uses of this EIR.
- **Chapter 4: Environmental Analysis.** Organized into six sub-chapters corresponding to the environmental resource categories identified in Appendix G, Environmental Checklist, and Appendix F, Energy Conservation, of the CEQA Guidelines, this chapter provides a description of the physical environmental conditions in the vicinity of the proposed project as they existed at the time the Notice of Preparation (NOP) was published, from both a local and regional perspective, as well as an analysis of the potential environmental impacts of the proposed project, and recommended mitigation measures, if required, to reduce their significance. The environmental setting included in each sub-chapter provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the proposed project. Each sub-chapter also includes a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the proposed project; and the potential cumulative impacts associated with the proposed project.



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- **Chapter 5: Alternatives to the Proposed Project.** Considers three alternatives to the proposed project, including the CEQA-required “No Project” alternative.
- **Chapter 6: CEQA-Mandated Sections.** Discusses growth inducement, cumulative impacts, unavoidable significant effects, and significant irreversible changes as a result of the proposed project. Additionally, this chapter identifies environmental issues with no impacts pursuant to CEQA Guidelines Section 15128.
- **Chapter 7: Organizations and Persons Consulted.** Lists the people and organizations that were contacted during the preparation of this EIR for the proposed project.
- **Appendices:** The appendices for this document (presented in PDF format on a CD attached to the back cover) contain the following supporting documents:
  - Appendix A: Initial Study
  - Appendix B: Notice of Preparation and Scoping Comments
  - Appendix C: Air Quality and Greenhouse Gas Data
  - Appendix D: Health Risk Assessment
  - Appendix E: Tsunami Zone Study, Standard Operating Procedures, and California Coastal Commission Letter
  - Appendix F: Noise Monitoring Data
  - Appendix G: Geotechnical Data

### 2.1.2 TYPE AND PURPOSE OF THIS DRAFT EIR

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

*Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.*

As described in the CEQA Guidelines, different types of EIRs are used for varying situations and intended uses. Given the short-term nature of the construction phase of the proposed project and the permitting and development actions that are related both geographically and as logical parts in the chain of contemplated actions for implementation, this Draft EIR has been prepared as a project EIR, pursuant to Section 15161 of the CEQA Guidelines. As a project EIR, the environmental analysis will focus primarily on the changes in the environment that would result from the development of the Fire Station 41 (El Granada) Replacement Project. This project EIR will examine the specific short-term impacts (construction) and long-term impacts (operation) that would occur as a result of the proposed project.

## 2.2 SUMMARY OF THE PROPOSED PROJECT

The CFPD proposes to construct a new Fire Station 41 (El Granada) that includes a new 12,425-square-foot, single-story, 3-bay fire station on an undeveloped 2.7-acre split-zoned parcel in El Granada. The site is located approximately 300 feet north of the Pacific Ocean, east of Hwy 1 and is bounded by Avenue Alhambra to the north, Coronado Street to the east, Obispo Road to the south, and Avenue Portola to the west. The project site is undeveloped and there are no existing driveways; however, the site is accessible

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via Obispo Road, Avenue Alhambra, and Avenue Portola. A more detailed description of the site can be found in Chapter 3, Project Description, Section 3.2, Project Site Location and Site Characteristics.

The Fire Station 41 (El Granada) Replacement Project (proposed project) would serve to replace the existing Fire Station 41 located at 531 Obispo Road, approximately 600 feet to the west of the project site, with new facilities that are safe, modern, and adequately sized to allow the CFPD to provide for current and future service demands for the next 50 years. The project includes installation of an emergency generator, an above ground diesel fuel tank within secured areas a flag pole and communications antenna. The project would include native, drought tolerant landscaping and may include a new curb, gutter, and sidewalk along the frontage of the proposed Fire Station 41. Additionally, a total of 16 vehicular parking spaces would be provided on-site, including 13 secured parking spaces for staff, and three public parking spaces. Once the proposed project is complete, operations at the existing fire station would cease. Operation of the new Fire Station 41 is not expected to change beyond existing conditions—it is expected to continue with the same staff and the same staffing levels as the existing Fire Station 41, which is staffed by three fire fighters working at a time.

The proposed project also includes a minor subdivision to create two lots from the existing 2.7-acre parcel. Proposed Parcel A is for the commercially zoned area of the 2.7-acre parcel and proposed Parcel B is the large remainder of the site that is zoned El Granada Gateway (EG). Parcel B will accommodate the proposed fire station. No specific development of Parcel A is proposed; however, the commercial zoning would allow Neighborhood Business uses in the future. Any future proposed development of Parcel A would be subject to independent CEQA review. The proposed project is described in more detail in Chapter 3, Project Description, of this Draft EIR.

## 2.3 SUMMARY OF ALTERNATIVES TO THE PROPOSED PROJECT

This Draft EIR analyzes alternatives to the proposed project that are designed to reduce the significant environmental impacts of the proposed project and feasibly attain some of the proposed project objectives. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Identification of the environmentally superior alternative involves weighing and balancing all of the environmental resource areas by the CFPD. The following alternatives to the project were considered and analyzed in detail:

- No Project Alternative
- Relocated Site Alternative
- Modified Site Plan Alternative

Chapter 5, Alternatives to the Proposed Project, of this Draft EIR, includes a complete discussion of these alternatives and of alternatives that were considered but not carried forward for detailed analysis. As discussed in Chapter 5, the Relocated Site Alternative would be the environmentally superior alternative.

## 2.4 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the Coastside Fire Protection District, as Lead Agency, related to:

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- Whether this Draft EIR adequately describes the environmental impacts of the project.
- Whether the proposed land use changes are compatible with the character of the existing area.
- Whether the identified mitigation measures should be adopted or modified.
- Whether there are other mitigation measures that should be applied to the project besides those Mitigation Measures identified in the Draft EIR.
- Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

## 2.5 AREAS OF CONTROVERSY

The Coastsides Fire Protection District issued a Notice of Preparation for the EIR on June 30, 2015 and held a scoping meeting on July 16, 2015 to receive scoping comments. During the 30-day scoping period for this EIR, which concluded on July 29, 2015, responsible agencies and interested members of the public were invited to submit comments as to the scope and content of the EIR. The comments received focused primarily on the following issues:

- Aesthetic impacts related to views of the Pacific Ocean
- Biological impacts from proximity to the riparian habitat
- Noise impacts from operation of a fire station
- Traffic and circulation impacts
- Tsunami related impacts

Comments received during the public scoping period, including those received at the July 16 scoping meeting, are included in Appendix B, Notice of Preparation and Scoping Comments, of this Draft EIR. A comment letter received outside the public scoping period from Grenada Community Services District (dated October 21, 2016) is also included in Appendix B.

To the extent that these issues have environmental impacts and to the extent that analysis is required under CEQA, they are addressed in Chapters 4.1 through 4.6 of this Draft EIR. Additionally, many of the comments received during the scoping period concerned topics outside of the purview of the analysis required under CEQA. As such, those comments will be addressed by CFPD staff during the entitlement process for the proposed project, and therefore are excluded from this Draft EIR.

## 2.6 IMPACTS FOUND NOT TO BE SIGNIFICANT BY INITIAL STUDY

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

An Initial Study was prepared for the project, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines (see Appendix A, Initial Study, of this Draft EIR). Based on the analysis in the Initial Study and due to existing conditions on the project site and surrounding area it was

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determined that development of the proposed project would not result in significant environmental impacts for the following topic areas and therefore, impacts related to these topics are not analyzed further in this Draft EIR:

- Agricultural and Forestry Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Additionally, based on the analysis in the Initial Study it was determined that development of the proposed project would not result in significant environmental impacts under a number of the significance criteria presented in Appendix G in the following topic areas and therefore, impacts related to these criteria are not analyzed further in this Draft EIR:

- Aesthetics
  - Substantially damage scenic resources, including but not limited to, tree, outcroppings, and historic buildings within a State scenic highway.
- Air Quality
  - Conflict with or obstruct implementation of the applicable air quality plan.
  - Create objectionable odors affecting a substantial number of people.
- Biological Resources
  - Interfering 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.
  - Conflicting with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- Hydrology and Water Quality
  - Violate any water quality standards or waste discharge requirements.
  - Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a significant lowering of the local groundwater table level.
  - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

## EXECUTIVE SUMMARY

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.
- Otherwise substantially degrade water quality.
- 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, or place structures that would impede or redirect flood flows within a 100-year flood hazard area.
- 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.
- Noise
  - Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.
  - Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
  - Expose people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.
- Transportation and Circulation
  - Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
  - Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
  - Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
  - Result in inadequate emergency access.

## 2.7 POTENTIAL SIGNIFICANT IMPACTS ADDRESSED IN THE EIR

This section identifies areas of potentially significant environmental impacts that were determined to require analysis based on the Initial Study, described above in Section 2.6, and included in Appendix A of this Draft EIR.

## EXECUTIVE SUMMARY

- Aesthetics
  - Result in a substantial adverse effect on a scenic vista.
  - Substantially degrade the existing visual character or quality of the site and its surroundings.
  - Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.
- Air Quality
  - 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 area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
  - Expose sensitive receptors to substantial pollutant concentrations.
- Biological Resources
  - Result in 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 U.S. Fish and Wildlife Service.
  - Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.
- Hydrology and Water Quality
  - Place within a 100-year flood hazard area structures, which would impede or redirect flood flows or be impacted by sea level rise.
  - Inundation by seiche, tsunami, or mudflow.
- Noise
  - Expose people to or generate excessive groundborne vibration or ground borne noise levels.
  - Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Transportation and Circulation
  - Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
  - Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Table 2-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Chapter 4.0 through 4.6. The table is arranged in four columns: 1)

## EXECUTIVE SUMMARY

impact statement; 2) significance prior to mitigation; 3) mitigation measures; and 4) significance after mitigation. A narrative summary of potential impacts as a result of the project and mitigation measures to reduce those impacts to a less than significant level follows is described below; however, for a complete description of potential impacts, please refer to the specific discussions in Chapters 4.1 through 4.6.

During construction of the proposed project, construction activities would generate fugitive dust during ground-disturbing activities and would generate substantial construction-related exhaust emissions from on-site construction equipment and on-road vehicle trips that exceeds the Bay Area Air Quality Management District (BAAQMD) significance thresholds; additionally, construction of the proposed project would cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin (SFBAAB) and could expose sensitive receptors to substantial concentrations of TAC and PM<sub>2.5</sub>. As such, the project shall require their construction contractor to comply with BAAQMD Best Management Practices for reducing construction emissions of PM<sub>10</sub> and PM<sub>2.5</sub>, and use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) and engines that meet the United States Environmental Protection Agency (USEPA) Certified Tier 3 emissions standards for all equipment of 25 horsepower or more.

The proposed project could result in an inadvertent take of individual California red-legged frog or San Francisco garter snake in the remote instance that individuals were to disperse onto the site in the future, which would be a violation of the Endangered Species Act if adequate controls and preconstruction surveys are not implemented. As such, measures shall be implemented as recommended in the 2015 Preliminary Environmentally Sensitive Habitat Area Assessment, including a wildlife exclusion fence, pre-construction survey, conduct earth-disturbing activities only during dry weather, biological monitoring, and erosion control materials. In addition, there is a remote possibility that mature trees and areas of dense cover could be used for nesting by raptors and more common bird species. Therefore, the proposed project could result in inadvertent loss of bird nests in active use, which would conflict with the federal Migratory Bird Treaty Act and California Fish and Game Code if adequate controls and preconstruction surveys are not implemented. As such, tree removal, landscape grubbing, and building demolition shall be performed in compliance with the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code to avoid loss of nests in active use.

## EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
<b>AESTHETICS</b>			
AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	N/A
AES-2: The proposed project would not degrade the existing visual character or quality of the site and its surroundings.	LTS	N/A	N/A
AES-3: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	N/A	N/A
AES-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less than significant cumulative impacts with respect to aesthetics.	LTS	N/A	N/A
<b>AIR QUALITY</b>			
AIR-1: During construction of the project, construction activities would generate fugitive dust during ground-disturbing activities and would generate substantial construction-related exhaust emissions from on-site construction equipment and on-road vehicle trips that exceeds the BAAQMD significance thresholds identified in Table 4.2-5.	S	<p>AIR-1: The Applicant shall require their construction contractor to comply with the following BAAQMD Best Management Practices for reducing construction emissions of PM<sub>10</sub> and PM<sub>2.5</sub>:</p> <ul style="list-style-type: none"> <li>Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.</li> <li>Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.</li> <li>Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).</li> <li>Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads (e.g., Obispo Road, Avenue Alhambra, and Coronado Road), parking areas, and staging areas at the construction site to control dust.</li> <li>Sweep public streets daily (with water sweepers using reclaimed water if</li> </ul>	LTS

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable



## EXECUTIVE SUMMARY

**TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		<p>possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.</p> <ul style="list-style-type: none"> <li>▪ Hydro-seed 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 (e.g., dirt, sand).</li> <li>▪ Limit vehicle traffic speeds on unpaved roads to 15 mph.</li> <li>▪ Replant vegetation in disturbed areas as quickly as possible.</li> <li>▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways.</li> </ul> <p>The County of San Mateo Planning and Building Official or their designee shall verify compliance that these measures have been implemented during normal construction site inspections.</p>	
AIR-2: Construction of the proposed project would cumulatively contribute to the non-attainment designations of the SFBAAB.	S	AIR-2: Implementation of Mitigation Measures AIR-1 and AIR-3 would reduce cumulative air quality impacts.	LTS
AIR-3: Construction activities of the project could expose sensitive receptors to substantial concentrations of TAC and PM <sub>2.5</sub> .	S	<p>AIR-3: During construction, the construction contractor(s) shall use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) and engines that meet the USEPA Certified Tier 3 emissions standards for all equipment of 25 horsepower or more.</p> <p>The construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the County of San Mateo Building Division official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations. The construction contractor shall ensure that all non-essential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board Rule 2449. Prior to issuance of any construction permit, the construction contractor shall ensure that all construction plans submitted to the County of San Mateo Planning Division and/or Building Division clearly show the requirement for Level 3 DPF and USEPA Tier 3 or higher emissions standards for construction equipment over 25 horsepower.</p>	LTS
AIR-4: Implementation of the project would cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.	S	AIR-4: Implementation of Mitigation Measures AIR-1 and AIR-3 would reduce cumulative air quality impacts.	LTS

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable

## EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
<b>BIOLOGICAL RESOURCES</b>			
BIO-1a: Proposed development could potentially result in an inadvertent take of individual CLRF or SFGS in the remote instance that individuals were to disperse onto the site in the future, in which case this could result in a potential violation of the Endangered Species Acts if adequate controls and preconstruction surveys are not implemented.	S	<p>BIO-1a: Ensure Avoidance of California Red-legged Frog and San Francisco Garter Snake. The following measures shall be implemented as recommended in the 2015 Preliminary Environmentally Sensitive Habitat Area Assessment of the site to ensure avoidance of individual California red-legged frog (CRLF) or San Francisco garter snake (SFGS) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction:</p> <ul style="list-style-type: none"> <li>▪ <i>Wildlife exclusion fence:</i> Wildlife exclusion fencing shall be installed prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall, at a minimum, run along the proposed project boundaries with riparian habitat and for a distance of at least 100 feet perpendicular to riparian habitat. Silt fence material may be used to also provide erosion control, however, per CRLF and SFGS fence standards, it must be at least 42 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be placed on the inside of the project (side on which work will take place).</li> <li>▪ <i>Pre-construction survey:</i> Pre-construction surveys for CRLF and SFGS shall be conducted prior to initiation of project activities including fence installation) and within 48 hours of the start of ground disturbance activities following completion of exclusion fence installation. Surveys are to be conducted by approved qualified biologists with experience surveying for each species. If project activities are stopped for greater than 7 days, a follow-up pre-construction survey may be required within 48 hours prior to reinitiating project activities.</li> <li>▪ <i>Earth Disturbing Activities only during dry weather:</i> No earth disturbing activities shall take place during rain events when there is potential for accumulation greater than 0.25-inch in a 24-hour period. In addition, no earth disturbing activities shall occur for 48 hours following rain events in which 0.25 inch of rain accumulation within 24 hours.</li> <li>▪ <i>Biological monitoring:</i> An approved biologist shall be required to inspect and approve installation of the exclusion fence.</li> <li>▪ <i>Erosion Control Materials:</i> Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians and reptile species do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.</li> </ul>	LTS

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable

## EXECUTIVE SUMMARY

**TABLE 2-1      SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO-1b: Proposed development could potentially result in inadvertent loss of bird nests in active use, which would conflict with the federal Migratory Bird Treaty Act and California Fish and Game Code if adequate controls and preconstruction surveys are not implemented.	S	<p>BIO-1b: Ensure Avoidance of Bird Nests in Active Use. Tree removal, landscape grubbing, and building demolition shall be performed in compliance with the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code to avoid loss of nests in active use. This shall be accomplished by scheduling building demolition, tree removal and landscape grubbing outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds if new nests are established in the future. Alternatively, if building demolition, tree removal and landscape grubbing cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The pre-construction nesting survey shall include the following:</p> <ul style="list-style-type: none"> <li>▪ A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within seven calendar days prior to tree removal, landscape grubbing, and/or building demolition.</li> <li>▪ If no nesting birds or active nests are observed, no further action is required and tree removal, landscape grubbing, and building demolition shall occur within seven calendar days of the survey.</li> <li>▪ Another nest survey shall be conducted if more than seven calendar days elapse between the initial nest search and the beginning of tree removal, landscape grubbing, and building demolition.</li> <li>▪ If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the California Department of Fish and Wildlife.</li> <li>▪ Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone.</li> <li>▪ No restrictions on grading or construction activities outside the prescribed buffer zone are required once the zone has been identified and delineated in the field and workers have been properly trained to avoid the buffer zone area.</li> </ul>	LTS

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable

## EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		<ul style="list-style-type: none"> <li>Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed.</li> <li>A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the County of San Mateo prior to initiation of any tree removal, landscape grubbing, building demolition, and other construction activities within the buffer zone. Following written approval by the County, tree removal, and construction within the nest-buffer zone may proceed.</li> </ul>	
BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.	LTS	N/A	N/A
BIO-3: The proposed project would not 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.	LTS	N/A	N/A
BIO-4: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	N/A	N/A
BIO-5: The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in less than significant cumulative impacts with respect to biological resources.	LTS	N/A	N/A
<b>HYDROLOGY AND WATER QUALITY</b>			
HYDRO-1: The proposed project would not place within a 100-year flood hazard area structures which would impede or redirect flood flows or be impacted by future sea level rise.	No Impact	N/A	N/A

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable

## EXECUTIVE SUMMARY

**TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HYDRO-2: The proposed project would not be subject to inundation by a seiche or mudflow, and is unlikely to be inundated by a tsunami.	LTS	N/A	N/A
HYDRO-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to hydrology and water quality.	LTS	N/A	N/A
<b>NOISE</b>			
NOISE-1: The proposed project would not have the potential to expose people to or generate excessive groundborne vibration or groundborne noise levels.	LTS	N/A	N/A
NOISE-2: Construction activities associated with buildout of the proposed project would not result in substantial temporary or periodic increases in ambient noise levels in the vicinity of the project site above existing levels.	LTS	N/A	N/A
NOISE-3: This proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less than significant impacts with respect to noise.	LTS	N/A	N/A
<b>TRANSPORTATION AND CIRCULATION</b>			
TRANS-1: The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A
TRANS-2: The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	LTS	N/A	N/A
TRANS-3: The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to transportation and traffic.	LTS	N/A	N/A

LTS = Less than Significant LTS/M = Less than Significant with Mitigation SU = Significant and Unavoidable

## **EXECUTIVE SUMMARY**

### 3. *Project Description*

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The Coastside Fire Protection District (CFPD) proposes construction of a new Fire Station 41 (El Granada) that includes a new 12,425-square-foot, single-story, three-apparatus bay fire station on an undeveloped 2.7-acre split-zoned parcel in El Granada. The Fire Station 41 (El Granada) Replacement Project (proposed project) would serve to replace the existing 4,000-square-foot aging approximately 50-year-old Fire Station 41 located at 531 Obispo Road, approximately 600 feet to the west of the project site. The proposed Fire Station 41 will provide facilities that are safe, modern, and adequately sized to allow the CFPD to provide for current and future service demands for the next 50 years, which the existing Fire Station 41 is not capable of providing. In addition to the construction of the proposed fire station, CFPD is requesting a minor subdivision to divide the project site into two parcels—one for each zoning district on the property. One parcel (Parcel A), consisting of the westernmost 0.31-acre (13,575 square feet) portion of the site zoned Neighborhood Business (C-1 /S-3 /DR) is not proposed for development. The second parcel (Parcel B), consisting of the remaining 2.38-acre portion of the site zoned El Granada Gateway (EG), would contain the proposed new Fire Station 41.

This chapter provides a detailed description of the project, including the location, setting, and characteristics of the project site, project objectives, principal project features, and approximate construction schedule, as well as required permits and approvals. Additional descriptions of the environmental setting as they relate to each of the environmental issues analyzed in Chapter 4, Environmental Assessment, of this Draft EIR are included in the environmental setting discussions contained within Chapters 4.1 through 4.6.

#### 3.1 PROJECT BACKGROUND

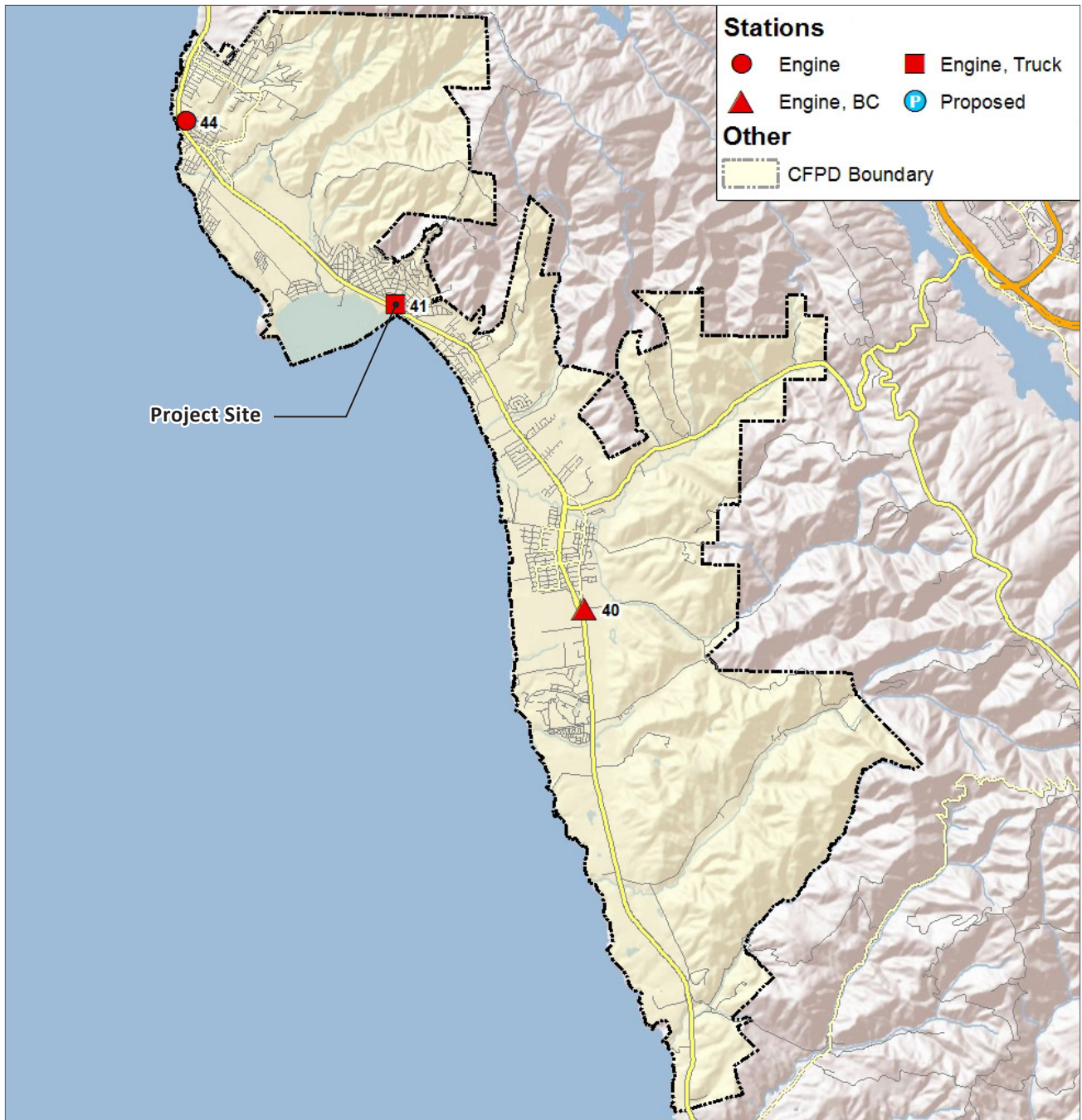
The CFPD provides fire protection services for the City of Half Moon Bay and the communities of Montara, Moss Beach, Princeton, El Granada, and Miramar, in addition to surrounding unincorporated areas. The CFPD service area spans 50 square miles and serves a population of 30,000 residents using three strategically placed fire stations to provide emergency services. Fire Station 40 is located south of the project site in Half Moon Bay, Fire Station 41 is currently located at 531 Obispo Road, and Fire Station 44 is located north of the project site within the Moss Beach Area. Figure 3-1 shows the CFPD service area.

On February 19, 2014, a Fire Station Relocation Study<sup>1</sup> (Relocation Study) was prepared for the CFPD to evaluate its response time coverage options for replacing two existing and aging fire stations, which includes the existing Fire Station 41. The existing Fire Station 41 is located on a 110 foot X 120 foot 12,455 square foot parcel at 531 Obispo Road, El Granada and is approximately 50 years old. According to the Relocation Study, the existing fire station is too small to meet near-term needs of the CFPD. Further, a

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<sup>1</sup> The Fire Station Relocation Study is included as Appendix B of the Initial Study. The Initial Study and its appendices are included as Appendix A of this Draft EIR.

## PROJECT DESCRIPTION



Source: Coastsid Fire Protection District Map 1: General Geography.



Figure 3-1  
Coastsid Fire Protection District Service Area



## PROJECT DESCRIPTION

facility assessment found that it would not be cost-effective to substantially remodel the existing station given that the station is on too small of a parcel and is too close or adjacent to existing residential<sup>2</sup> development to be able to modify the existing station to be able to sufficiently accommodate larger firefighting apparatus. Currently, trucks must be backed into the station which presents logistic and safety challenges. Newer stations including the proposed project are designed with doors on both sides, allowing trucks to drive through.

Further, in 1986, the California Legislature determined that buildings providing essential services should be capable of providing those services to the public after a disaster. The intent in this regard was defined in legislation known as the Essential Services Buildings Seismic Safety Act of 1986 (Seismic Safety Act) and includes requirements that such buildings shall be "designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds." The existing Fire Station 41 was not designed as an Essential Service Facility pursuant to the Essential Services Buildings Seismic Safety Act,<sup>3</sup> and is not capable of withstanding a significant seismic event, which could render it inoperable. Therefore, a new fire station is required to be constructed in compliance with the most up to date building and seismic safety codes in order to comply with the Seismic Safety Act of 1986.

Although existing operations of the fire station is not expected to increase in the near future, long term increases in residential and visitor populations over the next 50 years would result in increased demand for additional fire protection and public safety services. Therefore, a new fire station would allow for the CFPD to adequately serve future populations by providing space for new fire apparatus and sufficient accommodations to house additional firefighting staff if and when required.

Further, the CFPD conducted an evaluation of its response time coverage options for replacing the aging Fire Station 41 in El Granada. Based on the analysis in the evaluation, the CFPD determined that the response times in the central District service area currently served by the existing Fire Station 41 can be maintained, or slightly improved, if the current Fire Station 41 was relocated to a new site in the same general vicinity as the existing site.<sup>4</sup>

If the project is approved, then a determination for the future use of the existing Fire Station 41 can be made. Upon completion of the project, operation of the existing Fire Station 41 would cease and the parcel may be held by the CFPD or deemed surplus property and sold. The existing fire station parcel is zoned Neighborhood Business District/Design Review/Coastal Development (C-1/S-3/DR/CD). Uses allowed within this designation may include automobile service stations, bakeries, banks, bars, barber

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<sup>2</sup> Citygate Associates, LLC, Fire Station Relocation Study for the Coastsides Fire Protection District, Volume 1 of 2, February 19, 2014, page 1.

<sup>3</sup> In 1986, the California Legislature determined that buildings providing essential services should be capable of providing those services to the public after a disaster. Their intent in this regard was defined in legislation known as the Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds." The Essential Services Buildings Seismic Safety Act California Health and Safety Code, Chapter 2, sections 16000 through 16022, and the California Building Code defines how the intent of the Act is to be implemented in Title 24, Part 1 of the California Building Standards Administrative Code, Chapter 4, Articles 1 through 3. [http://www.cab.ca.gov/general\\_information/esbssa/](http://www.cab.ca.gov/general_information/esbssa/), accessed June 18, 2015.

<sup>4</sup> Fire Station Replacement Location Analysis, Coastsides Fire Protection District, Citygate Associates, LLC, Fire Emergency Services, January 23, 2013. This is included as Appendix A, Initial Study, of this Draft EIR.

## PROJECT DESCRIPTION

shops, confectionery stores, gift shops, restaurants, and cafes.<sup>5</sup> As such, future development of the existing fire station parcel could include any one of or combination of these types of uses. However, because the future of the existing fire station parcel is unknown, it would be speculative to determine what type of development or use would occur. Therefore, future development of the existing fire station site would be subject to separate environmental review, as needed.

## 3.2 PROJECT SITE LOCATION AND SITE CHARACTERISTICS

The following provides an overview of the location, existing character, and general plan land use and zoning designation of the project site.

### 3.2.1 REGIONAL LOCATION

As shown on Figure 3-2, the project site is in El Granada, an unincorporated community in the northern coastal area of San Mateo County. The project site is located 3 miles northwest of Half Moon Bay, 8 miles southeast of Pacifica, and 18 miles south of San Francisco. Regional access is provided via Cabrillo Highway (Highway 1), located to the south of the project site.

### 3.2.2 LOCAL SETTING

The approximately 2.7-acre project site is situated in the developed area of El Granada, approximately 300 feet north of the Pacific Ocean and 600 feet away from the existing Fire Station 41 located at 331 Obispo Road. The project site is located east of Hwy 1 and is bounded by Avenue Alhambra to the north, Coronado Street to the east, Obispo Road to the south, and Avenue Portola to the west. The project site is undeveloped and there are no existing driveways; however, the site is accessible via Obispo Road, Avenue Alhambra, and Avenue Portola.

### 3.2.3 EXISTING SITE CHARACTER

#### 3.2.3.1 EXISTING CONDITIONS

As shown on Figure 3-3, the approximately 2.7-acre project site is currently an undeveloped narrow parcel of land served by existing utility and roadway infrastructure. The project site's topography is characterized by a downward slope of an average of about 15 percent toward the coast with an elevation that generally decreases from 30 feet to 20 feet above mean sea level (msl) from the northeast to the southwest. A drainage area surrounded by dense riparian habitat, approximately 200 feet in width,<sup>6</sup> is located slightly to the west of the center of the project site. The west side of the project site consists of non-native annual grassland habitat with an unimproved dirt road, west of the drainage area. The east side of the project site consists of non-native annual grassland, as well as 11 trees consisting of a mix of imported

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<sup>5</sup> San Mateo County, Zoning Regulations, December 2012, Chapter 15 "C-1" Districts (Neighborhood Business Districts), pages 15.1-15.2

<sup>6</sup> *Coastside Fire Protection District, Riparian Setback Analysis*, TRA Environmental Sciences, Inc., August 7, 2014. A copy of this analysis is included as Appendix C of the Initial Study. The Initial Study is included as Appendix A to this Draft EIR.

## PROJECT DESCRIPTION



Source: ESRI, 2015. PlaceWorks, 2015.

Figure 3-2  
Regional and Local Location



## PROJECT DESCRIPTION



Figure 3-3  
Existing Project Site

## PROJECT DESCRIPTION

trees (i.e., no trees are native to the El Granada area).<sup>7</sup> These 11 trees will be removed as part of the project to allow construction of the proposed fire station.

### 3.2.3.2 SURROUNDING LAND USES

As shown on Figure 3-3, land uses surrounding the project site consist of single- and multi-family residential uses to the north, and commercial uses to the west and northwest. To the east, directly across Coronado Street, is the Wilkinson School, a private K to 8<sup>th</sup> grade school. To the south is an undeveloped area of land that is covered with similar vegetation as that of the project site and is partially used as informal and unimproved parking area for beachgoers. The El Granada Elementary School, a Cabrillo Unified School District-K through 5<sup>th</sup> grade school, is located 500 feet (0.10-mile) from the southeast border of the project site.

### 3.2.4 GENERAL PLAN LAND USE DESIGNATION AND ZONING

The approximately 2.7-acre project site is designated Assessor's Parcel Number (APN) 047-261-030 and is within the land use planning jurisdiction of San Mateo County. As shown on Figure 3-4, the project site has two General Plan and Local Coastal Plan land use designations and County zoning districts that are discussed below.<sup>8</sup> The project proposes to remedy this split zoning through a minor subdivision that would create two parcels, as shown in Figure 3-5. Parcel A would consist of the approximately 13,575-square-foot westernmost portion of the property currently designated Neighborhood Commercial Urban and zoned Neighborhood Business District/Design Review/Coastal Development (C-1/S-3/DR/CD); (2) Parcel B would consist of the remaining 2.4-acre portion of the property designated as Open Space with Park Overlay Urban and zoned El Granada Gateway/Design Review/Coastal Development (EG/DR/CD). Parcel B would contain the proposed new Fire Station 41. Parcel A is not proposed for development.

#### 3.2.4.1 PROPOSED PARCEL A

The westernmost portion of the project site, consisting of approximately 13,575 square feet, at the Avenue Portola/Obispo Road intersection (across Avenue Portola from the existing Fire Station 41), is designated Neighborhood Commercial Urban and is zoned Neighborhood Business District/Design Review/Coastal Development (C-1/S-3/DR/CD).

According to the San Mateo County General Plan, the Neighborhood Commercial Designation is intended to provide shopping, meeting and convenience services to surrounding residents. Uses allowed on this portion of the project site may include automobile service stations, bakeries, banks, bars, barber shops, confectionery stores, gift shops, restaurants, and cafes.<sup>9</sup> No development is proposed on this portion of

<sup>7</sup> A preliminary evaluation of trees was prepared by Kevin R. Kielty, Certified Arborist WE#0476A of Kielty Arborist Services, LLC on Wednesday, May 27, 2015. A copy of this evaluation is included as Appendix A of the Initial Study. The Initial Study is included as Appendix A of this Draft EIR.

<sup>8</sup> San Mateo County, San Mateo Planning and Building Department GIS Website, <http://maps.smcgov.org/planning/>, accessed May 21, 2015.

<sup>9</sup> San Mateo County, Zoning Regulations, December 2012, Chapter 15 "C-1" Districts (Neighborhood Business Districts), page 15.1-15.2



## PROJECT DESCRIPTION



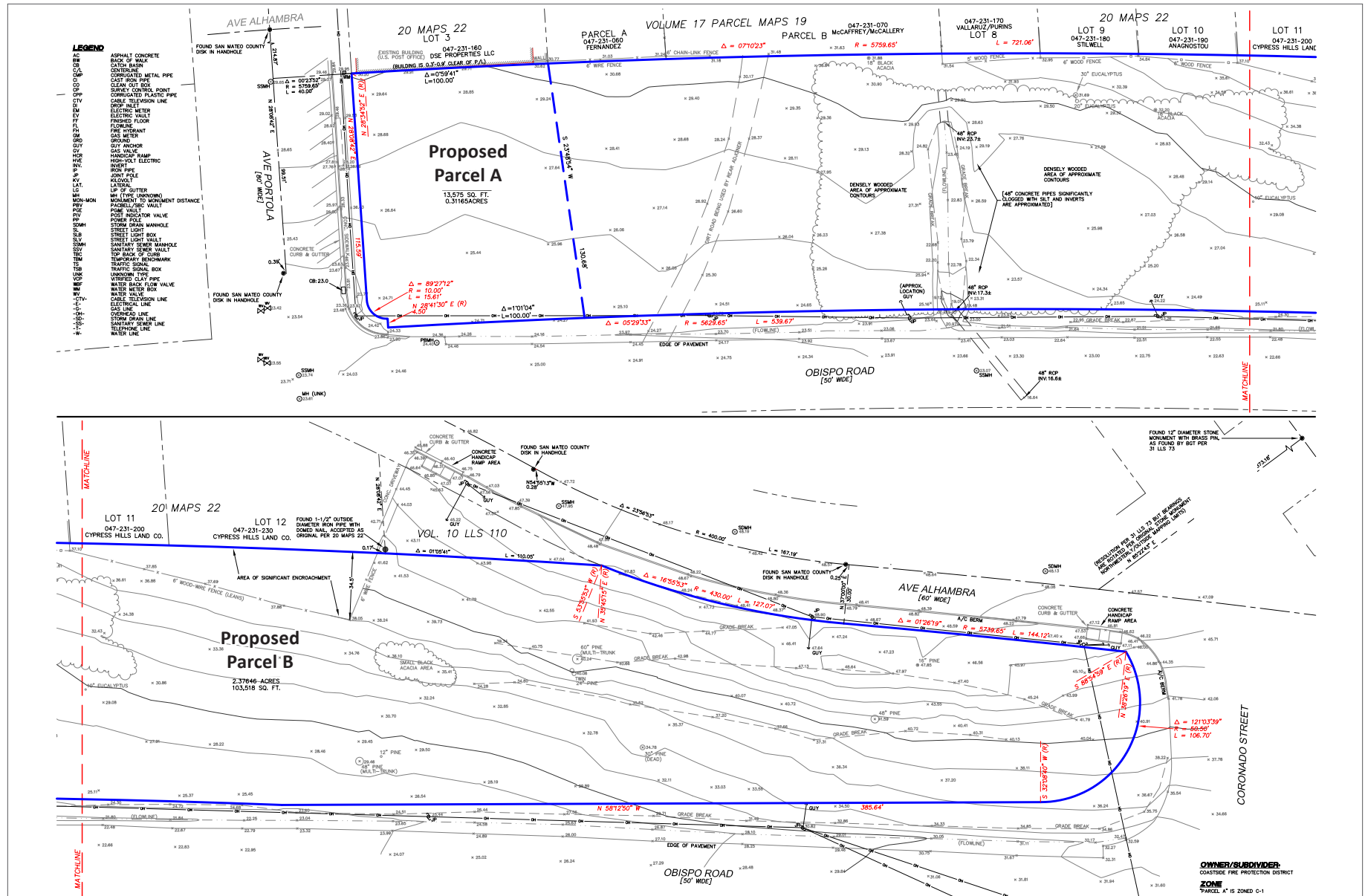
Source: San Mateo County, 2015.

General Plan Land Use Designation  
 Neighborhood Commercial Urban  
 Open Space With Park Overlay

Zoning Designation  
 Neighborhood Business District/Multiple Family Residential/Design Review District/Coastal Development District (C-I/S-3/DR/CD)  
 El Granada Gateway District/Design Review District/Coastal Development District (EG/DR/CD)

Figure 3-4  
General Plan Land Use and Zoning  
Designation

# PROJECT DESCRIPTION



Source: BGT Land Surveying, 2016.

0 100  
Scale (Feet)



Figure 3-5  
Proposed Tentative Parcel Map



## PROJECT DESCRIPTION

the project site, and because it is unknown what development could occur on this parcel, it would be speculative to analyze development of this parcel in this EIR. Any future development of Parcel A would be subject to independent CEQA review. However, a discussion of possible uses is included in the discussion of cumulative impacts in this EIR.

### 3.2.4.2 PROPOSED PARCEL B

The remaining 2.4-acre project site (Parcel B), which encompasses the location of the proposed project, is designated as Open Space with Park Overlay and is zoned El Granada Gateway/Design Review/Coastal Development (EG/DR/CD). The Open Space designation is generally reserved for resource management and production uses such as agriculture and oil and gas exploration. However, other uses within this land use designation can include other types of uses such as recreation, residential uses, and service uses (i.e., hotels and motel).<sup>10</sup> The EG zoning has a limited number of allowed uses and strict development requirements; however, Section 6500 of the zoning code provides for institutional/public services uses to be located in any zoning district subject to the issuance of a Use Permit.

## 3.3 PROJECT OBJECTIVES

The primary purpose of the proposed project is to construct a new Fire Station 41 to replace the existing fire station, which, as previously stated, is not large enough to properly house all the current and necessary fire/public safety equipment needs to serve the current population in this part of the CFPD's service area. In addition, the new fire station would be constructed in compliance with the most up to date building code regulations so that it would comply with the ESA, as described above. The CFPD has developed the following project objectives that are meant to aid decision-makers in their review of the proposed project, the alternatives to the proposed project, and associated environmental impacts:

- Replace the aging 50-plus year-old existing Fire Station 41.
- Provide a new fire station that complies with the Essential Services Buildings Seismic Safety Act of 1986 so that the fire station can resist earthquakes, gravity, and winds.
- Provide a new fire station that is adequately sized to house a 34-foot Fire Engine, a 42-foot Truck, and a 39-foot Heavy Rescue Vehicle in a drive through format.
- Provide a new fire station that allows the Coastside Fire Protection District to appropriately, provide for current and future fire and public safety service demands for the next 50 years.
- Provide a new fire station within the central District area currently served by existing Fire Station 41.
- Maintain and if possible improve current response times within the central District area.
- Avoid condemnation of private land to construct the new fire station.
- Minimize interference with ocean and hillside views.

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<sup>10</sup> San Mateo County General Plan Land Use Policies, page 7.6P.



## PROJECT DESCRIPTION

### 3.4 PROJECT CHARACTERISTICS

The CFPD proposes to subdivide the 2.7-acre project site into two parcels and to develop the easternmost 2.5-acre portion of the project site with a new Fire Station 41. Development of the proposed project would involve clearing some vegetation and trees on the site, as well as construction of the principal project components outlined below.

#### 3.4.1 PROPOSED FIRE STATION 41

As shown on Figure 3-6, the proposed project would involve the construction of a 12,425-square-foot main fire station building, a covered patio, an enclosed generator, a fuel tank, communication antenna, flag pole, an enclosed trash receptacle, surface parking, and lighting and landscaping features.

##### 3.4.1.1 IMAGE AND CHARACTER

The proposed project has been designed to preserve public access, coastal views and keeping an institutional facility at a small single story scale to fit within the character of the area. The proposed fire station building was designed to complement and contribute to the visual aesthetic of the surrounding area. It would be constructed with a variety of materials, including stone veneer and cement-treated siding in earth tones for the exterior, along with flat cement tile roof shingles in earth tones. The enclosures for the on-site generator, fuel tank, trash receptacle, and covered patio would coordinate with the design of the main fire station building for a cohesive public safety campus. In addition, the project proposes a flag pole, communications antenna, on-site paved parking and access to the site.

##### 3.4.1.2 FORM MASS AND SCALE

The project's proposed architecture on the site and overall site planning would be complementary to the mass and scale of surrounding structures in the area. Landscaping, pedestrian access, and connectivity would be emphasized throughout the project. Pedestrians and emergency vehicles would be separated by defined driveways and parking areas for safety and convenience.

The project design would reflect a "human" scale and pedestrian-oriented appearance. The proposed project would be minimally visible from the surrounding roadways due to the natural sloping topography and the low profile character of the proposed project. The project would aim to organize the form and mass of the proposed fire station building relative to the scale of the surrounding land uses and existing vegetation. The secured parking area would be enclosed using a 6-foot-high fence with 6-foot-high automated gate constructed of painted wrought iron.

The maximum height of the proposed fire station building would be 30 feet above finished grade at the center of the three apparatus bays, in order to accommodate the height of the fire trucks and equipment. Additionally, the project would include a flagpole at a height of 30 feet, which would be similar in height to the proposed fire station building. Further, as part of the ancillary equipment needed for operation of the fire station, antennas would be mounted on the roof of the fire station. Although the exact height of the antennas is not yet determined, it is assumed they will be similar in height to the existing station and would not obstruct views. Other components of the main fire station building, such as the staff



Figure 3-6  
Proposed Site Plan

## PROJECT DESCRIPTION

residential/administration, work training areas and enclosed generator, fuel tank, receptacles structures, would be well below 30 feet in height, as shown on Figure 3-7.

As a result of the design and narrow shape of the project site, the proposed project would require variances from the maximum allowable height within the “EG” Zoning District, which permits a maximum height of 30 feet. In addition, variances would be required from the rear and front setback’s established in the “EG” zone, which requires a minimum 20-foot rear setback and a 50-foot front setback. The project proposes setbacks of a minimum of 2 feet from the rear, and a setback of approximately 6 feet from the front.

### 3.4.1.3 LIGHTING

The lighting needs at the project site would vary according to the type and intensity of use. Varying illumination levels shall be provided to address the particular needs of outdoor spaces and activities: safety, security, CFPD vehicle and pedestrian movement, signage, and an attractive nighttime environment. Excessive illumination would be avoided and lighting would be shielded and placed so as to prevent glare and reflection or intrusion onto neighboring areas, and to preserve sunsets, and will be Dark Sky compliant.

Lighting for paths, entranceways, and outdoor areas would be directed downward to maintain the natural character of the beach and reduce nuisance to adjacent properties. The project’s lighting would include recessed downlights with lenses, surfaced mounted wall sconces and skylights with glare-reducing devices employed to reduce glare at night. The lighting source would be of equal intensity to the existing nearby commercial buildings.

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.

### 3.4.1.4 LANDSCAPING

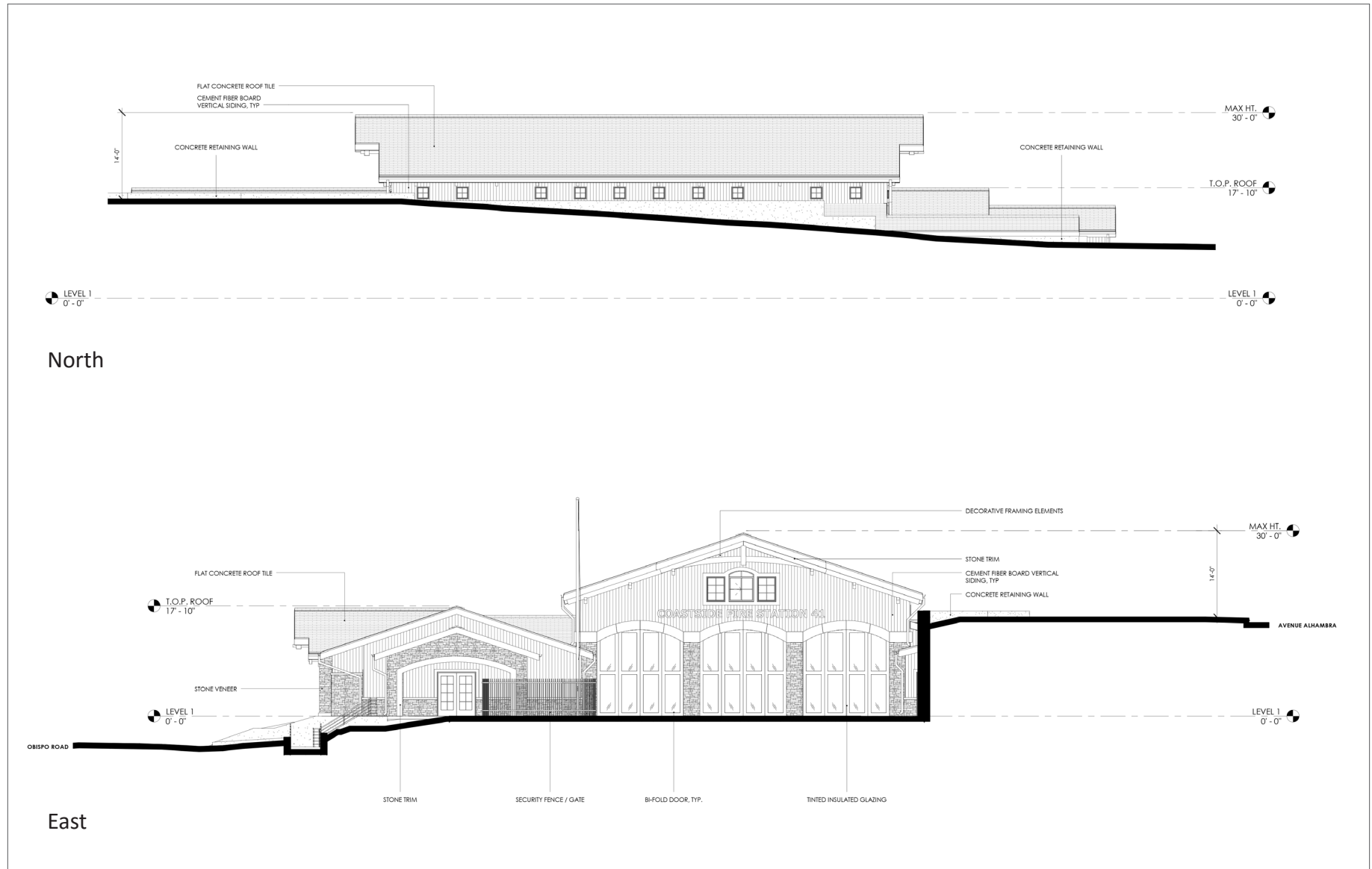
As shown on Figure 3-8, the landscaping plan for the proposed project would include the use of native drought-tolerant plantings and vegetation consistent with the project’s beach location in order to reduce the amount of irrigation required. The irrigation system would be fully automated, using primarily drip irrigation.

The final landscape plan would undergo design review by the San Mateo County Planning Department and Commission to ensure consistency with the landscaping requirements for the EG zoning designation established under Section 6229.4 of the County of San Mateo Zoning Regulations. According to the zoning regulations, all building structures shall be screened with sufficient landscaping to obscure and soften their appearance when viewed from Highway 1, and that all landscaping shall be drought-tolerant and include either native or non-invasive plant species.<sup>11</sup> Further, the proposed project would include several bio-retention areas along Obispo Road.

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<sup>11</sup> County of San Mateo Zoning Regulations, 2012, Chapter 12.6 “EG” District (El Granada Gateway District), Section 6229.4, Development Criteria and Standards, page 12.6.4.

## PROJECT DESCRIPTION



Source: Jeff Katz Architecture, 2016.

Figure 3-7a  
Proposed North and East Elevations

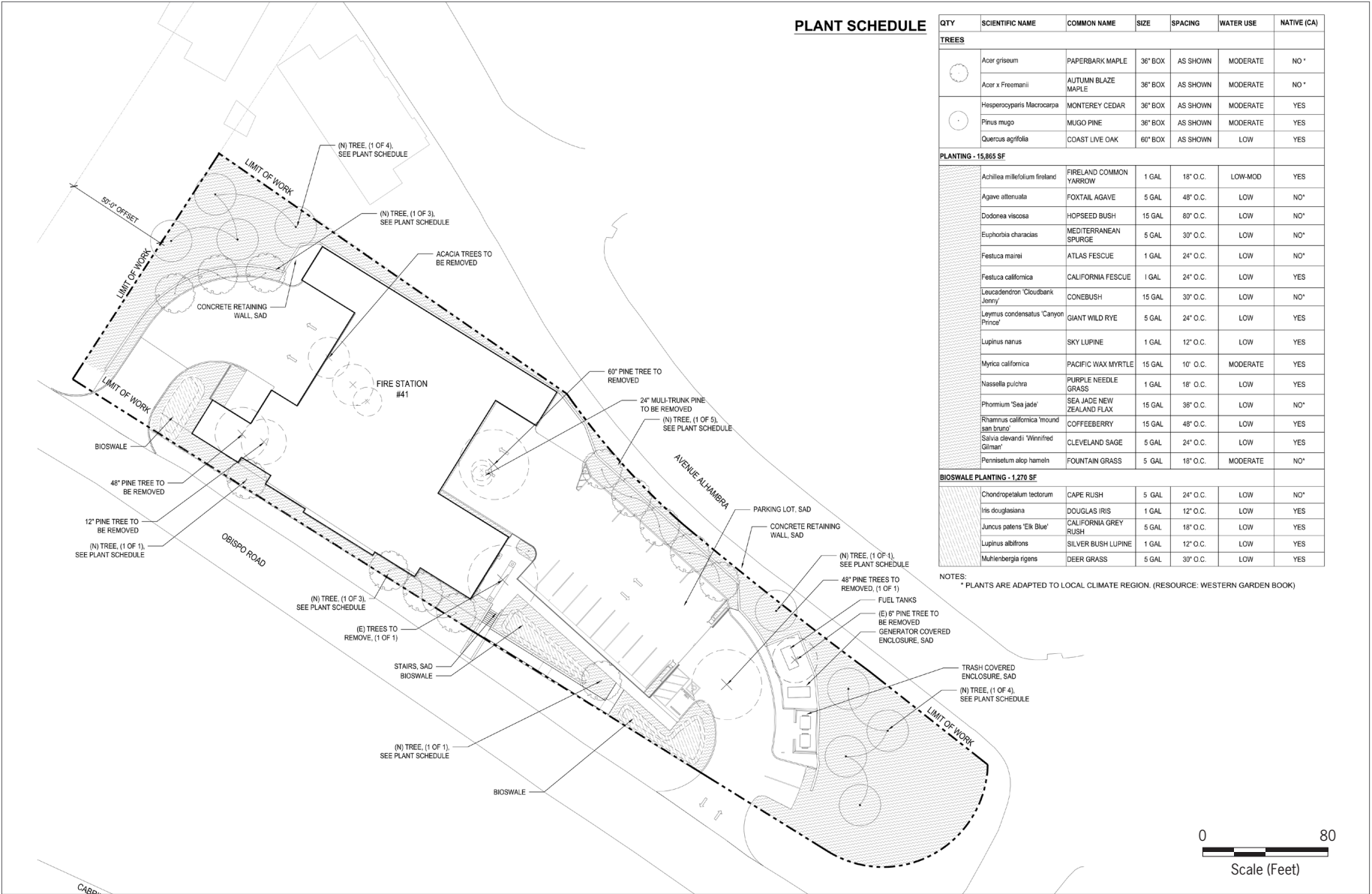
## PROJECT DESCRIPTION



Source: Jeff Katz Architecture, 2016.

Figure 3-7b  
Proposed South and West Elevations

PROJECT DESCRIPTION



Source: Jeff Katz Architecture, 2016.

Figure 3-8  
Proposed Landscape Plan

## **3.4.2 CIRCULATION**

### **3.4.2.1 VEHICULAR ACCESS**

As shown above on Figure 3-6, new driveways would be installed along Obispo Road, providing drive-through access for the fire apparatus.

The Obispo Road driveway at the eastern portion of the site closest to Coronado Street would provide access to and from the project site by both firefighter staff and personnel, as well as provide public access to the on-site surface parking lot. The driveway at the western portion of the project site would exclusively serve as an exit for firefighting and other emergency vehicles. During calls for service, the firefighters would continue to employ similar practices to determine the best route. Upon receiving a call, a firefighter checks the circulation and traffic at the time of the call which will determine if Avenue Portola or Obispo Road is the best route for the call. Given the location of the proposed project site, operation in terms of routes would not change beyond existing conditions.

### **3.4.2.2 PARKING**

As shown on Figure 3-6, the project would include 13 on-site secured parking spaces for staff, and three on-site public parking spaces.

### **3.4.2.3 PEDESTRIAN ACCESS**

As shown above in Figure 3-6, and as determined by the County of San Mateo, the proposed project may include a new 5-foot-wide sidewalk along Obispo Road, extending the length of the project improvements, along with a paved walkway, stairs, and an ADA-compliant ramp, leading to the entrance of the proposed fire station building.

## **3.5 PROJECT CONSTRUCTION AND OPERATION**

### **3.5.1 SITE PREPARATION AND CONSTRUCTION**

Site preparation and construction of the proposed project is estimated to start in summer 2017 and is expected to occur over a total 12- to 15-month period, subject to regulatory approval.

Site preparation, including grading, utility trenches, and a retaining wall would be completed over a two-month period. Because of the natural sloped topography and existing vegetation at the project site, the CFPD proposes the removal of 11 existing non-native trees consisting of Monterey Pines, Blue gum Eucalyptus, Acacia's, and Black acacia's; removal of ground vegetation; and site grading. Approximately 10,150 cubic yards of material is to be excavated. Approximately 160 cubic yards of fill material would remain on site and 9,990 cubic yards of material would be exported off site. Grading debris would be recycled, reused, or disposed of pursuant to the San Mateo County Recycling and Diversion of Debris from

## PROJECT DESCRIPTION

Construction and Demolition regulations.<sup>12</sup> Materials removed from the project site, including soil and trees, would be hauled to the nearest permitted disposal site.

In addition, the project site requires the construction of retaining walls along the northern boundary of the project site to create a buildable pad (i.e., building surface), as shown on Figure 3-4. The retaining wall would be a maximum of 17 feet high. The building would screen the majority of this wall. The exposed wall areas would be screened with landscaping where practical and there will be a railing along Avenue Alhambra where necessary.

The site grading and construction of the retaining wall would be in compliance with recommendations in the project's geotechnical engineering report, included as Appendix G of this Draft EIR. In addition, grading and site preparation work hours would be limited to the hours of 7:00 a.m. to 4:00 p.m. Monday through Friday. No grading or site preparation would occur on Saturdays, Sundays, Thanksgiving or Christmas.<sup>13</sup>

Building construction would occur up to a 15-month period. Construction work hours would be the same as the grading and site preparation described above. The proposed project construction would be comprised of the following:

- 12,425 square feet for the new fire station building.
- 21,080 square feet of impervious surface area, including curb, sidewalks, surface parking, and other paved areas.
- 16,400 square feet for landscaping.

Equipment to be used for grading and site preparation would include concrete/industrial saws, excavators; a rubber-tired dozer; tractors, loaders, and backhoes; a grader; a water truck; an excavator; a paver; and a roller. There will not be any pile driving, rock blasting, or rock crushing during the construction phase. Typical equipment to be used for construction of the proposed project would include a backhoe, excavators, a crane, aerial lifts, a generator, concrete/shotcrete pump, a diesel pump, dumpers, rollers, and a paver.

During site preparation and construction, vehicle, equipment, and materials would be staged and stored on a portion of the project site. The construction site and staging areas would be clearly marked, and construction fencing would be installed to prevent disturbance and safety hazards. No staging would occur in the public right-of-way. A combination of on- and off-site parking facilities for construction workers would be identified during grading, site preparation, and construction, and all work would be subject to a construction traffic control and construction mitigation plan to be approved by the County.

### 3.5.2 STAFFING AND OPERATION

Operation of the project is not expected to change beyond existing conditions and would continue to operate with existing staff and staff levels as the existing Fire Station 41. A full staffed shift of firefighters

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<sup>12</sup> San Mateo County Municipal Code, Title 4, Sanitation and Health, Chapter 4.105, Recycling and Diversion of Debris from Construction and Demolition.

<sup>13</sup> San Mateo Municipal Code, Title 4, Sanitation and Health, Chapter 4.88, Noise Control, Section 4.88.360, Exemptions.



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is commonly known as a company. The proposed Fire Station 41 would be staffed by three companies each consisting of three fire fighters. The three companies would work a combined total of 2.5 shifts per week. As under current conditions, the three companies would work three shifts as follows:

- Shift 1 would work Sunday, Monday, and Tuesday.
- Shift 2 would work Thursday, Friday, and Saturday.
- Relief shift would work Wednesday.

During shift changes, there would be six crew members on-site and their private vehicles parked in the secure lot. In addition to shift changes, the on-site personnel would increase by 1 or 2 during training periods, as well as management personnel visits.

Although the proposed fire station is expected to operate under the existing staff and staff levels described above, it would be able to accommodate a fourth company (consisting of three fire fighters) if and when appropriate to maintain adequate response times. For purposes of this EIR the project is analyzed at full staffing capacity.

The project would be constructed to accommodate a 34-foot Fire Engine, a 42-foot Truck, and a 39-foot Heavy Rescue Vehicle. The CFPD dispatches the type of equipment and staff based upon the nature of the emergency.

### 3.6 REQUIRED PERMITS AND APPROVALS

Section 15367 of the CEQA Guidelines defines the “Lead Agency” as the public agency which has the principal responsibility for carrying out or approving a project. The CFPD is the public agency which has the principal responsibility for planning, designing and building the project. While San Mateo County has land use planning jurisdiction on this site, the County Planning Division has agreed that CFPD will be the Lead Agency for CEQA purposes and San Mateo County will be a “Responsible Agency.”<sup>14</sup> CFPD will coordinate and consult with the County Planning Division throughout the EIR process, sharing administrative draft sections and requesting reviews and comments. The objective is to prepare and certify an EIR that the County Planning Commission can rely upon as adequate environmental review under CEQA for its consideration of the land use permits required for this project listed below.

Upon completion of the Draft EIR, the CFPD, acting as the Lead Agency, will circulate the Draft EIR for public review. All public comments within the required public review period will then be included in the Final EIR, which would be reviewed for certification by the CFPD. Following the CFPD certification of the EIR, CFPD will consider approval of the design and funding of the project. San Mateo County will then conduct their review and analysis of the project, and hold the required public hearings for the following permits, as well as other permits as determined throughout the environmental review and permitting process:

- Coastal Development Permit – (San Mateo County Planning Department)
- Design Review – (San Mateo County Planning Department)

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<sup>14</sup> CEQA Section 21069, a “Responsible agency” means a public agency, other than the lead agency, which has responsibility for carrying out or approving a project.

## PROJECT DESCRIPTION

- Use Permit to allow a fire station within EG district – (San Mateo County Planning Department)
- Variance from height, setbacks and lot coverage restrictions otherwise required– (San Mateo County Planning Department)
- Excavating, Grading, Filling, and Clearing Permit – (San Mateo County Planning Department)
- Minor Subdivision to create proposed Parcel A and Parcel B– (San Mateo County Planning Department)
- Tree Removal Permit to remove 11 non-native trees – (San Mateo County Planning Department)
- Building Permit – (San Mateo County Building Department)

A sewer connection permit would also be required from the Granada Community Services District, which may involve discretionary approval in which case Granada Community Services District would also be a Responsible Agency for CEQA purposes.

## 4. *Environmental Analysis*

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### Chapter Organization

This chapter of the Draft EIR is made up of six sub-chapters. This chapter describes the format of this Draft EIR and the methodology of the cumulative impact analysis. The six sub-chapters evaluate the direct, indirect, and cumulative environmental impacts of the proposed project. The potential environmental effects of the proposed project are analyzed for the following environmental issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Hydrology and Water Quality
- Noise
- Transportation and Circulation

### Format of the Environmental Analysis

Each sub-chapter is organized into the following sections:

- **Environmental Setting** provides an overview of federal, State, regional and local laws and regulations relevant to each environmental issue, together with a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared.
- **Standards of Significance** refers to the quantitative or qualitative standards or conditions used to compare the existing setting with and without the proposed project to determine whether the impact is significant. These standards are based primarily on the CEQA Guidelines, and may reflect established health standards, ecological tolerance standards, public service capacity standards, or guidelines established by agencies or experts.
- **Impact Discussion** gives an overview of the potential impacts of the proposed project] and explains why impacts were found to be significant or less than significant, and includes suggested measures that would mitigate any identified potentially significant or significant impacts resulting from the proposed project. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronymic or abbreviated reference to the impact section. The following symbols are used for individual topics below. This subsection also includes a discussion of cumulative impacts of the proposed project.
  - AES – Aesthetics
  - AIR – Air Quality
  - BIO – Biological Resources
  - HYDRO – Hydrology and Water Quality
  - NOISE – Noise
  - TRANS – Transportation and Circulation

## ENVIRONMENTAL ANALYSIS

- **Cumulative Impact Discussion** analyzes impacts that the Project may have when considered in addition to other past, present, and reasonably foreseeable projects, as described in more detail below.

### Level of Significance

As noted above, the significance criteria used to determine whether the project results in potentially significant or significant impact are identified before the impact discussion subsection, under the subsection, “Standards of Significance.”

For each impact identified, a level of significance is determined using the following classifications:

- *Significant (S)* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- *Less-than-Significant (LTS)* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or are mitigated below such thresholds.
- *No impact* describes the circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If the mitigation measures would reduce the impact to a less-than-significant level successfully, this is stated in the EIR. However, where mitigation measures would not diminish these effects to less-than-significant levels, these effects are identified significant and unavoidable (SU).

### Cumulative Impact Analysis

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR, together with other reasonably foreseeable projects causing related impacts. Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a project when the project’s incremental effect is “cumulatively considerable.” Used in this context, cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Where the incremental effect of a project is not “cumulatively considerable,” a lead agency need not consider that effect significant, but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. Where the cumulative impact caused by the project’s incremental effect and the effects of other reasonably foreseeable projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

### Geographic Area for Cumulative Analysis

The cumulative discussions in Chapter 4.1 through 4.6 explain the geographic scope of the area affected by each cumulative effect (e.g. immediate project vicinity, city, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, only development within the vicinity of the Project would contribute to a cumulative visual effect because the Project is only visible within the vicinity of the site. In assessing macro-scale air quality impacts, on the other hand, all development within the San Francisco Bay Area Air Basin contributes to regional emissions of criteria pollutants, and basin-wide projections if emissions are the best tool for determining the cumulative effect. For most resource issues, the

## ENVIRONMENTAL ANALYSIS

cumulative context evaluated in this Draft EIR includes projected growth within the vicinity of the Project site.

### Cumulative Projects Considered

The CEQA Guidelines Section 15130 outlines two approaches to analyzing cumulative impacts. The first is the “list approach,” which requires a listing of past, present and reasonably anticipated future projects producing related or cumulative impacts. The second is the projections-based approach wherein the relevant growth projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions are summarized. A reasonable combination of the two approaches may also be used. This Draft EIR utilizes a combination approach to analyzing cumulative impacts. Specific projects taken into account in the cumulative impact analyses are listed in Table 4-1. Included in this list is the development of both the existing Fire Station 41 parcel at 531 Obispo Road that would cease operations upon completion of the proposed project, and the proposed Parcel A which would be created by the minor subdivision proposed by the project but which is not proposed for development.

## ENVIRONMENTAL ANALYSIS

**TABLE 4-1 CURRENT AND FUTURE DEVELOPMENTS IN EL GRANADA**

Record ID <sup>a</sup>	APN <sup>b</sup>	Address	Development Type	Units	Total Square Footage	Distance from Project Site
<b>Building Permit Application Submitted</b>						
BLD2013-01827	47126360	228 FRANCISCO ST, UNIT 2	SFR	1	592	0.5 miles
BLD2014-01367	47071050	127 MADRONA AVE	SFR	1	2,185	1 mile
BLD2015-00455	47206230	101 AVENUE PORTOLA	MFR	12	13,096	0.25 miles
BLD2015-00472	47222100	477 AVENUE PORTOLA	SFR	1	2,741	0.5 miles
BLD2015-00548	47221070	435 AVENUE DEL ORO	SFR	1	N/A	0.5 miles
BLD2016-00202	47233350	120 AVENUE PORTOLA	MFR	3	1,844	0.25 miles
BLD2016-00204	47233360	CORNADO AVE	MFR	3	2,016	N/A
BLD2016-01057	47105090	401 PALOMA AVE	SFR	1	2,280	0.75 miles
<b>Planning Permit Application Submitted</b>						
PLN2011-00164	47181890	345 SAN PEDRO RD	SFR	1	2,597	0.5 miles
PLN2014-00082	47113210	925 FERDINAND AVE	SFR	1	2,046	0.75 miles
PLN2014-00122	47062170	SONORA AVE	SFR	1	1,200	N/A
PLN2014-00273	47171200	923 COLUMBUS ST	Subdivision	N/A	N/A	0.5 miles
PLN2014-00350	47143190	224 DEL MONTE RD	SFR	1	2,658	0.75 miles
PLN2014-00411	47242360	1076 COLUMBUS ST	2 <sup>nd</sup> Unit	1	N/A	0.5 miles
PLN2015-00221	47173150	SAN PEDRO RD	SFR	1	3,118	N/A
PLN2015-00412	47175250	EL GRANADA BLVD & SAN PEDRO	SFR	1	2,308	0.5 miles
PLN2016-00011	47105240	SAN CARLOS AVE	SFR	1	2,200	N/A
PLN2016-00016	47218150	640 FERDINAND AVE	SFR	1	N/A	0.75 miles
PLN2016-00054	47287260	917 PALMA ST	SFR	1	2,337	0.25 miles
PLN2016-00085	47043240	AVE ALHAMBRA	SFR	1	3,067	N/A
PLN2016-00091	47071270	SEVILLA AVE	SFR	1	2,491	N/A
PLN2016-00136	47045330	11 AVENUE ALHAMBRA	Use Permit Amendment for Hotel	14 guestrooms/ 1 manager unit		0.10 miles
PLN2016-00141	47281160	640 CORONADO ST	SFR	1	2,718	0.10 miles
PLN2016-00153	47071260	SEVILLA AVE	SFR	1	2,909	N/A
PLN2016-00201	47152230	121 LEWIS AVE	SFR	1	2,596	1 mile
<b>Pre-Application Meeting</b>						
PRE2015-00028	47181080	0 DEL MONTE RD	SFR	1	N/A	0.75 miles
PRE2015-00034	47271170	110 ISABELLA AVE	SFR	1	N/A	0.10 miles
PRE2015-00046	47131060	506 AVENUE BALBOA	SFR	1	N/A	0.75 miles

## ENVIRONMENTAL ANALYSIS

**TABLE 4-1**      **CURRENT AND FUTURE DEVELOPMENTS IN EL GRANADA**

Record ID <sup>a</sup>	APN <sup>b</sup>	Address	Development Type	Units	Total Square Footage	Distance from Project Site
PRE2015-00050	47234220	THE ALAMEDA	SFR	1	N/A	N/A
PRE2015-00053	47077150	0 SAN CARLOS AVE	SFR	1	N/A	0.75 miles
PRE2015-00056	47212150	0 THE ALAMEDA	SFR	1	2,050 (estimate)	0.25 miles
PRE2015-00068	47243010	COLUMBUS ST at AVE PORTOLA	SFR	1	6,170	0.5 miles
PRE2016-00006	47208090	578 THE ALAMEDA	N/A	N/A	N/A	0.25 miles
PRE2016-00013	47161100	119 HIGHLAND AVE	SFR	1	N/A	1 mile
PRE2016-00023	47055120	438 SEVILLA AVE	SFR	1	2,643	1 mile
PRE2016-00035	47215340	535 PALMA ST	SFR	1	N/A	0.5 miles
PRE2016-00036	47141240	243 DEL MONTE RD	SFR	1	3,200	0.75 miles
PRE2016-00037	47144370	0 AVENUE PORTOLA	SFR	1	N/A	0.25 miles

Note: SFR = Single-Family Residential; MFR = Multi-Family Residential

a. Record ID indicates the identification number of the project as filed with the County of San Mateo.

b. APN = Assessor's Parcel Number

Source: County of San Mateo, September 2016.

## **ENVIRONMENTAL ANALYSIS**

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## **4.1 AESTHETICS**

This chapter discusses the existing aesthetic character of the project site and its surroundings, and evaluates the potential impacts to aesthetics associated with development of the proposed project. The following evaluation assesses the visual character of the site and impacts from light and glare.

### **4.1.1 ENVIRONMENTAL SETTING**

#### **4.1.1.1 REGULATORY FRAMEWORK**

This section summarizes key State and local regulations and programs related to aesthetics. There are no federal regulations pertaining to aesthetics that apply to the project.

#### **State Regulations**

##### *California Building Standards Code*

Title 24 in the California Code of Regulations (CCR) is the California Building Standards Code and Part 6 of Title 24 is the California Energy Code (CEC), which includes standards for lighting to improve energy efficiency, and to reduce light pollution and glare by regulating light power, brightness, and sensor controls.

Part 11 of Title 24 is the California Green Building Standards Code known as CALGreen. CALGreen establishes building standards aimed at enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact. CALGreen encourages sustainable construction practices and includes standards for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. Section 5.106.8, Light Pollution Reduction, specifically establishes Backlight, Uplight, and Glare (BUG) ratings to minimize the effects of light pollution for non-residential development.

##### *CAL Green*

California Green Building Standards Code of the California Code of Regulations, Title 24, Part 11, known as CALGreen, establishes building standards aimed at enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. Specifically, Section 5.106.8, Light Pollution Reduction, establishes Backlight, Uplight, and Glare (BUG) ratings to minimize the effects of light pollution for nonresidential development.

#### **Local Regulations**

##### *San Mateo County General Plan*

The San Mateo County General Plan, adopted on November 18, 1986, serves as a guide for land development and conservation; it sets forth goals and policies for the future development of the County in part by directing preservation and enhancement of aesthetic resources. Chapter 4, Visual Quality

## AESTHETICS

describes the visual character of San Mateo County's topography, natural vegetation, water bodies, developed areas, scenic roads and corridors; explains existing visual controls; analyzes relevant issues; and finally, provides statements of policy to guide decision-makers in managing the preservation and modification of these resources. Chapter 8, Urban Land Use describes the Listed below in Table 4.1-1 are policies relevant to aesthetics in San Mateo County.

### *San Mateo County Community Design Manual*

Adopted by the San Mateo County Board of Supervisors on July 20, 1976, the Community Design Manual provides guidelines by which the County Design Review Administrator may evaluate individual building permits where the Design Review Zoning District is combined with existing zoning districts. These criteria are meant to help preserve and enhance property values, the visual character of communities, natural resources, and the public health, safety and welfare of the citizens of San Mateo County. The Manual was designed for use while reviewing development proposals in those areas where the Design Review Zoning District is combined with the underlying zoning districts. The Manual improves the general standards of orderly development of the County through design review of individual buildings, structures and their environs; improves and augments the controls now included in ordinances related to planning and building in order to promote development which is in the best interest to the public health, safety and welfare of the County; to establish standards and policies that will promote and enhance good design, site relationships, and other aesthetic considerations in the County. In addition, the Manual graphically illustrates preferred development techniques and establishes general architectural and site design policies.

### *Local Coastal Program*

The Visual Resources Component of the Local Coastal Program (LCP) seeks to protect the scenic and visual qualities of areas within the Coastal Zone. It enacts policies and regulations that regulate the siting and design of permitted development in order to minimize alteration of the topography, protect coastal views, ensure that new development is visually compatible with the character of surrounding areas and, where possible, restore and enhance the scenic quality of visually degraded areas. The Component also designates scenic roads, regulates development within the adjacent corridors, and exempts from architectural and site plan review all agricultural related development and all buildings and structures not visible from the roadway because of terrain and plant cover.<sup>1</sup> Table 4.1-2 identifies LCP policies relevant to aesthetics.

### *San Mateo County Municipal Code*

The County of San Mateo Municipal Code is the primary tool that shapes the form and character of physical development in El Granada. The Municipal Code contains all ordinances for the City and identifies zoning districts, site development regulations, and other regulatory provisions that ensure consistency between the General Plan and proposed development projects. The Municipal Code is organized by Title, Chapter, Article, and Section. These standards are intended to preserve the overall character throughout the city, protect scenic resources, and prevent adverse impacts related to light and glare. The following provisions from the Municipal Code help minimize visual impacts associated with new development projects:

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<sup>1</sup> San Mateo County General Plan, 1986, page 4.24.

## AESTHETICS

**TABLE 4.1-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO AESTHETICS**

Goal / Policy Number	Goal / Policy
Policy 4.1	Protection of Visual Quality – a. Protect and enhance the natural visual quality of San Mateo County. b. Encourage positive visual quality for all development and minimize adverse visual impacts. c. Encourage citizen awareness and interest in San Mateo County’s scenic resources.
Policy 4.2	Protection of Shorelines – a. Protect and enhance the visual quality of and from shorelines of bodies of water including lakes, reservoirs, streams, bays, ocean, sloughs. b. Maximize the preservation of significant public ocean views.
Policy 4.3	Protection of Vegetation - Minimize the removal of visually significant trees and vegetation to accommodate structural development.
Policy 4.4	Appearance of Rural and Urban Development – Promote aesthetically pleasing development in rural and urban areas.
Policy 4.15	Appearance of New Development – a. Regulate development to promote and enhance good design, site relationships and other aesthetic considerations. b. Regulate land divisions to promote visually attractive development.
Policy 4.16	Supplemental Design Guidelines for Communities – Encourage the preparation of supplemental site and architectural design guide-lines for communities that include, but are not limited to, criteria that reflect local conditions, characteristics and design objectives and are flexible enough to allow individual creativity.
Policy 4.17	Protections for Coastal Features – Regulate coastal development to protect and enhance natural landscape features and visual quality through measures that ensure the basic integrity of sand dunes, cliffs, bluffs and wetlands.
Policy 4.21	Utility Structures – Minimize the adverse visual quality of utility structures, including roads, roadway and building signs, overhead wires, utility poles, T.V. antennae, distributed energy resources, solar water heaters, and satellite dishes.
Policy 4.22	Scenic Corridors – Protect and enhance the visual quality of scenic corridors by managing the location and appearance of structural development.
Policy 4.24	Earthwork Operations – a. Keep grading or earth-moving operations to a minimum. b. Where grading is necessary, make graded areas blend with adjacent landforms through the use of contour grading rather than harsh cutting or terracing of the site.
Policy 4.27	Trees and Vegetation – a. Preserve trees and natural vegetation except where removal is required for approved development or safety. b. Replace vegetation and trees removed during construction wherever possible. Use native plant materials or vegetation compatible with the surrounding vegetation, climate, soil, ecological characteristics of the region and acceptable to the California Department of Forestry. c. Provide special protection to large and native trees.
Policy 4.28	Landscaping and Screening – a. Provide a smooth transition between development and adjacent forested or open space areas through the use of landscaping. b. Limit landscaping in open grasslands to areas immediately surrounding structures. c. Where it is appropriate to screen uses from view, use natural vegetation rather than solid fencing.
Policy 4.36	Urban Area Design Concept – a. Maintain and, where possible, improve upon the appearance and visual character of development in urban areas. b. Ensure that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality.
Policy 4.37	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.

## AESTHETICS

**TABLE 4.1-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO AESTHETICS**

Goal / Policy Number	Goal / Policy
Policy 4.38	Urban Design Review District – Develop design review regulations which incorporate guidelines on managing design problems found in predominantly urban areas.
Policy 4.40	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.
Policy 4.41	Coordination of Scenic Roadway Standards and Design – Coordinate standards of roadway and right-of-way design, improvements, and maintenance with cities in order to maintain a consistent approach in applying scenic conservation standards.
Policy 4.47	Regulation of Development in Scenic Corridors – 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.
Policy 4.56	Tree and Vegetation Removal – a. Allow the removal of trees and natural vegetation when done in accordance with existing regulations. b. Prohibit the removal of more than 50% of the tree coverage except as allowed by permit.
Policy 4.58	Outdoor Lighting – Minimize exterior lighting in scenic corridors and, where used, employ warm colors rather than cool tones and shield the scenic corridor from glare.
Policy 4.59	Roads and Driveways – a. 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. b. Limit number of access roads connecting to a scenic road to the greatest extent possible. c. Share driveways where possible to reduce the number of entries onto scenic roads.
Policy 4.60	Parking and Paved Areas – Integrate paved areas with their site and landscape and/or screen them to reduce visual impact from the scenic corridor.
Policy 4.61	Storage Areas – 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.

Source: San Mateo County General Plan, adopted November 18, 1986.

### Chapter 12.6 “EG” District (El Granada Gateway District)

Chapter 12.6 establishes development criteria and standards for all permitted uses within the El Granada Gateway District, including linear parks and trails. Criteria include minimum parcel area, maximum building height, minimum building setbacks, maximum parcel coverage, impervious surface area, landscaping, signs, winter grading, and traffic control.

### Chapter 20B. “CD” District (Coastal Development District)

Chapter 20B establishes a Coastal Development “CD” District for the purpose of implementing the Coastal Act of 1976 (Division 20 of the Public Resources Code) in accordance with the Local Coastal Program of the County of San Mateo. Development undertaken pursuant to a Coastal Development Permit shall conform to the plans, specifications, and terms and conditions approved or imposed in granting the permit. Where the plans, policies or requirements or standards of the Local Coastal Program, as applied to any project in the “CD” District, conflict with those of the underlying district, or other provisions, the Local Coastal program shall take precedence.

## AESTHETICS

**TABLE 4.1-2 LOCAL COASTAL PROGRAM POLICIES RELEVANT TO AESTHETICS**

Goal / Policy Number	Goal / Policy
Policy 8.5	<p>Location of Development: On rural lands and urban parcels larger than 20,000 square feet:</p> <ol style="list-style-type: none"> <li>a. Require that new development be located on a portion of a parcel where the development: (1) is least visible from State and County Scenic Roads; (2) is least likely to significantly impact views from public viewpoints; and (3) is consistent with all other LCP requirements, best preserves the visual and open space qualities of the parcel overall. Where conflicts in complying with this requirement occur, resolve them in a manner which, on balance, most protects significant coastal resources on the parcel, consistent with Coastal Act Section 30007.5. Public viewpoints include, but are not limited to, coastal roads, roadside resets, recreation areas, trails, coastal accessways, and beaches. This provision does not apply to enlargement of existing structures, provided that the size of the structure after enlargement does not exceed 150% of the pre-existing floor area, or 2,000 square feet, whichever is greater. This provision does not apply to agricultural development [...].</li> <li>b. Require, including by clustering if necessary, that new parcels have building sites that are not visible from State and County Scenic Roads and will not significantly impact view from other public viewpoints. If the entire property being subdivided is visible from the State and County Scenic Roads or other public viewpoints, then require that new parcels have building sites that minimize visibility from those roads and other public viewpoints.</li> </ol>
Policy 8.10	<p>Vegetative Cover (with the exception of crops grown for commercial purposes): Replace vegetation removed during construction with plant materials (trees, shrubs, ground cover) which are compatible with surrounding vegetation and is suitable to the climate, soil, and ecological characteristics of the area.</p>
Policy 8.12	<p>General Regulations:</p> <ol style="list-style-type: none"> <li>a. Apply the Design Review (DR) Zoning District to urban areas of the Coastal Zone: (1) For one- and two-family developments in the Midcoast, apply the design standards contained in Section 6565.20. (2) For all other development, apply the design standards contained in Section 6565.17 and the design criteria set forth in the Community Design Manual.</li> <li>b. Locate and design new development and landscaping so that ocean views are not blocked from public viewing points such as public roads and publicly-owned lands.</li> </ol>
Policy 8.13	<p>Special Design Guidelines for Coastal Communities.</p> <ol style="list-style-type: none"> <li>a. Montara-Moss Beach-El Granada-Miramar: (1) Design structures that fit the topography of the site and do not require extensive cutting, grading, or filling for construction; (2) Employ the use of natural materials and colors that blend with vegetative cover of the site; (3) Used pitched roofs that are surfaced with non-reflective materials except for the employment of solar energy devices. The limited use of flat roofs may be allowed if necessary to reduce view impacts or to accommodate varying architectural styles that are compatible with the character of the surrounding area; (4) Design structures in scale with the character of their setting and blend rather than dominate or distract from the overall view of the urban landscape; (5) To the extent feasible, design development to minimize the blocking of views to or along the ocean shoreline from Highway 1 and other public viewpoints between Highway 1 and the sea. Public viewpoints include coastal roads, roadside rests and vista points, recreation areas, trails, coastal accessways, and beaches. This provision shall not apply in areas west of Denniston Creek zoned either Coastsides Commercial Recreation or Waterfront; and (6) In areas east of Denniston Creek zoned Coastsides Commercial Recreation, the height of development may not exceed 28 feet from the natural or finished grade, whichever is lower.</li> </ol>

Source: San Mateo County Local Coastal Program, 2013.

### Chapter 28.1 “DR” (Design Review Overlay District)

Chapter 28.1 establishes design standards for all new exterior construction or remodeling of residential, commercial, or industrial structures. This zone is currently in effect in Montara, Moss Beach, El Granada, Pescadero, San Gregorio, Emerald Lake Hills, and one area of North Fair Oaks. The purposes of the Chapter are to: recognize the interdependence of land values and aesthetics and to provide a method by

## **AESTHETICS**

which the County may encourage builders to develop land so that its value and attractiveness will endure; encourage development of private property in harmony with the desired character of the community or area in conformance with an adopted set of community design principles as well as the County General Plan, the Local Coastal Program (where applicable), and other Precise Plans; avoid and prevent community deterioration and to encourage the preservation and enhancement of property values and the visual character of communities and natural resources; improve the general standards of orderly and stable development in the County through review of the design of individual buildings, structures and their setting; improve and augment the regulations now included in ordinances related to planning, building and health in order to promote development which is in the best interest to the public health, safety and welfare of the County; establish standards and policies that will promote, preserve, and enhance building design, proper site development, and other environmental characteristics in communities and areas where previous planning and zoning controls have been found inadequate for these purposes and the economic and physical stability is threatened by new development. All applications for development and/or grading permits in these areas must be approved by the Design Review Administrator . Approval of these permits is subject to guidelines and standards designed to minimize the visual impact of development upon the natural features present at the building site along with reducing the impact upon the established character of existing development.<sup>2</sup> In this specific case, the Coastside Design Review Administrator will be consulted regarding the project and will provide recommendations to the San Mateo County Planning Commission that will consider the project at a public hearing.

### **4.1.1.2 EXISTING CONDITIONS**

The following provides a general description of the existing urban visual character of the proposed project site and its immediate surroundings.

#### **Visual Character**

The character of Montara-Moss Beach and El Granada is largely influenced by its coastal setting. Typical views from these areas include the Pacific Ocean, rocky hills, dense stands of mature eucalyptus trees and sloped terrain. The predominant land use in the Montara-Moss Beach-El Granada community is single-family residential. Commercial uses are clustered along the Highway 1 corridor and Pillar Point Harbor. There is a small commercial area long Avenue Portola adjacent to the project site. Half Moon Bay Airport is located midway between El Granada and Montara. The Princeton by the Sea area includes boat repair, marine related businesses, storage facilities and coastside recreational businesses including hotels and restaurants.. Beaches, parks, agriculture and open space lands surround the community. Housing styles include one and two story single-family dwellings characterized by bungalow type dwellings, similar roof styles, building heights, construction materials and pastel exterior colors, along with some multi-family development. Commercial development consists of a mix of one-story and two-story structures. In addition, agricultural uses are located in this area.<sup>3</sup> .

The existing project site is primarily vegetated with shrubs, grasses, and an area of denser vegetation generally in the center of the project site that is riparian habitat. However, the area of the project site

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<sup>2</sup> San Mateo County General Plan, adopted 1986, page 4.26.

<sup>3</sup> San Mateo County General Plan, 1986, page 4.14.

## AESTHETICS

where construction would take place is by non-native grasses and shrubs, along with a mix of 11 non-native imported trees.<sup>4</sup> There are no existing structures on the project site.

The existing visual character in the vicinity of the project site includes mostly one- and two-story single-family residential homes, as well as two multi-family structures along Avenue Alhambra along the northern border of the project site. Both multi-family structures are approximately three stories in height and located at the top of the sloping topography of the area, with parking on the ground floor as well as on-site paved surface parking. Along Avenue Portola, west of the project site, are commercial structures characterized by two- and three-story structures of varying design and materials, as well as the existing Fire Station 41 at 531 Obispo Road, El Granada, which is a single-story, two-bay structure with modest landscaping, including small patches of turf grass, and few ornamental trees. Across Obispo Road south of the project site is a vacant parcel of land consisting of dense trees and shrubbery, along with an area of an unimproved dirt/gravel parking lot. The trees and dense foliage on this parcel are between one- and three-stories in height and partially obstruct views of the ocean from Avenue Alhambra, and nearly completely obstruct views of the ocean from Obispo Road.

### *Views of the Project Site*

The project site is located east of Highway 1 and is bounded by Avenue Alhambra to the north, Coronado Street to the east, Obispo Road to the south, and Avenue Portola to the west. As mentioned above, the parcel across Obispo Road is characterized by undeveloped land that has dense foliage and trees from one- to three stories in height, therefore, the project site is generally not visible from Highway 1, with the exception of vehicles approaching Coronado Street heading north on Highway 1. From Obispo Road, views of the existing site include a modestly upward sloping parcel of undeveloped land that is comprised of non-native grasses, shrubs, and sparsely planted trees. From Coronado Street, existing views of the site include utility poles, scattered trees and shrubs, and single-family homes in the far ground. From Avenue Alhambra, existing views of the site include utility poles, scattered trees and shrubs, which acts as a buffer between Highway 1 and Obispo Road, located directly west of the existing site. From the adjacent residential area located northeast of the site, existing views include utility poles, scattered trees and shrubs, and intermittent views of the Pacific Ocean in the far-ground.

### *Views from the Project Site*

Views from Avenue Alhambra looking west towards the project site and the ocean show the topography of the site sloping downward towards Obispo Road. Although the view from Avenue Alhambra is elevated due to the topography, the existing dense foliage and tall trees located on the parcel adjacent to the project site across Obispo Road generally obstruct views of the ocean when looking west. Further, the existing project site itself includes sparsely planted trees that also partially obstruct views of the ocean. Nevertheless, partial far-field views of the ocean can be viewed from Avenue Alhambra. Given the sloped topography of the site, views looking towards the ocean from Obispo Road include the parcel that includes dense foliage and several tall trees that obstruct nearly any view of the ocean as a result. Views looking toward Avenue Alhambra from Obispo Road include existing utility poles, single- and multi-family residential structures, as well as a stand of eucalyptus trees in the distance.

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<sup>4</sup> A preliminary evaluation of trees was prepared by Kevin R. Kielty, Certified Arborist WE#0476A of Kielty Arborist Services, LLC on Wednesday, May 27, 2015. A copy of this evaluation is included as Appendix A of this Initial Study.

## AESTHETICS

### Scenic Resources

This section describes the scenic resources relevant to the project site.

#### *Scenic Vistas*

The San Mateo County General Plan and the County LCP do 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.” Given the many steep-trending hillsides, hilltops, knolls, and ridgelines in the County, a multitude of potential “scenic vistas” are available throughout the region, such as views of the Pacific Ocean. However, at several vantage points in the project vicinity, various surrounding topographic characteristics, such as trees, dense foliage, and urban development, partially obstruct these vistas. The project site is a narrow 2.7-acre parcel of undeveloped land that offers partial far-field panoramic views of the Pacific Ocean from Avenue Alhambra where the site is at a higher elevation; however, as a result of the topography and foliage and trees of the adjacent parcel, views of the ocean from Obispo Road are not visible.

#### *Scenic Roadways and Corridors*

The stretch of Highway 1 just south of the project site by 160 feet is a County-designated scenic corridor; however, there is a dense stand of vegetation and trees along the west side of Obispo Road that serves as a buffer between Highway 1 and the project site. The San Mateo County General Plan identifies scenic views and corridors to be preserved and protected. 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.”<sup>5</sup> As further defined by the General Plan, a scenic road is “a designated travel route providing outstanding views of natural landscapes and attractive man-made development.”<sup>6</sup> The General Plan has designated several “scenic” roadways within the County. The portion of Highway 1 from the southern border of Half Moon Bay to the Santa Cruz County line is State designated scenic roadway. The project site is not located within this stretch of Highway 1 or within the vicinity of any other State scenic highway.

#### *Light and Glare*

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Excessive light and glare can be visually disruptive to humans and nocturnal animal species, and often reflects an unnecessarily high level of energy consumption. Light pollution has the potential to become an issue of increasing concern as new development contributes additional outdoor lighting installed for safety and other reasons. Existing sources of light and glare in the vicinity of the project site are typical of residential and commercial developments, such as interior lighting and some exterior lighting, as well as sources of glare from building windows and cars in the nearby parking lots. Because the existing project site is undeveloped, the project site itself currently does not currently emit any sources of light and/or glare.

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<sup>5</sup> San Mateo County General Plan, adopted 1986, Glossary, page 7G.

<sup>6</sup> San Mateo County General Plan, adopted 1986, Glossary, page 7G.



## 4.1.2 STANDARDS OF SIGNIFICANCE

An Initial Study was prepared for the project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the project would not result in significant environmental impacts for the following significance criteria and therefore, the topic is not discussed in this section.

- Substantially damage scenic resources, including but not limited to, tree, outcroppings, and historic buildings within a State scenic highway.

Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, it was determined that the project could result in a significant aesthetic impact if it would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially degrade the existing visual character or quality of the site and its surroundings.
3. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

## 4.1.3 IMPACT DISCUSSION

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<b>AES-1</b>	<b>The proposed project would not have a substantial adverse effect on a scenic vista.</b>
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The proposed project would result in a significant impact if it would have an adverse impact on a scenic vista. As described above, the proposed project would include construction of a new 12,425-square-foot, three-bay fire station at the eastern portion of the project site, which is currently undeveloped. The proposed fire station would be a maximum of 30 feet at its highest point at the center bay in order to accommodate fire safety vehicles and equipment. The remaining height of the structure would be 17 feet. A retaining wall would be incorporated into the north wall of the building, which would extend east and west of the proposed Fire Station 41 to create a buildable pad; however, the retaining wall would be constructed below the height of the structure itself and thus would not create any impacts to a scenic vista. Further, the retaining wall where visible, would be treated to create a rocklike appearance and minimally visible from Obispo Road due to the location of the proposed Fire Station 41. The project would also include native, drought tolerant landscaping along the frontage of the proposed Fire Station 41; however, none of the landscape would be at a height that would impede any views to or from the site. The proposed project would include a flagpole at a height of 30 feet, which would be similar in height to the proposed fire station building. Further, as part of the ancillary equipment needed for operation of the fire station, antennas would be mounted on the roof of the fire station. Although the exact height of the antennas is not yet determined, it is assumed they will be similar in height to the existing station and would not obstruct views. The proposed project would have a significant impact if it would allow development that would block or degrade a scenic view.

As discussed in Section 4.1.1, Environmental Setting, the San Mateo County General Plan and the County Local Coastal Program (LCP) do not define or officially designate any scenic vistas within the County.

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However, the General Plan does state that El Granada is largely influenced by its coastal setting, and mentions scenic resources such as views of the Pacific Ocean, rocky hills, dense stands of mature eucalyptus trees and sloped terrain.<sup>7</sup> Further, the stretch of Highway 1 south of the project site is a County-designated scenic corridor. Although there are no officially- designated scenic vistas from the project site, partial far-field views of the Pacific Ocean can be viewed from the general area, primarily from Avenue Alhambra where the topography slopes upward and provides an elevated vantage point (compared to views from Obispo Road). To illustrate the potential view impacts from the proposed project, photo simulations were prepared to show the effect of the placement and height of the structure on the project site. As shown on Figures 4.1-1 through 4.1-3, the near-field view is dominated by views of existing dense vegetation, trees, and utility poles along Obispo Road and Highway 1. Mid-to-far field views include views to the horizon including, partial views of the Pacific Ocean on clear days. However, much of the views from Avenue Alhambra are obstructed from the foliage and trees on the parcel adjacent to the project site across Obispo Road. While the proposed project would be visible from Avenue Alhambra, the topography makes it so that the structure would generally sit below the height of the existing landscape. Therefore, the structure would not likely impede views of the ocean beyond existing conditions.

The mid-to-far-field views would also be altered by the proposed project due to the inclusion of a new structure. Although a maximum height of 30 feet is proposed by the project, this height would only be for the center bay of the fire station and the other portions of the fire station would be below 30-feet. As shown below on Figures 4.1-1 to 4.1-3, the existing views of the horizon are partially obstructed by existing mature trees, dense foliage, and utility poles. While the placement of the structure on the project site would alter mid-to-far field view, the view would not be adversely affected because the building would be sited on a relatively small portion of the site along its eastern edge, leaving much of the remaining project site undeveloped. Further, views of the Pacific Ocean would still be visible and would not be substantially altered with construction of the proposed project, largely due to the topography and surrounding site conditions which naturally limit ocean views. The project also provides multiple opportunities where mid-to far-field views would be available, such as from the public parking lot located at the southern portion of the site.

Additionally, the Fire Station would undergo design review to ensure that that proposed project is designed in accordance with the regulations of the San Mateo County Municipal Code for the Design Review (DR) district and the Coastal Development (CD) district to ensure that the project is designed to preserve the overall scenic qualities of the area; is compatible with its surrounding area; and conforms the San Mateo County LCP. For example, Section 6565.10 of the San Mateo County Zoning Regulations for the DR district requires that Design Review Committee ensure that the project's design conforms to the applicable design standards and guidelines. Consequently, given that the proposed project would not significantly alter existing views of the ocean and upon Design Review approval where findings would be made determining that the project conforms to zoning regulations and LCP policies protecting scenic vistas, the proposed project would result in a *less-than-significant* impact with respect to scenic vistas.

**Significance Without Mitigation:** Less than significant.

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<sup>7</sup> County of San Mateo General Plan, page 4.14.

## AESTHETICS



Before



After

Source: PlaceWorks, 2016.

Figure 4.1-1  
Northwest View from Highway 1



## AESTHETICS



Before



After

Source: PlaceWorks, 2016.

Figure 4.1-2  
West View from Avenue Alhambra



## AESTHETICS



Before



After

Source: PlaceWorks, 2016.

Figure 4.1-3  
Southeast View from Avenue Alhambra

## AESTHETICS

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<b>AES-2</b>	<b>The proposed project would not degrade the existing visual character or quality of the site and its surroundings.</b>
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The proposed project would result in a significant impact if it would allow development that would negatively affect the existing visual quality of the El Granada Gateway District or environs. As discussed in Section 4.1.1, Environmental Setting, the existing project site itself is primarily vegetated with shrubs, grasses and an area of denser vegetation generally in the center of the project site. The area of the project site where construction would commence is characterized by grasses and shrubs, along with 11 sparsely planted non-native trees.<sup>8</sup>

The existing visual character in the vicinity of the project site includes mostly one- and two-story single-family residential homes, of varying architectural styles. There are also two multi-family buildings along Avenue Alhambra along the northern border of the project site. Both multi-family structures are approximately three stories, with parking on the ground floor as well as on-site paved surface parking. Along Avenue Portola, west of the project site, are commercial structures characterized by two- and three-story structures of varying design and materials, as well as the existing 4,000 square-foot Fire Station 41 located at 531 Obispo Road, El Granada, which is a single-story, two-bay structure with modest landscaping, including small patches of turf grass, and few ornamental trees. Across Obispo Road south of the project site is a vacant parcel of land consisting of dense trees and shrubbery, along with an area of an unimproved dirt/gravel parking lot.

As discussed in Chapter 3, Project Description, the proposed project would include construction of a new 12,425-square-foot, three-bay fire station at the eastern portion of the project site. The project would be a maximum of 30 feet at its highest point at the center bay in order to accommodate equipment; however, would generally include heights of up to 17 feet in other areas. In addition, the project would involve the construction of a small surface parking lot, safety lighting, a flag pole, communications antenna, landscaping features and potential sidewalk frontage improvements. Although the proposed project would alter the easternmost portion of the site by introducing a new structure to an existing undeveloped parcel, the overall character of the surrounding area would not be substantially degraded given the urbanized nature of the area and because the existing fire station is located directly adjacent across Avenue Portola from the proposed project site.

The applicant is requesting a variance to exceed the maximum 16-foot height standard in the EG zoning district. A variance from the applicable 50-foot front yard setback and the 20-foot rear yard setback is also requested due to the abnormal shaped lot, the substandard size (created by the zoning of the lot) and the topography of the lot. This is a unique site with additional EG zoning between this site and Highway One with extensive vegetation. The requested front yard setback will not directly impact any residential properties. The height variance is necessary to accommodate the fire protection equipment needed for Station 41. The building roof will be visible from Avenue Alhambra; however, it will not exceed 16 feet from that view point. The retaining wall and a portion of the building will be in the rear yard setback, however will have a low profile. The proposed project also requires an exception to the floor area ratio and imperious surface area limitations that is necessary to achieve the one-story facility design.

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<sup>8</sup> A preliminary evaluation of trees was prepared by Kevin R. Kielty, Certified Arborist WE#0476A of Kielty Arborist Services, LLC on Wednesday, May 27, 2015. A copy of this evaluation is included as Appendix A of this Initial Study.

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Further, as described above under discussion AES-1, the proposed project would undergo Design Review for conformance with all policies of the San Mateo County LCP to ensure the design; character, height, scale, and mass are compatible with the area. Although the project would construct a new fire station on an undeveloped parcel, the overall character of the site and surrounding area, which includes a mix of residential, commercial, and school facility uses, in addition to the existing fire station, would not be substantially altered by the proposed project.

The design of the fire station has taken into account all the appropriate regulations regarding design criteria while providing the necessary facilities for a new fire station, and the natural exterior colors and materials were selected to blend in with the surrounding area. Moreover, the County's site plan and design review process will ensure compliance with LCP and local regulations relating to the character of the area, and therefore, the proposed project would result in a *less-than-significant* impact to the character of the site or its surrounding area.

**Significance Without Mitigation:** Less than significant.

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<b>AES-3</b>	<b>The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.</b>
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The proposed project would have a significant impact if it would allow new development or activities that would introduce substantial new sources of light or glare. Substantial light and glare comes mainly from commercial areas, lights kept on at night, traffic on major arterials and freeways, and from street lights. Although there are existing sources of light and glare in the vicinity of the proposed project site typical of residential and commercial developments, such as interior lighting and some exterior lighting, as well as sources of glare from building windows and cars in the parking lots, the project site itself currently does not emit any sources of light and/or glare. Construction of the project would result in a new structure at an existing undeveloped site, resulting in additional sources of light and glare. The project would include new interior and exterior lighting for safety purposes, as well as introduce new sources of glare from windows and/or any reflective materials. However, lighting associated with construction of the project would be designed to be minimally intrusive and respect the form and character of the surrounding community. In addition to light from the building's interior during evening operational hours, exterior building lighting would also be installed for safety and would likely operate throughout the night; however, the surrounding urban uses will buffer the overall visual effect as observed from Highway 1. Further, because of the sloped topography of the project site, it is not likely that the lighting from the project site would result in any significant impacts to day or nighttime views in the area. In addition, the project would include new landscaping that would partially shield lighting from the project site. New lighting conditions are expected to be similar to existing conditions of the surrounding properties, and to the existing Fire Station 41 site, and would not increase light or glare such that day or nighttime views are affected.

All proposed development would be required to conform to San Mateo County Zoning Code regulations pertaining to light and glare which generally require that all light be shielded so that light is confined to the premises of the project site.

Additionally, CALGreen Section 5.106.8 regulates light pollution by establishing maximum Backlight, Uplight and Glare (BUG) ratings for light fixtures. The San Mateo County General Plan includes Policy 4.30,

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which would ensure the project is designed such that the transition between development and the scenic corridor is smooth through the use of landscaping and natural vegetation is used for screening purposes (see Figure 3-7, Proposed Landscape Plan, of Chapter 3, Project Description, of this Draft EIR). In addition, Policy 4.60 requires that exterior lighting in scenic corridors be kept to a minimum, and, where used, employ warm colors rather than cool tones and shield the scenic corridor from glare. The project would be required to conform to these applicable regulations in regards to lighting and glare through the Design Review process. For these reasons, a *less-than-significant* impact would result with respect to substantial light or glare which would adversely affect day or nighttime views in the area.

**Significance Without Mitigation:** Less than significant.

### 4.1.4 CUMULATIVE IMPACTS

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<b>AES-4</b>	<b>The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less than significant cumulative impacts with respect to aesthetics.</b>
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This section analyzes potential cumulative impacts to aesthetics and visual quality that could occur from a combination of the project with other past, present and reasonably foreseeable projects in the surrounding area. This analysis considers the specific projects listed in Chapter 4.0, Environmental Analysis, shown in table 4-1. A cumulative impact would be considered significant if, taken together with past, present and reasonably foreseeable projects in the identified area, it would result in a substantial adverse effect on a scenic vista, substantial degradation of the visual quality or character in the vicinity of the project or create a new source of substantial light or glare which would adversely affect day or nighttime view in the area. Although several other projects would occur within the vicinity of the project site, they are either at a distance far enough away or buffered from the project site from existing urban development, topography, and existing landscape that the proposed project would not result in cumulative impacts to scenic vistas, visual character, or light and glare. Additionally, while it is unknown at this time what type of development would occur on the Proposed Parcel A, uses allowed within that zoning designation include automobile service stations, bakeries, banks, bars, barber shops, confectionery stores, gift shops, restaurants, and cafes. However, these allowed uses, in addition to other development throughout the County would be subject to the same regulations and reviews by the County to ensure that all development conforms to applicable regulations addressing design compatibility. For example, future development would be required to install lighting in a manner which would shield light from spilling onto adjacent properties. For example, projects near wetland areas would be required to comply with LCP Policy 7.17 to ensure that all outdoor lighting be kept at a distance away from the wetland sufficient not to affect wildlife. Further, LCP Policy requires that all exterior lighting shall be limited to the necessary for safety and that all lighting must be placed, designed, and shielded in a manner to confine direct rays to the parcel where the lighting is located.

As described above, the General Plan and the San Mateo County Zoning Code contain provisions to regulate new development in order to maintain and protect scenic resources. These provisions include regulations pertaining to building height limits, setback requirements for buildings along key roadways, development standards from the Zoning Ordinance, and other architectural standards and site planning controls implemented through the design review process. Continued implementation of these existing regulations would ensure that cumulative impacts to designated scenic resources and visual character in



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the vicinity of the project site would be less than significant. Therefore, overall cumulative impacts would be *less than significant*.

**Significance Without Mitigation:** Less than significant.

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## 4.2 AIR QUALITY

This chapter describes the existing air quality setting in the project site and its surroundings and evaluates the potential air quality impacts that could result from construction and operation of the Fire Station 41 (El Granada) Replacement Project (proposed project). “Emissions” refers to the actual quantity of pollutant, measured in pounds per day or tons per year. “Concentrations” refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).

This chapter is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD) for project-level review, based on preliminary information available. The analysis contained herein focuses on air pollution from regional emissions and localized pollutant concentrations from buildout of the project. Construction criteria air pollutant emissions modeling is included in Appendix C, Air Quality and Greenhouse Gas Modeling, of this Draft EIR. A health risk assessment (HRA) for construction phase of the project is included in Appendix D, Construction Health Risk Assessment, of this Draft EIR.

### 4.2.1 ENVIRONMENTAL SETTING

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The State is divided into 15 air basins. El Granada is in the San Francisco Bay Area Air Basin (SFBAAB or Air Basin). The discussion below identifies the natural factors in the Air Basin that affect air pollution. Air pollutants of concern are criteria air pollutants and toxic air contaminants (TACs). Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality. The regulatory framework that is potentially applicable to the project is also summarized below.

#### 4.2.1.1 SAN FRANCISCO BAY AREA AIR BASIN

The BAAQMD is the regional air quality agency for the Air Basin, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.<sup>1</sup>

### Meteorology

The Air Basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range<sup>2</sup> splits in the Bay Area, creating a western coast gap; the Golden Gate, and an eastern coast gap; the Carquinez Strait, which allows air to flow in and out of the Bay Area and the Central Valley.

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<sup>1</sup> This section describing the Air Basin is from Bay Area Air Quality Management District, 2010 (Revised 2011), Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act (CEQA) Air Quality Guidelines*.

<sup>2</sup> The Coast Ranges traverses California’s west coast from Humboldt County to Santa Barbara County.

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The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

### **Wind Patterns**

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

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno Gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. An inversion is a change in the normal conditions that causes the temperature gradient to be reversed, or inverted. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result.

In the winter, the Air Basin frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occurs when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the Air Basin.

### **Temperature**

Summertime temperatures in the Air Basin are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the

## AIR QUALITY

Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit.

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

### Precipitation

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

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

### Wind Circulation

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

### Inversions

As described above, an inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the Air Basin. Elevation inversions<sup>3</sup> are more common in the summer and fall, and radiation inversions<sup>4</sup> are more common during the winter. The highest air pollutant concentrations in the Air Basin generally occur during inversions.

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<sup>3</sup> When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

<sup>4</sup> During the night, the ground cools off, radiating the heat to the sky.

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### 4.2.1.2 AIR POLLUTANTS OF CONCERN

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made. Pollutants can be classified as primary or secondary. Usually, primary pollutants are directly emitted from a process, such as ash from a volcanic eruption or wild fire, carbon monoxide gas from a motor vehicle exhaust, or sulfur dioxide released from factories. Secondary pollutants are not emitted directly. Rather, they form in the air when primary pollutants react or interact.

#### Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), and lead (Pb) are primary air pollutants. Of these, CO, SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. ROG and NO<sub>x</sub> are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) are the principal secondary pollutants. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas.

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little or no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the Air Basin. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds.

New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.<sup>5</sup> The Air Basin is designated under the California and National AAQS as being in attainment of CO criteria levels.<sup>6</sup>

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<sup>5</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

<sup>6</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed June 2016.

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- **Reactive Organic Gases (ROGs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as  $O_3$ . There are no AAQS established for ROGs. However, because they contribute to the formation of  $O_3$ , BAAQMD has established a significance threshold for this pollutant.
- **Nitrogen Oxides ( $NO_x$ )** are a by-product of fuel combustion and contribute to the formation of  $O_3$ ,  $PM_{10}$ , and  $PM_{2.5}$ . The two major components of  $NO_x$  are nitric oxide (NO) and nitrogen dioxide ( $NO_2$ ). The principal component of  $NO_x$  produced by combustion is NO, but NO reacts with oxygen to form  $NO_2$ , creating the mixture of NO and  $NO_2$  commonly called NOx.  $NO_2$  acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however,  $NO_2$  is only potentially irritating. There is some indication of a relationship between  $NO_2$  and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 to 3 years old) has also been observed at concentrations below 0.3 ppm.  $NO_2$  absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.<sup>7</sup> The Air Basin is designated an attainment area for  $NO_2$  under the National AAQS and California AAQS.<sup>8</sup>
- **Sulfur Dioxide ( $SO_2$ )** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of  $SO_2$ . When  $SO_2$  forms sulfates ( $SO_4$ ) in the atmosphere, together these pollutants are referred to as sulfur oxides ( $SO_x$ ). Thus,  $SO_2$  is both a primary and secondary criteria air pollutant. At sufficiently high concentrations,  $SO_2$  may irritate the upper respiratory tract.  
  
At lower concentrations and when combined with particulates,  $SO_2$  may do greater harm by injuring lung tissue.<sup>9</sup> The Air Basin is designated an attainment area for  $SO_2$  under the California and National AAQS.<sup>10</sup>
- **Suspended Particulate Matter ( $PM_{10}$  and  $PM_{2.5}$ )** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or  $PM_{10}$ , include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004-inch) or less. Inhalable fine particles, or  $PM_{2.5}$ , have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch).  
  
Some particulate matter, such as pollen, occurs naturally. In the Air Basin most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease.

<sup>7</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

<sup>8</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 2016.

<sup>9</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

<sup>10</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 2016.

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PM<sub>10</sub> bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The U.S. Environmental Protection Agency (USEPA) scientific review concluded that PM<sub>2.5</sub> penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM<sub>10</sub> standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the Air Basin. Wood burning in fireplaces and stoves is another large source of fine particulates.<sup>11</sup>

Both PM<sub>10</sub> and PM<sub>2.5</sub> may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individual with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms.<sup>12</sup> There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., <0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs. However, the EPA or California Air Resources Board (CARB) have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is also classified a carcinogen by the CARB.

The Air Basin is designated nonattainment under the California AAQS for PM<sub>10</sub> and nonattainment under both the California and National AAQS for PM<sub>2.5</sub>.<sup>13,14</sup>

- **Ozone (O<sub>3</sub>)** is commonly referred to as “smog” and is a gas that is formed when ROG<sub>s</sub> and NO<sub>x</sub>, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O<sub>3</sub> is a secondary criteria air pollutant. O<sub>3</sub> concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O<sub>3</sub> poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O<sub>3</sub> levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O<sub>3</sub> can also damage plants, trees, and materials such as rubber and fabrics.<sup>15</sup> The Air Basin

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<sup>11</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

<sup>12</sup> South Coast Air Quality Management District (SCAQMD), 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.

<sup>13</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 2016.

<sup>14</sup> On January 9, 2013, the EPA issued a final rule to determine that the SFBAAB has attained the 24-hour PM<sub>2.5</sub> National AAQS. This action suspends federal State Implementation Plan planning requirements for the Bay Area. The SFBAAB will continue to be designated nonattainment for the National 24-hour PM<sub>2.5</sub> standard until such time as BAAQMD elects to submit a redesignation request and a maintenance plan to EPA and EPA approves the proposed redesignation.

<sup>15</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.



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is designated nonattainment of the 1-hour California AAQS and 8-hour California and National AAQS for O<sub>3</sub>.<sup>16</sup>

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

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.<sup>17</sup> The Air Basin is designated in attainment of the California and National AAQS for lead.<sup>18</sup> Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the project.

## **Toxic Air Contaminants**

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 U.S. Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

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<sup>16</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 2016.

<sup>17</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

<sup>18</sup> California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 2016.

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Air toxics from stationary sources are also regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.<sup>19</sup> Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified diesel particulate matter (DPM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

### 4.2.1.3 REGULATORY FRAMEWORK

#### Federal Regulations and State Regulations

##### *Ambient Air Quality Standards*

The Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 4.2-1. These pollutants are ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride,

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<sup>19</sup> California Air Resources Board (CARB), 1999. *Final Staff Report: Update to the Toxic Air Contaminant List*.

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**TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

Pollutant	Averaging Time	California Standard <sup>a</sup>	Federal Primary Standard <sup>b</sup>	Major Pollutant Sources
Ozone (O <sub>3</sub> ) <sup>c</sup>	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	
Respirable Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>d</sup>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m <sup>3</sup>	
Lead (Pb)	30-Day Average	1.5 µg/m <sup>3</sup>	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	*	0.15 µg/m <sup>3</sup>	
Sulfates (SO <sub>4</sub> ) <sup>e</sup>	24 hours	25 µg/m <sup>3</sup>	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H <sub>2</sub> S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.

## AIR QUALITY

TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard <sup>a</sup>	Federal Primary Standard <sup>b</sup>	Major Pollutant Sources
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million;  $\mu\text{g}/\text{m}^3$ : micrograms per cubic meter

\* Standard has not been established for this pollutant/duration by this entity.

a. California standards for  $\text{O}_3$ , CO (except 8-hour Lake Tahoe),  $\text{SO}_2$  (1 and 24 hour),  $\text{NO}_2$ , and particulate matter ( $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b. National standards (other than  $\text{O}_3$ , PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The  $\text{O}_3$  standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For  $\text{PM}_{10}$ , the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above  $150 \mu\text{g}/\text{m}^3$  is equal to or less than one. For  $\text{PM}_{2.5}$ , the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

d. On December 14, 2012, the national annual  $\text{PM}_{2.5}$  primary standard was lowered from  $15 \mu\text{g}/\text{m}^3$  to  $12.0 \mu\text{g}/\text{m}^3$ . The existing national 24-hour  $\text{PM}_{2.5}$  standards (primary and secondary) were retained at  $35 \mu\text{g}/\text{m}^3$ , as was the annual secondary standard of  $15 \mu\text{g}/\text{m}^3$ . The existing 24-hour  $\text{PM}_{10}$  standards (primary and secondary) of  $150 \mu\text{g}/\text{m}^3$  also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over three years.

e. On June 2, 2010, a new 1-hour  $\text{SO}_2$  standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

Source: California Air Resources Board, 2016. Ambient Air Quality Standards. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, accessed May 4.

and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

## Regional Regulations

### Bay Area Air Quality Management District

BAAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Air Basin. BAAQMD is 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.
- Air Quality Management Planning.

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Air quality conditions in the Air Basin have improved significantly since the BAAQMD was created in 1955.<sup>20</sup> The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the Air Basin. The BAAQMD prepares ozone attainment plans for the National O<sub>3</sub> standard and clean air plans for the California O<sub>3</sub> standard. The BAAQMD prepares these AQMPs in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC).

The most recent adopted comprehensive plan is the 2010 Bay Area Clean Air Plan, which was adopted by BAAQMD on September 15, 2010, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

### BAAQMD 2010 Bay Area Clean Air Plan

The purpose of the 2010 Bay Area Clean Air Plan is to: 1) update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce O<sub>3</sub>; 2) consider the impacts of O<sub>3</sub> control measures on PM, TAC, and greenhouse gases (GHGs) in a single, integrated plan; 3) review progress in improving air quality in recent years; and 4) establish emission control measures in the 2009 to 2012 timeframe. The 2010 Bay Area Clean Air Plan also provides the framework for the Air Basin to achieve attainment of the California and National AAQS.

### Draft 2016 Bay Area Clean Air Plan/Regional Climate Protection Strategy

BAAQMD is in the process of updating the Clean Air Plan. The Draft 2016 Clean Air Plan/Regional Climate Protection Strategy (RCPS) will be a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. The Plan is required by the California Clean Air Act to identify potential rules, control measures, and strategies for the Bay Area to implement in order to meet state standards for ozone. The update will include the Bay Area's first-ever comprehensive RCPS, which will identify potential rules, control measures, and strategies that BAAQMD can pursue to reduce GHGs in the Bay Area.

### Attainment Status of the SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas.

Severity classifications for O<sub>3</sub> range from marginal, moderate, and serious to severe and extreme. The attainment status for the SFBAAB is shown below in Table 4.2-2. The Air Basin is currently designated a nonattainment area for California and National O<sub>3</sub>, California and National PM<sub>2.5</sub>, and California PM<sub>10</sub> AAQS.

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<sup>20</sup> Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *CEQA Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

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**TABLE 4.2-2 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN**

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment (serious)	Nonattainment
Ozone – 8-hour	Nonattainment	Classification revoked (2005)
PM <sub>10</sub>	Nonattainment	Unclassified/Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment <sup>a</sup>
CO	Attainment	Attainment
NO <sub>2</sub>	Attainment	Attainment
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. On January 9, 2013, the US EPA issued a final rule to determine that the SFBAAB has attained the 24-hour PM<sub>2.5</sub> National AAQS. This action suspends federal State Implementation Plan planning requirements for the Bay Area. The SFBAAB will continue to be designated nonattainment for the National 24-hour PM<sub>2.5</sub> standard until such time as BAAQMD elects to submit a redesignation request and a maintenance plan to US EPA and US EPA approves the proposed redesignation.

Source: California Air Resources Board, 2015, Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed December 2016.

### *BAAQMD Community Air Risk Evaluation Program*

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—diesel PM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.<sup>21</sup>

Modeled cancer risks from TACs in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to

<sup>21</sup> Bay Area Air Quality Management District (BAAQMD), 2014. *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective & Path Forward (2004 – 2013)*, April

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be located east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo
- Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, San Leandro, and Hayward
- San Jose
- Eastern side of San Francisco
- Concord
- Vallejo
- Pittsburgh and Antioch

The project site is within El Granada, which is not within or proximate to any of the seven CARE program impacted communities in the Bay Area.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein ( $C_3H_4O$ ). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.<sup>22</sup> Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.<sup>23</sup>

### *City/County Association of Governments of San Mateo County (C/CAG)*

The City/County Association of Governments of San Mateo County (C/CAG) is the congestion management agency (CMA) for San Mateo County. C/CAG is tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision-making and air quality. C/CAG's latest congestion management program (CMP) is the *2013 Congestion Management Program for San Mateo County*. C/CAG's countywide transportation model must be consistent with the regional transportation model developed by the Metropolitan Transportation Commission (MTC) with the Association of Bay Area Governments (ABAG) data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, C/CAG's updated CMP includes programs and policies regarding transportation systems management (TSM) and transportation demand management (TDM), which address efforts to increase efficiency of the existing system and encourage utilization of alternative modes of transportation consistent with the goals of reducing regional Vehicle Miles Traveled (VMT) in accordance with Senate Bill 375 (SB 375).

Strategies identified in the 2013 CMP for San Mateo County, where local jurisdictions are a responsible agency, include:<sup>24</sup>

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<sup>22</sup> Bay Area Air Quality Management District (BAAQMD), 2006. *Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area*.

<sup>23</sup> Bay Area Air Quality Management District (BAAQMD), 2010. *Air Toxics NSR Program, Health Risk Screening Analysis Guidelines*.

<sup>24</sup> City/County Association of Governments of San Mateo County (C/CAG), 2013. *Congestion Management Program for San Mateo County*. [http://ccag.ca.gov/wp-content/uploads/2014/05/2013-CMP\\_Final-Nov13.pdf](http://ccag.ca.gov/wp-content/uploads/2014/05/2013-CMP_Final-Nov13.pdf), accessed November 2016.

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- **CMP Roadway System:** Specify a system of highways and roadways for which traffic level of service (LOS) standards shall be established and monitored.
- **Traffic Level of Service (LOS) Standards:** Establish LOS standards to describe a roadway's operating condition for the roadways and intersections designated to be in the CMP Roadway System.
- **Performance Element:** Identify measures that, either individually or taken as a group, evaluate how the countywide transportation system (including all modes) is performing, and to present the results of the evaluation.
- **Trip Reduction and Travel Demand Element:** Describe San Mateo County's ongoing efforts to reduce congestion and attain the Traffic LOS Standards through a variety of actions.
- **Land Use Impact Analysis Program:** Determine the impacts of land use decisions upon regional transportation routes and air quality.
- **Deficiency Plan Guidelines:** Guidelines for local jurisdictions (cities and the County) to remain in conformance with the CMP when the LOS for a CMP roadway segment or intersection deteriorates below the established standard.
- **Seven-Year Capital Improvement Program:** To maintain or improve the traffic LOS standards and to mitigate impacts to the regional transportation system of land use decisions made by local jurisdictions (cities and the County).
- **Data Base and Travel Model:** Develop a uniform data base to support a countywide transportation computer model that can be used to project traffic impacts associated with proposed land developments.
- **Monitoring and Updating the CMP:** Establish monitoring programs to determine local government conformance with the San Mateo County CMP and ensure all elements of the CMP be monitored on at least a biennial basis by the designated CMA.
- **Vehicle Registration Fee Program:** Impose an annual fee on motor vehicles registered in San Mateo County for transportation-related congestion mitigation and pollution mitigation programs and projects.
- **Traffic Impact Analysis Policy:** Provide uniform procedures to analyze traffic impacts on the CMP network from projects and cumulative traffic impacts on the CMP network from General Plans and Specific Area Plans, and to set thresholds for mitigations.

### *Plan Bay Area: Strategy for a Sustainable Region*

Plan Bay Area is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). Plan Bay Area was adopted jointly by ABAG and MTC July 18, 2013.<sup>25</sup> The SCS lays out a development scenario for the region, which when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. According to Plan Bay Area, the Plan meets a

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<sup>25</sup> It should be noted that the Bay Area Citizens filed a lawsuit on MTC's and ABAG's adoption of *Plan Bay Area*.



16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated within PDAs. PDAs are expected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or 744,230) of new jobs in the region.<sup>26</sup> The project site is not within a PDA.<sup>27</sup>

#### 4.2.1.4 EXISTING CONDITIONS

##### Attainment Status of the SFBAAB

Areas that meet AAQS are classified as attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O<sub>3</sub> range from marginal, moderate, and serious to severe and extreme. The attainment status for the Air Basin is shown below in Table 4.2-3. The Air Basin is currently designated a nonattainment area for California and National O<sub>3</sub>, California and National PM<sub>2.5</sub>, and California PM<sub>10</sub>.

**TABLE 4.2-3 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN**

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment
PM <sub>10</sub>	Nonattainment	Unclassified/Attainment
PM <sub>2.5</sub>	Nonattainment	Unclassified/Attainment <sup>a</sup>
CO	Attainment	Attainment
NO <sub>2</sub>	Attainment	Unclassified
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. in December 2014, US EPA issued final area designations for the 2012 primary annual PM<sub>2.5</sub> National AAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015 (BAAQMD 2016).

Source: California Air Resources Board, 2015, Area Designations Maps: State and National. <http://www.arb.ca.gov/design/adm/adm.htm>, accessed December 2016.

<sup>26</sup> Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. *Plan Bay Area: Strategy for a Sustainable Region*, July 18.

<sup>27</sup> Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. *Plan Bay Area*. <http://geocommons.com/maps/141979>.

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### Existing Ambient Air Quality

#### *Existing Air Quality Trends*

Existing levels of ambient air quality and historical trends and projections in the vicinity of El Granada have been documented by measurements made by the BAAQMD. The Redwood City Monitoring Station is the closest air quality monitoring station to the project site. However, the Redwood City Monitoring Station does not monitor PM<sub>10</sub>; therefore, data from the San Francisco – Arkansas Street Monitoring Station were used to supplement data for PM<sub>10</sub>. Data from these monitoring stations are summarized in Table 4.2-4, below. The data show occasional violations of the State O<sub>3</sub>, State PM<sub>10</sub>, and federal PM<sub>2.5</sub> standards. The federal O<sub>3</sub> standard has been exceeded twice in the last five years. The CO, NO<sub>2</sub>, and federal PM<sub>10</sub> standards have not been exceeded in the last five years in the vicinity of project site.

#### *Existing Fire Station 41 Emissions*

The project would construct a new modernized three-bay fire station on a new site to replace the existing aging fire station in El Granada 600-feet from the existing location. The existing fire station generates long-term air pollutant emissions from the burning of fossil fuels in fire trucks and other vehicles (mobile sources), energy use for cooling, heating, and cooking (energy), and landscape equipment use and consumer products (area sources). The project involves the construction of a new 12,425-square-foot fire station building to replace the existing two-bay 4,000-square-foot facility. Criteria air pollutants generated by existing land uses in the El Granada Fire Station 41 project area were modeled with CalEEMod 2013.2.2.

### Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution.

Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population.

Existing sensitive receptors proximate to the project site include the surrounding residential units, Wilkinson School, and El Granada Elementary School. Sensitive receptors to the proposed project are the apartments to the north (approximately 115 feet from the center of the proposed project), the single-family homes approximately 175 feet to the west (beyond Avenue Alhambra), the multi-family homes approximately 250 feet to the northwest, the Wilkinson School approximately 450 feet to the southeast

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**TABLE 4.2-4 AMBIENT AIR QUALITY MONITORING SUMMARY**

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2011	2012	2013	2014	2015
<b>Ozone (O<sub>3</sub>)<sup>a</sup></b>					
State 1-Hour ≥ 0.09 ppm	0	0	0	0	0
State 8-hour ≥ 0.07 ppm	0	0	1	0	1
Federal 8-Hour > 0.075 ppm	0	0	1	0	1
Maximum 1-Hour Conc. (ppm)	0.076	0.063	0.075	0.086	0.086
Maximum 8-Hour Conc. (ppm)	0.062	0.055	0.076	0.066	0.071
<b>Carbon Monoxide (CO)<sup>a</sup></b>					
State 8-Hour > 9.0 ppm	0	0	*	*	*
Federal 8-Hour ≥ 9.0 ppm	0	0	*	*	*
Maximum 8-Hour Conc. (ppm)	1.67	1.81	*	*	*
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	56	60	53	55	47
<b>Coarse Particulates (PM<sub>10</sub>)<sup>a</sup></b>					
State 24-Hour > 50 µg/m <sup>3</sup>	0	1	0	0	0
Federal 24-Hour > 150 µg/m <sup>3</sup>	0	0	0	0	0
Maximum 24-Hour Conc. (µg/m <sup>3</sup> )	45.6	50.6	44.3	35.9	47.0
<b>Fine Particulates (PM<sub>2.5</sub>)</b>					
Federal 24-Hour > 35 µg/m <sup>3</sup>	1	0	3	0	0
Maximum 24-Hour Conc. (µg/m <sup>3</sup> )	39.7	34.3	39.0	35.0	34.6

Notes: ppm: parts per million; ppb: parts per billion; µg/m<sup>3</sup>: or micrograms per cubic meter; \* = insufficient data

a. Data from San Francisco Monitoring Station for years 2011-2015.

Source: California Air Resources Board, 2015, Air Pollution Data Monitoring Cards (2011, 2012, 2013, 2014, and 2015), <http://www.arb.ca.gov/adam/index.html>, accessed July 18, 2016.

(beyond Coronado Street), and El Granada Elementary School is located approximately 500 feet from the project site.

## 4.2.2 STANDARDS OF SIGNIFICANCE

An Initial Study was prepared for the proposed project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the project would not result in significant environmental impacts with regard to the following significance criteria and therefore, are not discussed in this chapter.

- 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 during building operation.
- Expose sensitive receptors to substantial pollutant concentrations during building operation
- Create objectionable odors affecting a substantial number of people.

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Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, it was determined that the proposed project could result in a significant air quality impact if it would:

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation during building construction.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
3. Expose sensitive receptors to substantial pollutant concentrations during building construction.

### 4.2.2.1 BAAQMD SIGNIFICANCE CRITERIA

The BAAQMD “CEQA Air Quality Guidelines” were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.<sup>28</sup>

## Criteria Air Pollutant and Precursors

### *Regional Significance Criteria*

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.2-5. Criteria for both the construction and operational phases of the project are shown.

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<sup>28</sup> On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association versus BAAQMD, Case No. A135335 and A136212 (Court of Appeal, First District, August 13, 2013).*)

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**TABLE 4.2-5 BAAQMD REGIONAL (MASS EMISSIONS) CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS**

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (lbs/Day)	Average Daily Emissions (lbs/Day)	Maximum Annual Emissions (Tons/Year)
ROG	54	54	10
NO <sub>x</sub>	54	54	10
PM <sub>10</sub>	82 (Exhaust)	82	15
PM <sub>2.5</sub>	54 (Exhaust)	54	10
PM <sub>10</sub> and PM <sub>2.5</sub> Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix D: Threshold of Significance Justification, in California Environmental Quality Act Air Quality Guidelines.

As identified in the Initial Study (see Appendix A to this Draft EIR), the proposed project would not exceed the BAAQMD screening-level sizes; and therefore, the project would not exceed the thresholds identified in the table.

### *Local CO Hotspots*

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).<sup>29</sup>

As identified in the Initial Study (see Appendix A to this DEIR), the proposed project would not meet these criteria and therefore a CO hotspot analysis is not warranted.

<sup>29</sup> Bay Area Air Quality Management District, 2011 (revised). *CEQA Air Quality Guidelines*.

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### Community Risk and Hazards

BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and PM<sub>2.5</sub> because emissions of these pollutants can have significant health impacts at the local level. For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.<sup>30</sup> The following list outlines the health risk assessment analysis that is necessary for the proposed project under BAAQMD's CEQA Guidelines.

- The proposed project would generate TACs and PM<sub>2.5</sub> during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.<sup>31</sup> Construction-related TAC and PM<sub>2.5</sub> impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.<sup>32</sup>
- The proposed project involves construction of a new 12,425-square-foot fire station at a new location directly adjacent across Avenue Portola from the existing fire station which would cease operations upon completion of the project. Major sources of TAC and PM<sub>2.5</sub> emissions in the Bay Area are typically associated with industrial land uses, such as manufacturing/chemical processing or warehouses that generate 100 or more truck trips. Operation of the fire station would not generate substantial truck traffic or stationary sources of TACs and PM<sub>2.5</sub>. Therefore, the proposed project is not a major source of operational TACs and stationary PM<sub>2.5</sub>. BAAQMD thresholds related to siting new sources of TACs and PM<sub>2.5</sub> near existing or planned sensitive receptors is not applicable.
- The proposed project is not considered a sensitive land use that would warrant an on-site community risk and hazards evaluation. Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities. Because the proposed project is not siting sensitive individuals most susceptible to poor air quality, such as children, the elderly, and those with pre-existing serious health problems, a community risk and hazards thresholds for operation of the project is not required. Additionally, as clarified under the *California Building Industry Association v. BAAQMD* (2015) 62 Cal.4th 369 (Case No. S213478), CEQA does not require an EIR to analyze the environmental effects of attracting development and people to an area.

The thresholds identified below pertain to the project's construction period emissions:

#### Community Risk and Hazards – Project

Project-level emissions of TACs or PM<sub>2.5</sub> from individual sources within 1,000 feet of the project that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;

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<sup>30</sup> Bay Area Air Quality Management District, 2011 (revised). *CEQA Air Quality Guidelines*.

<sup>31</sup> Bay Area Air Quality Management District, 2010. Screening Tables for Air Toxics Evaluations During Construction.

<sup>32</sup> Bay Area Air Quality Management District, 2011 (revised). *CEQA Air Quality Guidelines*.

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- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;
- An incremental increase of greater than 0.3 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) annual average  $\text{PM}_{2.5}$  from a single source would be a significant cumulatively considerable contribution.<sup>33</sup>

### *Community Risk and Hazards – Cumulative*

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- $0.8 \mu\text{g}/\text{m}^3$  annual average  $\text{PM}_{2.5}$ .<sup>34</sup>

## 4.2.3 IMPACT DISCUSSION

### Methodology

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts of the proposed project. Construction-related criteria air pollutants emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. Construction emissions associated with the proposed project are based on the construction schedule provided by the project applicant. An HRA was conducted for the proposed project using Lakes Environmental AERMOD View (ISCST3 air dispersion model).

This section discusses the air quality impacts of the project. This discussion is organized by and responds to each of the potential impacts identified in the thresholds of significance.

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<b>AIR-1</b>	<b>During construction, the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.</b>
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BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including reactive organic gases (ROG), oxides of nitrogen ( $\text{NO}_x$ ), coarse inhalable particulate matter ( $\text{PM}_{10}$ ), and fine inhalable particulate matter ( $\text{PM}_{2.5}$ ). Development projects below these significant thresholds (listed in Table 4.2-5) are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation.

<sup>33</sup> Bay Area Air Quality Management District, 2011 (revised). *CEQA Air Quality Guidelines*.

<sup>34</sup> Bay Area Air Quality Management District, 2011 (revised). *CEQA Air Quality Guidelines*.

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### Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of reactive organic gases (ROG), oxides of nitrogen (NO<sub>x</sub>), CO, PM<sub>10</sub>, and PM<sub>2.5</sub>.

#### *Fugitive Dust*

Ground-disturbing activities would generate fugitive dust. Fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) are considered to be significant unless the project implements the BAAQMD's Best Management Practices (BMPs) for fugitive dust control during construction. PM<sub>10</sub> is typically the most significant source of air pollution from the dust generated from construction. The amount of dust generated during construction would be highly variable and is dependent on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. If uncontrolled, PM<sub>10</sub> and PM<sub>2.5</sub> levels downwind of actively disturbed areas could possibly exceed State standards. Consequently, construction-related criteria pollutant emissions are potentially *significant*.

**Impact AIR-1:** During construction of the project, construction activities would generate fugitive dust during ground-disturbing activities and would generate substantial construction-related exhaust emissions from on-site construction equipment and on-road vehicle trips that exceeds the BAAQMD significance thresholds identified in Table 4.2-5.

**Mitigation Measure AIR-1:** The Applicant shall require their construction contractor to comply with the following BAAQMD Best Management Practices for reducing construction emissions of PM<sub>10</sub> and PM<sub>2.5</sub>:

- Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads (e.g., Obispo Road, Avenue Alhambra, and Coronado Road), parking areas, and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.



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- Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand).
- Limit vehicle traffic speeds on unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

The County of San Mateo Planning and Building Official or their designee shall verify compliance that these measures have been implemented during normal construction site inspections.

**Significance With Mitigation:** Less than significant. Mitigation Measure AIR-1 would require adherence to the current BAAQMD's basic control measures for reducing construction emissions of PM and would ensure impacts from fugitive dust generated during construction activities are *less than significant*.

### Construction Exhaust Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. BAAQMD's CEQA Guidelines identifies screening criteria for construction-related criteria air pollutant emissions. Since BAAQMD's CEQA Guidelines does not have specific screening criteria for fire stations, the screening criterion for a government civic center was used as the best fit. Based on BAAQMD's screening criteria, civic centers of 277,000 square feet or larger have the potential to generate a substantial increase in criteria air pollutant emissions and would need further analysis. The project is substantially below the BAAQMD screening threshold and construction would generate nominal criteria air pollutant emissions. Additionally, the small scale of the proposed project does not have the potential to result in overlapping construction activities (e.g., overlap of grading and building construction phases), thus maximum daily emissions associated with construction will not be summed across phases and would be unlikely to exceed BAAQMD thresholds. Therefore, a quantified analysis of the project's construction emissions is not necessary and the impact is *less than significant*.

<b>AIR-2</b>	<b>The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).</b>
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This section analyzes potential impacts related to air quality that could occur from a combination of the project with other past, present, and reasonably foreseeable projects within the Air Basin. Any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. Due to the extent of the area potentially impacted from cumulative project emissions (the Air Basin), a project is cumulatively significant when project-related emissions exceed the BAAQMD emissions thresholds shown in Table 4.2-5. As described in this report, the proposed

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project would have a significant construction impact (see AIR-1), and off-site community risks and hazards impact (see AIR-3). Therefore, the project's contribution to cumulative air quality impacts would be *significant*.

**Impact AIR-2:** Construction of the proposed project would cumulatively contribute to the non-attainment designations of the SFBAAB.

**Mitigation Measure AIR-2:** Implementation of Mitigation Measures AIR-1 and AIR-3 would reduce cumulative air quality impacts.

**Significance With Mitigation:** Less than significant. Mitigation Measures AIR-1 would reduce impacts from fugitive dust generated during construction activities. Mitigation Measure AIR-3 would reduce exposures of sensitive receptors to substantial concentrations of TACs and PM<sub>2.5</sub>. With these mitigation measures, regional and localized construction emissions would not exceed the BAAQMD significance thresholds. Consequently, the project would not cumulatively contribute to the nonattainment designations of the Air Basin and impacts would be *less than significant* with mitigation.

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<b>AIR-3</b>	<b>Construction of the proposed project would not expose sensitive receptors to substantial concentrations of air pollution.</b>
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## Off-Site Community Risk and Hazards During Construction

The project would elevate concentrations of toxic air contaminants (TACs) and diesel-PM<sub>2.5</sub> in the vicinity of sensitive land uses during construction activities. The latest version of the BAAQMD CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on sensitive receptors.<sup>35</sup> project construction is anticipated to take place starting at the beginning of October 2016 and be completed by the end of December 2017 (approximately 315 workdays). The nearest off-site sensitive receptors to the project site are the single-family residences to the north across Avenue Alhambra, as well as the multi-family units directly adjacent to the project site (approximately 100 feet from the site). Other nearby sensitive receptors includes students at Wilkinson School (grades K-8) to the east and at El Granada Elementary School (grades K-5) further to the east. The BAAQMD has developed Screening Tables for Air Toxics Evaluation During Construction (2010) that evaluate construction-related health risks associated with residential, commercial, and industrial projects.<sup>36</sup> According to the screening tables, the residences are closer than the distance of 100 meters (328 feet) that would screen out potential health risks and therefore could be potentially impacted from the proposed construction activities. Thus, construction activities in relation to sensitive receptors could occur within the BAAQMD construction-related health risks screening distance. Consequently, a construction HRA of TACs and PM<sub>2.5</sub> was prepared (see Appendix D of this Draft EIR).

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<sup>35</sup> Bay Area Air Quality Management District (BAAQMD), 2012 Revised, California Environmental Quality Act Air Quality Guidelines.

<sup>36</sup> Bay Area Air Quality Management District (BAAQMD), 2010, Screening Tables for Air Toxics Evaluation During Construction, Version 1.0, May.

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Construction emissions were based on a 15-month construction duration, construction schedule, and off-road equipment list provided by the project construction contractor. The United States Environmental Protection Agency (USEPA) ISCST3 dispersion modeling program was used to estimate excess lifetime cancer risk, chronic non-cancer hazard index for non-carcinogenic risk, and the PM<sub>2.5</sub> maximum annual concentrations at the nearest sensitive receptors. Results of the analysis are shown below in Table 4.2-6.

**TABLE 4.2-6 CONSTRUCTION RISK SUMMARY**

Receptor	Project Level Risk		
	Cancer Risk (per million)	Chronic Hazards	PM <sub>2.5</sub> (µg/m <sup>3</sup> ) <sup>a</sup>
Maximum Exposed Receptor – Residence	<b>81.0</b>	0.24	<b>0.57</b>
Wilkinson School (K-8)	1.0	0.028	0.07
El Granada Elementary School (K-5)	0.2	0.005	0.01
BAAQMD Threshold	10	1.0	0.3
<b>Exceeds Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.

a. From year 2016, which represents the highest maximum annual PM<sub>2.5</sub> concentration.

Source: Lakes AERMOD View, 9.1 (2015).

The results of the HRA are based on the maximum receptor concentration over a 15-month construction exposure duration for off-site receptors, assuming 24-hour outdoor exposure. Risk is based on the updated OEHHA Guidance:<sup>37</sup>

- Cancer risk for the maximum exposed off-site resident, at the single-family residence immediately north of the project across Avenue Alhambra, from unmitigated construction activities related to the proposed project were calculated to be 81 in a million and would exceed the 10 in a million significance threshold. Using the 2015 OEHHA guidance, the calculated total cancer risk for the off-site residents incorporates the individual risk for infant and childhood exposures into one risk value. Therefore only one cancer risk value for the off-site residents was determined using the 2015 OEHHA Guidance Manual. However, the calculated cancer risks for students at Wilkinson School and El Granada Elementary School are well below the 10 in a million significance threshold.
- For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for off-site sensitive receptors from the proposed project. Therefore, chronic non-carcinogenic hazards are within acceptable limits.
- The highest PM<sub>2.5</sub> annual concentration of 0.57 µg/m<sup>3</sup> at the residences across Avenue Alhambra would be above the BAAQMD significance threshold of 0.3 µg/m<sup>3</sup>. The determined PM<sub>2.5</sub> annual concentrations at the off-site schools are below the 0.3 µg/m<sup>3</sup> significance threshold.

Consequently, the proposed project would expose sensitive receptors to substantial concentrations of air pollutant emissions during construction, and impacts would be *significant*.

<sup>37</sup> Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

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**Impact AIR-3:** Construction activities of the project could expose sensitive receptors to substantial concentrations of TAC and PM<sub>2.5</sub>.

**Mitigation Measure AIR-3:** During construction, the construction contractor(s) shall use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) and engines that meet the USEPA Certified Tier 3 emissions standards for all equipment of 25 horsepower or more.

The construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the County of San Mateo Building Division official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations. The construction contractor shall ensure that all non-essential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board Rule 2449. Prior to issuance of any construction permit, the construction contractor shall ensure that all construction plans submitted to the County of San Mateo Planning Division and/or Building Division clearly show the requirement for Level 3 DPF and USEPA Tier 3 or higher emissions standards for construction equipment over 25 horsepower.

**Significance With Mitigation:** Less than significant. Mitigation Measures AIR-3 would reduce the project's localized construction emissions. The mitigated health risk values were calculated and are summarized in Table 4.2-7. The results indicate that, with mitigation, cancer risk and PM<sub>2.5</sub> would be less than the BAAQMD's significance thresholds for residential and school-based receptors. Therefore, the project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant*.

**TABLE 4.2-7 CONSTRUCTION RISK SUMMARY – MITIGATED**

Receptor	Cancer Risk (per million)	Chronic Hazards	PM <sub>2.5</sub> (µg/m <sup>3</sup> ) <sup>a</sup>
Maximum Exposed Receptor - Residence	8.4	0.020	0.06
Wilkinson School (K-8)	0.10	0.002	0.01
El Granada Elementary School (K-5)	0.02	<0.001	<0.01
BAAQMD Threshold	10	1.0	0.3
<b>Exceeds Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.

Risks incorporate Mitigation Measure AIR-3, which includes using construction equipment with Level 3 Diesel Particulate Filters and Tier 3 Engines for equipment over 25 horsepower.

a. From year 2017 which represents the highest maximum annual PM<sub>2.5</sub> concentration.

Source: Lakes AERMOD View, 9.1 (2015).

## 4.2.4 CUMULATIVE IMPACTS

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<b>AIR-4</b>	<b>Implementation of the proposed project would cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.</b>
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As described under AIR-2, regional air quality impacts were identified as significant; therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a significant cumulative impact with respect to air quality. Therefore, the impact would be *significant*.

**Impact AIR-4:** Implementation of the project would cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.

**Mitigation Measure AIR-4:** Implementation of Mitigation Measures AIR-1 and AIR-3 would reduce cumulative air quality impacts.

**Significance With Mitigation:** Less than significant. Mitigation Measures AIR-1 would reduce impacts from fugitive dust generated during construction activities. Mitigation Measure AIR-2 would reduce exposures of sensitive receptors to substantial concentrations of TACs and PM<sub>2.5</sub>. With these mitigation measures, regional and localized construction emissions would not exceed the BAAQMD significance thresholds. Consequently, the project would not cumulatively contribute to the nonattainment designations of the Air Basin and impacts would be *less than significant* with mitigation.

## **AIR QUALITY**

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**BIOLOGICAL RESOURCES**

### 4.3 BIOLOGICAL RESOURCES

This chapter describes existing biological resources in the project site and its surroundings and evaluates the potential biological resources impacts that could result from implementation of the proposed project. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of the proposed project-specific and cumulative impacts.

Biological resources associated with the project site were identified through a review of available background information and a field reconnaissance survey. Available documentation was reviewed to provide information on general resources in the El Granada area, presence of sensitive natural communities, and the distribution and habitat requirements of special-status species that have been recorded from or are suspected to occur in the project vicinity. This included review of the occurrence records of the California Natural Diversity Data Base of the California Department of Fish and Wildlife (CDFW), data from the National Wetland Inventory, as well as the following assessments on the site prepared for the applicant, which are included as appendices to the Initial Study. The Initial Study and its appendices are included as Appendix A to this Draft EIR.

- Preliminary Environmentally Sensitive Habitat Area Assessment.<sup>1</sup> The Preliminary Environmentally Sensitive Habitat Area Assessment (PESHAA) describes the existing habitat conditions on the site, focusing on the riparian corridor of the unnamed drainage that bisects the site, and an assessment of the potential for occurrence of the federally-threatened California red-legged frog (*Rana draytonii*) and the State and federally-endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). A conclusion regarding the required setback from the limits of riparian vegetation necessary to comply with Policies 7.7 - 7.13 of the San Mateo County Local Coastal Program (LCP), together with recommendations to insure no inadvertent take of California red-legged frog and San Francisco garter snake occurs during construction.
- An inspection and evaluation<sup>2</sup> of the trees on the site, focusing on 11 trees outside the riparian corridor.
- Riparian Setback Analysis<sup>3</sup> providing an assessment of the condition of the riparian corridor on the site and applicability of Policy 7.11 of the LCP as relates to required setbacks for perennial and intermittent streams.

The EIR biologist conducted a field reconnaissance survey on September 13, 2016, and prepared a habitat suitability assessment for special-status species and a preliminary wetland assessment for possible jurisdictional waters. Existing conditions on the site were evaluated, and adequacy of assessments prepared for the applicant was reviewed. No detailed surveys were conducted during preparation of this section of the EIR, as none were considered necessary following the field reconnaissance based on the general absence of sensitive biological resources in the area of the proposed project improvements. The following provides a summary of existing conditions on the site, and an assessment of the potential impacts of the proposed project on biological resources.

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<sup>1</sup> WRA Environmental Consultants, 2015. Environmental Sensitive Habitat Area Assessment at the Proposed Coastsides Fire District Project in El Granada, April 16.

<sup>2</sup> Kielty Arborist Services, 2015. Coastsides Fire Station #41, June 3.

<sup>3</sup> TRA Environmental Sciences, Inc., 2014. Riparian Setback Analysis – Obispo Road Property, August 7.

## BIOLOGICAL RESOURCES

### 4.3.1 ENVIRONMENTAL SETTING

#### 4.3.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, and local regulations and policies pertaining to biological resources that are applicable to the proposed project.

#### **Federal Regulations**

The federal laws that regulate the treatment of biological resources include the Endangered Species Act, the Migratory Bird Treaty Act, and the Clean Water Act. The following outlines the relevant principles of each.

##### *Federal Endangered Species Act (FESA)*

The U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) are responsible for implementation of the Federal Endangered Species Act (FESA) (16 U.S.C. Section 1531 *et seq.*). The Act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. “Endangered” species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and “threatened” species, subspecies, or distinct population segments are likely to become endangered in the near future.

Section 9 of the FESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species’ recovery. Take is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

##### *Migratory Bird Treaty Act*

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. Wording in the MBTA makes it clear that most actions that result in “taking” or possession (permanent or temporary) of a protected species can be a violation of the Act. The word “take” is defined as meaning “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” The provisions of the MBTA are nearly absolute; “except as permitted by regulations” is the only exception. Examples of permitted actions



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that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

### *Clean Water Act*

The federal Clean Water Act (CWA) is the primary federal law regulating water quality. Implementing the CWA is the responsibility of the United States Environmental Protection Agency (U.S. EPA). The U.S. EPA depends on other agencies, such as individual state government and the United States Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Sections 401 and 404 apply to activities that would impact waters of the U.S. (such as creeks, ponds, wetlands, etc.).

### Section 404

The USACE, the federal agency charged with investigating, developing, and maintaining the country’s water and related resources, is responsible under Section 404 of the CWA for regulating the discharge of fill material into waters of the U.S. Waters of the United States and their lateral limits are defined in Part 328.3(a) of Title 33 of the Code of Federal Regulations (CFR) and include streams that are tributaries to navigable waters and adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark or the limit of adjacent wetlands. Any permanent extension of the limits of an existing water of the U.S., whether natural or human-made, results in a similar extension of USACE jurisdiction.<sup>4</sup>

In general, a USACE permit must be obtained before an individual project can place fill or grade in wetlands or other waters of the U.S. and mitigation for such actions will be required based on the conditions of the USACE permit. The USACE is required to consult with the USFWS and/or the NMFS under Section 7 of the FESA if the action being permitted under the CWA could affect federally listed species.

### Section 401

Pursuant to Section 401 of the Clean Water Act, projects that require a USACE permit for discharge of dredge or fill material must obtain a water quality certification or waiver that confirms the project complies with State water quality standards, or a no-action determination, before the USACE permit is valid. State water quality is regulated and administered by the State Water Resources Control Board (SWCB). The Plan Area is within jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). In order for the applicable RWQCB to issue a 401 certification, a project must demonstrate compliance with the California Environmental Quality Act (CEQA).

## State Regulations

State laws regulating biological resources include the California Endangered Species Act, the California Fish and Game Code, and the California Native Plant Protection Act, as described below.

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<sup>4</sup> 33 CFR Part 328.5.

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### *California Endangered Species Act*

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 *et seq.*) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and State lists, compliance with the FESA satisfies the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only State listed, the project proponent must apply for a take permit under Section 2081(b).

### *California Fish and Game Code*

Under the California Fish and Game Code, the CDFW provides protection from “take” for a variety of species. The CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601 to 1606 of the California Fish and Game Code. The California Fish and Game Code stipulates that it is “unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake” without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW’s jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Fish and Game Code Section 3503.5 prohibits “take,” possession, or destruction of any raptor (e.g., bird of prey species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations of this law include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

### *California Native Plant Protection Act*

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, “take” of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the California Native Plant Protection Act, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under the CESA but rather under CEQA.

California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species:<sup>5</sup>

- Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
- Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
- Rank 2A – Plants Presumed Extirpated in California, But Common Elsewhere
- Rank 2B – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

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<sup>5</sup> California Native Plant Society, 2010. The CNPS Ranking System. <http://www.cnps.org/cnps/rareplants/ranking.php>, accessed August 15, 2016.

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- Rank 3 – Plants About Which More Information is Needed - A Review List
- Rank 4 – Plants of Limited Distribution - A Watch List

### *California Natural Communities*

Sensitive natural communities are natural community types considered to be rare or of a “high inventory priority” by the CDFW. Although sensitive natural communities have no legal protective status under the federal ESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project’s impact on any particular sensitive natural community will depend on that natural community’s relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland and/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.

### *Porter-Cologne Water Quality Control Act*

This Act authorizes the RWQCB to regulate the discharge of waste that could affect the quality of the State’s waters. Projects that do not require a federal permit may still require review and approval by the RWQCB. The RWQCB focuses on ensuring that projects do not adversely affect the “beneficial uses” associated with waters of the State. In most cases, the RWQCB requires the integration of water quality control measures into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

## Local Regulations

This section describes the existing plans and policies that pertain to biological resources in the site vicinity. Of particular relevance are the policies from the LCP, which identifies permitted uses within Environmentally Sensitive Habitat Areas (ESHAs) such as riparian corridors where they occur in the Coastal Zone. The unnamed drainage and associated riparian vegetation that bisects the site qualifies as a regulated riparian corridor as defined in Policy 7.11 under the LCP, as discussed below.

### *San Mateo County General Plan*

The County’s General Plan, adopted in 1986, guides future development and land use decisions within the County. Chapter 1 of the General Plan addresses vegetative, water, fish and wildlife resources. The goals and policies applicable to the project which address these resources are set forth in Table 4.3-1 applicable to the project. These include:

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**TABLE 4.3-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO BIOLOGICAL RESOURCES**

Goal / Policy Number	Goal / Policy
Goal 1.1	Conserve, enhance, protect, maintain, and manage vegetative, water, fish and wildlife resources.
Goal 1.2	Protect sensitive habitats: Protect sensitive habitats from reduction in size or degradation of the conditions necessary for their maintenance.
Policy 1.21	Importance of sensitive habitats: Consider areas designated as sensitive habitats as a priority resource requiring protection.
Policy 1.23	Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources: a. 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. b. Place a priority on the managed use and protection of vegetative, water, fish and wildlife resources in rural areas of the County.
Policy 1.24	Regulate Location, Density and Design of Development to Protect Vegetative, Water, Fish and Wildlife Resources: Regulate the location, density and design of development to minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.
Policy 1.25	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.
Policy 1.26	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.
Policy 1.27	Protect Fish and Wildlife Resources: Ensure that development will minimize the disruption of fish and wildlife and their habitats.
Policy 1.28	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.
Policy 1.29	Establish Buffer Zones a. Establish necessary buffer zones adjacent to sensitive habitats which include areas that directly affect the natural conditions in the habitats and areas expected to experience changing vulnerabilities due to impacts of climate change. b. As part of Countywide efforts to foster resilience and adapt to impacts of climate changes, establish wildlife corridors in appropriate locations to maintain a functional network of connected wildlands, to support native biodiversity, and to encourage movement of wildlife species.
Policy 1.30	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.
Policy 1.31	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 which are compatible with the surrounding land uses.
Policy 1.32	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.

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**TABLE 4.3-1      GENERAL PLAN GOALS AND POLICIES RELEVANT TO BIOLOGICAL RESOURCES**

Goal / Policy Number	Goal / Policy
Policy 1.33	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.

Source: San Mateo County General Plan, adopted November 18, 1986.

### *Local Coastal Program*

The LCP for San Mateo County provides detailed information on allowed uses with regard to natural resources in the Coastal Zone, which encompasses all of the site and surrounding community. The LCP includes permitted uses for sensitive habitats, riparian corridors, wetlands, marine and estuarine habitats, sand dunes, sea cliffs, rare and endangered species, and unique species. Permitted uses are those that are considered “resource dependent”, and generally include (but are not limited to) uses such as education and research, fish and wildlife management, and trails.

The California Coastal Commission (CCC) Guidelines contain definitions for specific types of ESHAs, including: wetlands, estuaries, streams and rivers, lakes, open coastal waters and coastal waters, riparian habitats, other resource areas, and special status species and their habitats. The CCC defines an ESHA as follows:

*“Environmentally sensitive habitat area” means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.”*

Under the LCP, the County requires, and issues a Coastal Development Permit for all development in the Coastal Zone subject to certain exemptions. Policy 7.11 of the LCP defines riparian buffer zones, and applies to the central portion of the site that contains an unnamed drainage with riparian habitat. In the Coastal Zone, this riparian area could technically be considered wetland habitat as well, as defined under Policy 7.14. Applicable biological resource policies in the LCP are listed below in Table 4.3-2.

### *San Mateo County Significant and Heritage Tree Ordinances (should come after LCP)*

The County’s Heritage Tree Ordinance (Section 11000) acknowledges that the County’s outstanding heritage tree population has been and continues to be an invaluable asset in contributing to the economic, environmental, and aesthetic stability of the County and the welfare of its people and of future generations and, therefore, that the removal of such trees should be regulated. According to the ordinance, a “Heritage Tree” means any tree that meets the following class criteria:

- 1) Class 1 includes 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.

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TABLE 4.3-2 LOCAL COASTAL PROGRAM POLICIES RELEVANT TO BIOLOGICAL RESOURCES

Goal / Policy Number	Goal / Policy
Policy 7.1	<p>Definition of Sensitive Habitats:</p> <p>Define sensitive habitats as any area in which plant and animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting “rare and endangered” species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife refuges and reserves, and (8) sand dunes.</p> <p>Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species.</p>
Policy 7.2	<p>Designation of Sensitive Habitats:</p> <p>Designate sensitive habitats as including, but not limited to, those shown on the Sensitive Habitats Map for the Coastal Zone.</p>
Policy 7.3	<p>Protection of Sensitive Habitats:</p> <p>a. Prohibit any land use or development which would have significant adverse impact on sensitive habitat areas.</p> <p>b. Development in areas adjacent to sensitive habitats shall be sited and designated to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats.</p>
Policy 7.4	<p>Permitted Uses in Sensitive Habitats:</p> <p>a. Permit only resource dependent uses in sensitive habitats. Resource dependent uses for riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs and habitats supporting rare, endangered, and unique species shall be the uses permitted in Policies 7.9, 7.16, 7.23, 7.26, 7.30, 7.33, and 7.44, respectively, of the County Local Coastal Program on March 25, 1986.</p> <p>b. In sensitive habitats, require that all permitted uses comply with U.S. Fish and Wildlife and State Department of Fish and Game regulations.</p>
Policy 7.7	<p>Definition of Riparian Corridors: Define riparian corridors by the “limit of riparian vegetation” (i.e., a line determined by the association of plant and animal species normally found near streams, lakes and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder). Such a corridor must contain at least a 50% cover of some combination of the plants listed.</p>
Policy 7.8	<p>Designation of Riparian Corridors: Establish riparian corridors for all perennial and intermittent streams and lakes and other bodies of freshwater in the Coastal Zone. Designate those corridors shown on the Sensitive Habitats Map and any other riparian area meeting the definition of Policy 7.7 as sensitive habitats requiring protection, except for manmade irrigation ponds over 2,500 sq. ft. surface area.</p>
Policy 7.9	<p>Permitted Uses in Riparian Corridors:</p> <p>a. Within corridors, permit only the following uses: (1) education and research, (2) consumptive uses as provided for in the Fish and Game Code and title 14 of the California Administrative Code, (3) fish and wildlife management activities, (4) trails and scenic overlooks on public land(s), and (5) necessary water supply projects.</p> <p>b. When no feasible or practicable alternative exists, permit the following uses: (1) stream dependent aquaculture... (2) flood control projects (3) bridges (4) pipelines, (5) repair or maintenance of roadways or road crossings, (6) logging operations which are limited to temporary skid trails, stream crossings...(7) agricultural uses, provided no existing riparian vegetation is removed and no soil is allowed to enter stream channels.</p>
Policy 7.10	<p>Performance Standards in Riparian Corridors:</p> <p>Require development permitted in corridors to: (1) minimize removal of vegetation, (2) minimize land exposure during construction and use temporary vegetation or mulching to protect critical areas, (3) minimize erosion, sedimentation, and runoff by appropriately grading and replanting modified areas, (4) use only adapted native or non-invasive exotic plant species when replanting, (5) provide sufficient passage for native and anadromous fish as specified by the State Department of Fish and Game, (6) minimize adverse effects of waste water discharges and entrainment, (7) prevent depletion of groundwater supplies and substantial interference with surface and subsurface waterflows, (8)</p>

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**TABLE 4.3-2 LOCAL COASTAL PROGRAM POLICIES RELEVANT TO BIOLOGICAL RESOURCES**

Goal / Policy Number	Goal / Policy
	encourage waste water reclamation, (9) maintain natural vegetation buffer areas that protect riparian habitats, and (10) minimize alteration of natural streams.
Policy 7.11	<p>Establishment of Buffer Zones for Riparian Corridors:</p> <p>a. On both sides of riparian corridors, from the “limit of riparian vegetation” extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.</p> <p>b. Where no riparian vegetation exists along both sides of riparian corridors, extend buffer zones 50 feet from the predictable high water point for perennial streams and 30 feet from the midpoint of intermittent streams.</p> <p>c. Along lakes, ponds, and other wet areas, extend buffer zones 100 feet from the high water point except for manmade ponds and reservoirs used for agricultural purposes for which no buffer zone is designated.</p>
Policy 7.12	<p>Permitted Uses in Buffer Zones:</p> <p>Within buffer zones, permit only the following uses: (1) uses permitted in riparian corridors; (2) residential uses on existing legal building sites, set back 20 feet from the limit of riparian vegetation, only if no feasible alternative exists, and only if no other building site on the parcel exists; (3) on parcels designated on the LCP Land Use Plan Map: Agriculture, Open Space, or Timber Production, residential structures or impervious surfaces only if no feasible alternative exists; (4) crop growing and grazing consistent with Policy 7.9; (5) timbering in “streamside corridors” as defined and controlled by State and County regulations for timber harvesting; and (6) no new residential parcels shall be created whose only building site is in the buffer area.</p>
Policy 7.13	<p>Performance Standards in Buffer Zones:</p> <p>Require uses permitted in buffer zones to: (1) minimize removal of vegetation; (2) conform to natural topography to minimize erosion potential; (3) make provisions (i.e., catch basins) to keep runoff and sedimentation from exceeding pre-development levels; (4) replant where appropriate with native and noninvasive exotics; (5) prevent discharge of toxic substances, such as fertilizers and pesticides; into the riparian corridor; (6) remove vegetation in or adjacent to man-made agricultural ponds if the life of the pond is endangered; (7) allow dredging in or adjacent to man-made ponds if the San Mateo County Resource Conservation District certified that siltation imperils continued use of the pond for agricultural water storage and supply; and (8) limit the sound emitted from motorized machinery to be kept to less than 45-dBA at any riparian buffer zone boundary except for farm machinery and motorboats</p>
Policy 7.14	<p>Definition of Wetland:</p> <p>Define wetland as an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernal wet areas where the soils are not hydric.</p> <p>In San Mateo County, wetlands typically contain the following plants: cordgrass, pickleweed, jaumea, frankenia, marsh mint, tule, bullrush, narrow-leaf cattail, broadleaf cattail, pacific silverweed, salt rush, and bog rush. To qualify, a wetland must contain at least a 50% cover of some combination of these plants, unless it is a mudflat.</p>
Policy 7.15	<p>Designation of Wetlands:</p> <p>a. Designate the following as wetlands requiring protection: Pescadero Marsh, Pillar Point Marsh (as delineated on Map 7.1), marshy areas at Tunitas Creek, San Gregorio Creek, Pomponio Creek and Gazos Creek, and any other wetland meeting the definition in Policy 7.14.</p> <p>b. At the time a development application is submitted, consider modifying the boundary of Pillar Point Marsh (as delineated on Map 7.1) if a report by a qualified professional, selected jointly by the County and the applicant, can demonstrate that land within the boundary does not meet the definition of a wetland.</p>

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TABLE 4.3-2 LOCAL COASTAL PROGRAM POLICIES RELEVANT TO BIOLOGICAL RESOURCES

Goal / Policy Number	Goal / Policy
Policy 7.16	<p>Permitted Uses in Wetlands:</p> <p>Within wetlands, permit only the following uses: (1) nature education and research, (2) hunting, (3) fishing, (4) fish and wildlife management, (5) mosquito abatement through water management and biological controls; however, when determined to be ineffective, allow chemical controls which will not have a significant impact, (6) diking, dredging, and filling only as it serves to maintain existing dikes and an open channel at Pescadero Marsh, where such activity is necessary for the protection of pre-existing dwellings from flooding, or where such activity will enhance or restore the biological productivity of the marsh, (7) diking, dredging, and filling in any other wetland only if such activity serves to restore or enhance the biological productivity of the wetland, (8) dredging man-made reservoirs for agricultural water supply where wetlands may have formed, providing spoil disposal is planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation, and (9) incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.</p>
Policy 7.17	<p>Performance Standards in Wetlands:</p> <p>Require that development permitted in wetlands minimize adverse impacts during and after construction. Specifically, require that: (1) all paths be elevated (catwalks) so as not to impede movement of water, (2) all construction takes place during daylight hours, (3) all outdoor lighting be kept at a distance away from the wetland sufficient not to affect the wildlife, (4) motorized machinery be kept to less than 45-dBA at the wetland boundary, except for farm machinery, (5) all construction which alters wetland vegetation be required to replace the vegetation to the satisfaction of the Planning Director including “no action” in order to allow for natural reestablishment, (6) no herbicides be used in wetlands unless specifically approved by the County Agricultural Commissioner and State Department of Fish and Game, and (7) all projects be reviewed by the State Department of Fish and Game and State Water Quality Board to determine appropriate mitigation measures.</p>
Policy 7.18	<p>Establishment of Buffer Zones:</p> <p>Buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less than 50 feet only where: (1) no alternative development site or design is possible; and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem.</p>
Policy 7.19	<p>Permitted Uses in Buffer Zones:</p> <p>Within buffer zones, permit the following uses only: (1) uses allowed within wetlands (Policy 7.16) and (2) public trails, scenic overlooks, and agricultural uses that produce no impact on the adjacent wetlands.</p>

Source: San Mateo County Local Coastal Program, 2013.

- 2) Class 2 includes any of a number of native tree species, healthy and generally free from disease, with a minimum trunk diameter varying based on species and location in the county.

No trees on the site have been designated a Heritage Tree by the Board of Supervisors under the Class 1 criterion, and none meet the minimum size criterion for native species under the Class 2 criterion. So there are no Heritage Trees on the site.

The County’s Significant Tree Ordinance (Section 12000) acknowledges that the County’s existing and future trees and tree communities are a valuable and distinctive natural resource and, therefore, that the cutting, preservation, and replacement of such trees and tree communities should be controlled and supervised. According to the ordinance, a “Significant Tree” means any live woody plant rising above the ground with a single stem or trunk of a circumference of 38 inches or more measured at 4½ 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.



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On September 20, 2016, San Mateo County Board of Supervisors adopted additional amendments to the Significant and Heritage Tree Ordinances. The changes include a provision for an Existing Tree Plan and also a Tree Protection Plan for development or grading that has the potential to impact site trees. The proposed project will need to comply with these newly adopted rules.

### 4.3.1.2 EXISTING CONDITIONS

This section provides a discussion of the existing biological conditions on the site, which includes the vegetation and wildlife habitat, potential for occurrence of special-status plant and animal species, sensitive natural communities, and jurisdictional waters.

#### Vegetation and Wildlife Habitat

The project site is located in a relatively developed area of El Granada, surrounded by residential development to the north, east and south, and Obispo Road and Highway 1 to the west. The site is currently undeveloped and contains a natural cover of non-native ruderal (weedy) grasslands, scattered non-native trees, and is bisected by a dense riparian corridor dominated by native arroyo willow (*Salix lasiolepis*). Figure 4.3-1 shows the location of the riparian corridor on the site in relation to the footprint of the proposed project, based on mapping prepared as part of the PESHAA.

##### Grasslands

The ruderal uplands are dominated by common non-native species including: wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), wild radish (*Raphanus sativus*), cheeseweed mallow (*Malva parviflora*), English plantain (*Plantago erecta*), black mustard (*Brassica nigra*), pale flax (*Linum bienne*), and pincushion flower (*Scabiosa triandra*). Wildlife species associated with the grasslands are relatively common in grasslands of the area. A small patch of native California oat grass (*Danthonia californica*) was observed in the southeastern edge of the site, but occupies less than about 10 square feet, and does not qualify as a sensitive natural community type given its small size.

The remaining grasslands on the site and surrounding area support a variety of invertebrates, reptiles and mammals common to the El Granada vicinity. Herbivorous small mammals most likely include Botta's pocket gopher and California vole. Reptiles associated with grassland habitat in the area include: gopher snake, common king snake, western fence lizard, and alligator lizard. Bird species include granivores, omnivores, and insectivores, as well as occasional foraging by birds of prey. Bird species observed or suspected to forage on the site include: Say's phoebe, savanna sparrow, American goldfinch, mourning dove, Anna's hummingbird, scrub jay and brown towhee. Raccoon and skunk most likely forage along the riparian corridor, but the fact that the site is bordered by residential development and roadways that separate it from other natural habitat limits its suitability to other larger mammals such as black-tailed deer, black-tailed jackrabbit, long-tailed weasel, and grey fox, striped skunk. No major wildlife movement corridors are believed to occur on the site, due in part to the fact that the unnamed drainage enters a culvert and passes through the residential area of El Granada to the east.

## BIOLOGICAL RESOURCES



Source: WRA Environmental Consultants, 2015.

Figure 4.3-1  
Riparian Habitat and Setbacks

**BIOLOGICAL RESOURCES***Riparian Woodland*

The riparian corridor of the unnamed drainage forms a dense woodland canopy of native willow and non-native silktree mimosa (*Albizia julibrissin*), the limits of which are indicated in Figure 4.3-1 based on mapping prepared as part of the PESHAA. The understory is composed of primarily non-native English ivy (*Hedera helix*), garden nasturtium (*Tropaeolum majus*), and cape ivy (*Delairea odorata*). Non-native acacia (*Acacia* spp.), Himalayan blackberry (*Rubus armeniacus*), and Kikuyu grass (*Pennisetum clandestinum*) occur along the edge of the riparian corridor, and contribute the current width, although these species are not technically considered indicators of riparian conditions. The Kikuyu grass forms dense mats that are smothering the surrounding shrubs and groundcover species at the southeastern edge of the riparian corridor on the site. The limits of canopy shown as “riparian habitat” in Figure 4.3-1 provides a very conservative estimate of the extent of riparian habitat on the site. This is because it encompasses both the native willow along the actual stream channel as well as the dense thicket of non-native acacia and other non-native species that dominate the southern edge of the mapped riparian habitat. Based on the definition of riparian corridors under LCP Policy 7.7, it could be argued that the non-native tree cover doesn’t technically qualify as riparian habitat. The dense nature of the thicket of acacia and Himalayan blackberry make a more accurate determination of the actual transition from riparian corridor to invasive cover challenging, which is why further adjustments to the limits of canopy shown in Figure 4.3-1 were not attempted.

The dense cover of the riparian corridor provides habitat for several bird and mammal species, including rufous-sided towhee, bewick’s wren, wrentit, Anna’s hummingbird, and deer mouse. But the predominance of invasive species along the corridor limits its habitat value to wildlife. No aquatic species were observed in the active channel of the drainage during the field reconnaissance, and it is unlikely that the drainage has any fishery resource value.

**Special-Status Species**

Special-status species are plants and animals that are legally protected under the State and/or federal Endangered Species Acts or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Suitable habitat for most of the special-status species known or suspected to occur in the vicinity is absent from the site. This includes the special-status species monitored by the California Natural Diversity Data Base (CNDDDB) of the California Department of Fish and Wildlife.

Based on recorded geographic range and preferred habitat, a number of special-status species have been reported from or are suspected to occur along the Coastal Zone of San Mateo County. Figure 4.3-2 shows the distribution of special-status plant and animal species monitored by the CNDDDB within approximately five miles of the site. As shown on Figure 4.3-2, no occurrences of any special-status plant or animal species extend over the site or surrounding area of El Granada. This includes the absence of known occurrences of the federally-threatened California red-legged frog (*Rana draytonii*), the federally–endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), and numerous occurrence of special-status plant species. The following provides a summary of conclusions regarding absence of any special-status species on the site.

## BIOLOGICAL RESOURCES

### *Special-Status Plant Species*

As shown on Figure 4.3-2, several special-status plant species have been reported from within five miles of the site, including: Montara manzanita (*Arctostaphylos montaraensis*), San Francisco Bay campion (*Chorizanthe cuspidate* var *cuspidate*), San Francisco gumplant (*Grindelia hirsutula* var. *maritima*), Hickman's cinquefoil (*Potentilla hickmanii*), coast yellow leptosiphon (*Linanthus croceus*), and rose leptosiphon (*Leptosiphon rosaceus*), among others. All of these are maintained on Rank 1B of the CNPS *Inventory*, and Hickman's cinquefoil is State and federally-listed as endangered. No special-status plant species were detected during the field reconnaissance survey, and due to the extent of past disturbance and absence of suitable habitat conditions, none are believed to occur on the site.

### *Special-Status Animal Species*

As shown on Figure 4.3-2, a number of special-status animal species have been reported within five miles of the site by the CNDDDB. These include: California red-legged frog (CRLF), San Francisco garter snake (SFGS), the federally threatened steelhead (Central California Coast Evolutionarily Significant Unit - ESU) (*Onchorynchus mykiss*), the federally-endangered mission blue butterfly (*Icarioides missionensis*), the federally-endangered San Bruno elfin butterfly (*Incisalia mossii bayensis*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) and American badger (*Taxidea taxus*) which have no legal protective status but are considered California Species of Special Concern (SSC) by the CDFG. Information on each of these species is summarized below.

#### California Red-legged Frog

This species is listed as threatened by the USFWS and is recognized as a CSC species by the CDFG. It typically occurs in aquatic habitat of streams and ponds, but can disperse considerable distances in search of breeding and aestivation sites. Continued loss of upland dispersal habitat, fragmentation of remaining breeding locations, competition and predation by bullfrog, and degradation of aquatic habitat are primary concerns regarding protection and recovery of this species.

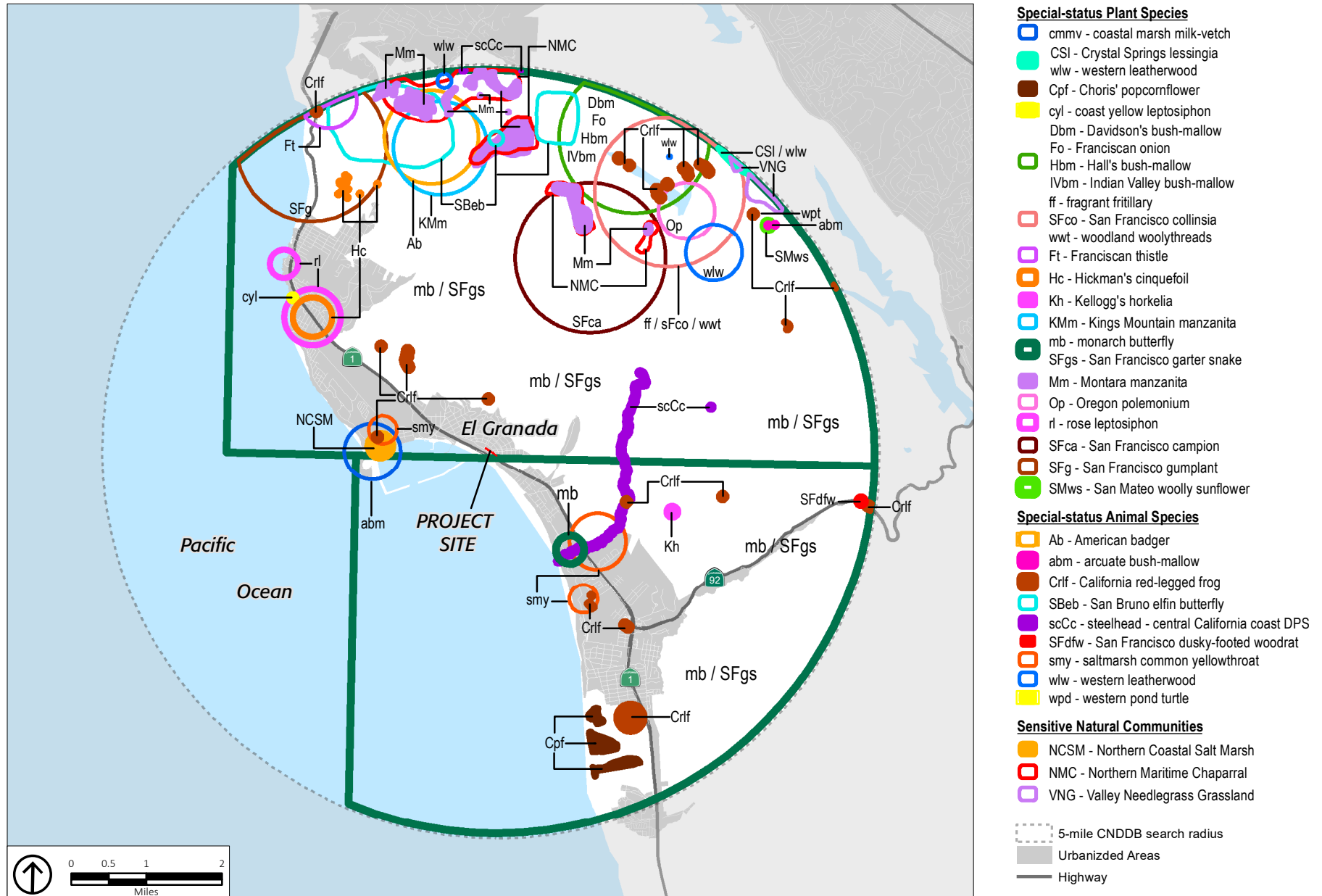
The site is outside of the designated critical habitat areas for CRLF as approved by the USFWS. As indicated in the PESHAA, the site does not contain suitable habitat for CRLF, and is isolated from locations with known occurrences of this species. Protocol surveys were not conducted by the applicant's consulting biologist, but this species is not suspected to occur on the site due to the absence of suitable habitat and distance to known occurrences. The PESHAA included a recommendation for on-site monitoring and exclusion to prevent inadvertent take during construction in the remote instance that individual CRLF were to disperse into the area.

#### San Francisco Garter Snake

This subspecies is State and federally-listed as endangered. It occurs in wetlands and the surrounding grasslands near ponds, marshes, and sloughs. They are typically found around ponds and marshes that support large populations of Pacific tree frog and CRLF, which serve as their primary food source. San Francisco garter snake is known to disperse through a variety of habitat types between breeding areas and they may retreat to uplands, especially during the rainy season.



## BIOLOGICAL RESOURCES



Source: CNDDDB, 2016; ESRI, 2015; Open Street Map, 2015.

Figure 4.3-2  
Special-Status Species and Sensitive Natural Communities

## BIOLOGICAL RESOURCES

Suitable habitat for San Francisco garter snake is absent on the site and surrounding lands. Protocol surveys were not conducted by the applicant's consulting biologist, but this species is not suspected to occur on the site due to the absence of suitable habitat, distance to known occurrences, and fact that the site is not located in between potential breeding habitat where individuals may occasionally be expected to disperse. Although the potential for an individual SFGS to disperse onto the site is considered highly unlikely, the PESHAA included a recommendation for on-site monitoring and exclusion during construction to ensure that no individuals are present, in the remote instance that one was able to disperse into the area.

### Mission Blue Butterfly

Mission blue butterfly is associated with coastal grasslands and coastal sage scrub habitats where its larval foodplants, three perennial species of lupine (*Lupinus albifrons*, *L. variicolor*, and *L. formosus*), grow. This subspecies is now known primarily from San Mateo County, but also occurs at Twin Peaks in San Francisco and at the north end of the Golden Gate Bridge in Marin County. Nectar from coast buckwheat serves as the primary food source for adult butterflies, which will also visit goldenaster (*Heterotheca villosa*), Ithuriel's spear (*Triteleia laxa*), and blue dicks (*Dichelostemma capitatum*) during the adult flight season from March through June. Suitable larval host plant species are absent, and this species is therefore not suspected to occur on the site.

### San Bruno Elfin Butterfly

San Bruno elfin butterfly is found in association with rock outcrops in coastal scrub or native bunch grassland habitat, where its sole larval foodplant, pacific stone crop (*Sedum spathulifolium*), grows. All known populations of this butterfly are from San Mateo County, with populations occurring on Whiting Ridge within the neighboring Crystal Springs Reservoir, on Montara Mountain, at Milagra Ridge, and on private land adjacent to Milagra Ridge. Adults feed on nectar from several plant species (e.g., *Lomatium utriculatum*, *Achillea millefolium*, *Arabis blepharophylla*, *Erysimum franciscanum*, *Ranunculus californicus*, and *Fragaria californica*) during their flight season in March and April. Larvae feed on pacific stone crop flowers in May and June. Suitable larval host plant species are absent, and this species is therefore not suspected to occur on the site.

### Steelhead

This Central California Coast ESU of this species is restricted to coastal streams through the Central California coast. The drainage on the site does not contain suitable pool and riffle habitat necessary to support a possible occurrence of steelhead or any fishery resource.

### San Francisco Dusky-Footed Woodrat

This subspecies has no legal protective status, but is considered a SSC by the CDFG. It occurs in a variety of brushy and wooded habitats, including coastal scrub. The subspecies occurs in the Santa Cruz Mountains and in the East Bay. It builds stick houses for nesting and protection. No conspicuous stick nests were observed in the riparian woodland habitat, and this species is not suspected to occur on the site.

**BIOLOGICAL RESOURCES**Other Bird Species

Although no evidence of any nesting was observed during the field reconnaissance survey there is a possibility that one or more special-status bird species could establish nests in the future. Species considered to have some potential for possible nesting in the scrub habitat on the site include: northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus caeruleus*), and loggerhead shrike. If nests were found in the future, the nesting individuals would be protected under the Migratory Bird Treaty Act and State Fish and Game Code when in active use. There remains a potential for other more common birds to also nest on the site, active nests of which would also be protected under the Migratory Bird Treaty Act and State code. Pre-construction surveys would be necessary to confirm presence or absence of any nesting activity, and this could change in the future as nests are abandoned and new nests established.

It should be noted that there remains a remote potential for occasional use of the site vicinity by other bird species of concern including: ferruginous hawk (*Buteo regalis*), Aleutian Canada goose (*Branta canadensis leucopareia*), merlin (*Falco columbarius*), and prairie falcon (*Falco mexicanus*), among others. Species usage would be limited to occasional wintering activity by migratory bird species or possible occasional foraging activity by species for which essential breeding habitat is absent from the site.

**Sensitive Natural Communities**

In addition to species-oriented management, protecting habitat on an ecosystem-level is increasingly recognized as vital to the protection of natural diversity in the state. The CNDDDB also monitors the locations of natural communities that are considered rare or threatened, known as sensitive natural communities. The CNDDDB has compiled a list of sensitive natural communities that are given a high inventory priority for mapping and protection (CDFG, 2010). Although these natural communities have no legal protective status under the State or federal Endangered Species Acts, they are provided some level of protection under the CEQA Guidelines. A project would normally be considered to have a significant effect on the environment if it would substantially affect a sensitive natural community such as a riparian woodland, native grassland, or coastal salt marsh. Further loss of a sensitive natural community could also be interpreted as substantially diminishing habitat, depending on the relative abundance, quality and degree of past disturbance, and the anticipated impacts.

The willow-dominated riparian woodland qualifies as a sensitive natural community type on the site. The riparian corridor bisects the central portion of the site, and while it has been heavily invaded by non-native species, it continues to be dominated by an overstory of native willows, and is subject to setback requirements defined in Policies 7.8 through 7.13 of the LCP.

**Jurisdictional Waters**

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

## BIOLOGICAL RESOURCES

The CDFW, Corps, and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to shorelines, open water, stream channels, river banks, and other waterbodies (see detailed descriptions below under Regulatory Context). Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters". All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity. The Corps is also responsible for administration of Section 10 of the Rivers and Harbor Act, which serves to regulate access over navigable waters. Jurisdictional authority of the CDFW over wetland areas is established under Section 1601-1606 of the Fish and Wildlife Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream.

The Fish and Wildlife Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement.

Based on the results of the preliminary wetland assessment conducted during the field reconnaissance in September 2016, jurisdictional waters are limited to the riparian corridor that bisects the central portion of the site. Waters regulated by the USACE occur below the Ordinary High Water Mark (OHWM) along the stream channel. Waters of the State regulated by the CDFW and RWQCB extend to the edge of willow-dominated riparian vegetation. Although the native willow growing along the stream channel is recognized as a wetland indicator species by the USACE, it is generally limited to the margins of the stream channel, and does not encompass the entire area marked as "riparian habitat" in Figure 4.3-1. The definition of wetland set forth in Policy 7.14 of the LCP does not specifically identify willow as a typical wetland species in San Mateo County. Instead, the stream channel and associated riparian habitat clearly meets the definition of "riparian corridor" under Policy 7.7 of the LCP, which specifies arroyo willow as a plant species normally found near streams, lakes and other bodies of freshwater.

### 4.3.2 STANDARDS OF SIGNIFICANCE

An Initial Study was prepared for the proposed project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the proposed project would not result in significant environmental impacts per the following significance criteria and therefore these significance criteria are not discussed in this chapter.

- 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 sites.
- Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, it was determined that the project could result in a significant biological resources impact if it would:



## BIOLOGICAL RESOURCES

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
3. 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.
4. Conflict with any local ordinances or policies protecting biological resources, such as tree preservation policy or ordinance.

### 4.3.3 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to biological resources.

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<b>BIO-1</b>	<b>The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. However, there is a remote possibility that individual California red-legged frog or San Francisco garter snake could disperse onto the site in the future, although considered highly unlikely. In addition, there is a possibility that bird nests regulated under the Migratory Bird Treaty Act and California Department of Fish and Wildlife code could be inadvertently destroyed during construction, which would be a significant impact.</b>
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Suitable habitat for special-status species known or suspected to occur in the El Granada vicinity is absent from the site and no impacts are anticipated for most special-status species. This includes absence of suitable habitat for CRLF and SFGS, among other special-status species. Although considered highly unlikely, there remains a remote potential for an individual CRLF or San Francisco garter snake to disperse onto the site in the future, which could be injured or killed during construction unless construction restrictions are implemented as recommended in the PESHAA. Given the formal listing status of these species, this would be a *significant* impact.

**Impact BIO-1a:** Proposed development could potentially result in an inadvertent take of individual CRLF or SFGS in the remote instance that individuals were to disperse onto the site in the future, in which case this could result in a potential violation of the Endangered Species Acts if adequate controls and preconstruction surveys are not implemented.

**Mitigation Measure BIO-1a: Ensure Avoidance of California Red-legged Frog and San Francisco Garter Snake.** The following measures shall be implemented as recommended in the 2015 Preliminary Environmentally Sensitive Habitat Area Assessment of the site to ensure avoidance of individual

## BIOLOGICAL RESOURCES

California red-legged frog (CRLF) or San Francisco garter snake (SFGS) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction:

- **Wildlife exclusion fence:** Wildlife exclusion fencing shall be installed prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall, at a minimum, run along the proposed project boundaries with riparian habitat and for a distance of at least 100 feet perpendicular to riparian habitat. Silt fence material may be used to also provide erosion control, however, per CRLF and SFGS fence standards, it must be at least 42 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be placed on the inside of the project (side on which work will take place).
- **Pre-construction survey:** Pre-construction surveys for CRLF and SFGS shall be conducted prior to initiation of project activities including fence installation) and within 48 hours of the start of ground disturbance activities following completion of exclusion fence installation. Surveys are to be conducted by approved qualified biologists with experience surveying for each species.

If project activities are stopped for greater than 7 days, a follow-up pre-construction survey may be required within 48 hours prior to reinitiating project activities.

- ***Earth Disturbing Activities only during dry weather:*** No earth disturbing activities shall take place during rain events when there is potential for accumulation greater than 0.25 inch in a 24-hour period. In addition, no earth disturbing activities shall occur for 48 hours following rain events in which 0.25-inch of rain accumulation within 24 hours.
- ***Biological monitoring:*** An approved biologist shall be required to inspect and approve installation of the exclusion fence.
- ***Erosion Control Materials:*** Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians and reptile species do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.

**Significance With Mitigation:** Less than significant.

In addition, there is a remote possibility that mature trees and areas of dense cover could be used for nesting by raptors and more common bird species. These nests would be protected under the federal Migratory Bird Treaty Act and California Fish and Game Code when in active use. The Migratory Bird Treaty Act prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the USFWS; this prohibition includes whole birds, parts of birds, and bird nests and eggs. Tree and vegetation removal, building demolition, and other construction activities during the breeding season could result in the incidental loss of fertile eggs or nestlings or nest abandonment if any active nests are present. This would be considered a *significant* impact.

**Impact BIO-1b:** Proposed development could potentially result in inadvertent loss of bird nests in active use, which would conflict with the federal Migratory Bird Treaty Act and California Fish and Game Code if adequate controls and preconstruction surveys are not implemented.

**Mitigation Measure BIO-1b: Ensure Avoidance of Bird Nests in Active Use.** Tree removal, landscape grubbing, and building demolition shall be performed in compliance with the Migratory Bird Treaty

## BIOLOGICAL RESOURCES

Act and relevant sections of the California Fish and Game Code to avoid loss of nests in active use. This shall be accomplished by scheduling building demolition, tree removal and landscape grubbing outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds if new nests are established in the future. Alternatively, if building demolition, tree removal and landscape grubbing cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The pre-construction nesting survey shall include the following:

- A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within seven calendar days prior to tree removal, landscape grubbing, and/or building demolition.
- If no nesting birds or active nests are observed, no further action is required and tree removal, landscape grubbing, and building demolition shall occur within seven calendar days of the survey.
- Another nest survey shall be conducted if more than seven calendar days elapse between the initial nest search and the beginning of tree removal, landscape grubbing, and building demolition.
- If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the California Department of Fish and Wildlife.
- Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone.
- No restrictions on grading or construction activities outside the prescribed buffer zone are required once the zone has been identified and delineated in the field and workers have been properly trained to avoid the buffer zone area.
- Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed.
- A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the County of San Mateo prior to initiation of any tree removal, landscape grubbing, building demolition, and other construction activities within the buffer zone. Following written approval by the County, tree removal, and construction within the nest-buffer zone may proceed.

**Significance With Mitigation:** Less than significant.

## BIOLOGICAL RESOURCES

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<b>BIO-2</b>	<b>The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.</b>
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Grading and other improvements associated with project implementation would be located over 100 feet from the riparian sensitive natural community type on the site (see Figure 4.3-1), and no direct or indirect adverse impacts are anticipated. The actual edge of native riparian vegetation, dominated by willow, is located a considerable distance from the southeastern edge of “riparian habitat” mapped in Figure 4.3-1, but dense cover of non-native acacia and Himalayan blackberry obscure the actual boundary. Best Management Practices (BMPS), such as source control, and treatment control measures that provide both flow control and treatment to runoff during construction would be implemented to control the potential for construction-generated sediment from reaching the unnamed drainage and downstream waters, as discussed under Chapter 4.4, Hydrology and Water Quality. Further, the exclusionary fencing recommended in Mitigation Measure BIO-1a would ensure that the limits of grading associated with the project are clearly defined, and would prevent any inadvertent disturbance to the riparian corridor on the site. As a result, the proposed project would result in *less-than-significant* impacts to riparian habitat and other sensitive natural communities.

**Significance Without Mitigation:** Less than significant.

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<b>BIO-3</b>	<b>The proposed project would not 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.</b>
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Grading and other improvements associated with project implementation would be located over 100 feet from the jurisdictional waters associated with the native riparian habitat on the site (see Figure 4.3-1), and no direct or indirect adverse impacts are anticipated. The exclusionary fencing recommended in Mitigation Measure BIO-1a would ensure that the limits of grading associated with the project are clearly defined, and would prevent any inadvertent disturbance to the jurisdictional waters associated with the riparian corridor on the site. As discussed above under BIO-2, BMPS would be implemented to control the potential for construction-generated sediment from reaching the unnamed drainage and downstream waters, as discussed under Chapter 4.4, Hydrology and Water Quality. Consequently, the proposed project would result in *less-than-significant* impacts with regards to wetlands.

**Significance Without Mitigation:** Less than significant.

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<b>BIO-4</b>	<b>The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</b>
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## BIOLOGICAL RESOURCES

In general, the proposed project would not conflict with any goals and policies of the San Mateo County General Plan or LCP, or conflict with any ordinances. With the exception of the riparian habitat that bisects the site, sensitive biological resources are absent from the site. Measures called for in Mitigations BIO-1a and BIO-1b would ensure avoidance of any special-status species in the remote instance that they disperse onto or establish new nests on the site. As shown on Figure 4.3-1, the footprint of the new structures and other improvements would be located well over 50 feet from the edge of the riparian habitat on the site ensuring compliance with the buffer distances in LCP Policy 7.11, regardless of whether the unnamed drainage is considered an intermittent or perennial stream. Obispo Road separates the proposed development area from the riparian habitat located downstream and to the southwest, precluding any important habitat connectivity between the site and drainage, but still generally meets this higher 50-foot buffer distance in LCP Policy 7.11. The project also generally conforms with wetland-related policies in the LCP. No direct disturbance to the native riparian habitat would occur, and a buffer of over 100 feet from the native willow vegetation would be provided. Policy 7.18 calls for a 100-foot setback from the outermost line of wetland vegetation, which would be the edge of willow canopy along the southern edge of the unnamed drainage, located a considerable distance from the southeastern edge of riparian habitat mapped in Figure 4.3-1 due to the presence of the intervening thicket of non-native acacia and Himalayan blackberry. Further, while the 100-foot riparian setback from the habitat across Obispo Road would extend to the project site, Obispo Road serves as an adequate buffer that would prevent any disturbance to that riparian habitat. As discussed above, Policy 7.14 does not include willow as one of the plant species typically characterizing wetland vegetation in San Mateo County, and the wetland-related policies in the LCP do not appear to apply to the site, although the recommended buffer 100-foot distance would be met.

Implementation of the proposed project would result in the removal of the scattered non-native trees in the southern half of the site. As summarized in the tree inventory and evaluation for the site, this consists of an estimated 11 trees, all of which are not native to the El Granada area and most of which are in poor to fair condition, one of which is dead. Of these trees, eight would qualify as a “Significant Tree” under the County’s Significant Tree Ordinance (Section 12000) with trunk circumferences of 38 inches or more. A permit would be required for their removal, and replacement tree plantings would be provided as part of the landscape improvements associated with the proposed project. An existing tree plan and a tree protection plan will be prepared in accordance with the recently adopted amendments to the Significant Tree Ordinance. Given that the trees on the site are not indigenous to the area and are in less than excellent condition, this would not be considered a significant impact or conflict with the intent of the County’s ordinance. Overall, the proposed project would not conflict with any local policies or ordinances protecting biological resources and a *less-than-significant* impact would occur.

**Significance Without Mitigation:** Less than significant.

### 4.3.4 CUMULATIVE IMPACTS

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<b>BIO-5</b>	<b>The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in less than significant cumulative impacts with respect to biological resources.</b>
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## **BIOLOGICAL RESOURCES**

The potential impacts of a proposed project on biological resources tend to be site-specific, and the overall cumulative effect is dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (e.g., marshlands, native grasslands, oak woodlands, riparian scrub and woodland, etc.), populations of special-status plant or animal species, and wetland features (including seasonal wetlands and drainages). Environmental review of specific development proposals in the vicinity of a development site should serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts, including development for the remaining undeveloped lands in the surrounding area.

Because the footprint of the proposed project lacks any sensitive biological resources with the exception of the riparian habitat on the site which is avoided, and because the identified mitigation measures would reduce any potential biological impacts to a less-than-significant level, the project would not contribute to any cumulative impacts on special-status species, sensitive natural communities, or regulated wetlands. And the impacts associated with the proposed development would not contribute to a cumulative reduction of important wildlife habitat since the operation of the fire station will be confined to the approved area of development on proposed Parcel B. Additionally, while it is unknown at this time what type of development would occur on the Proposed Parcel A, uses allowed within that zoning designation include automobile service stations, bakeries, banks, bars, barber shops, confectionery stores, gift shops, restaurants, and cafes. However, these allowed uses, in addition to other development throughout the County would be subject to the same regulations and reviews by the County to ensure that all development conforms to applicable regulations related to biological resources.

**Significance Without Mitigation:** Less than significant.

## HYDROLOGY AND WATER QUALITY

### 4.4 HYDROLOGY AND WATER QUALITY

This chapter discusses the regulatory environment, existing conditions, and impacts of the proposed project related to sea level rise and tsunamis. As explained below, the Initial Study prepared for the project (see Appendix A of this Draft EIR) concluded that the project would not result in any other significant hydrology and water quality impacts and therefore this chapter will discuss only the project's potential to result in hydrology impacts related to sea level rise and tsunamis.

#### 4.4.1 ENVIRONMENTAL SETTING

##### 4.4.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, regional and local maps, policies and regulations related to sea level rise and tsunamis that are applicable to the proposed project.

#### Federal Maps

##### *FEMA Flood Insurance Rate Maps*

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains.<sup>1</sup> FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. As shown in Figure 4.4-1, the project site is in Zone X, which is outside the 100-year and 500-year floodplain and outside of the coastal high hazard area.

#### State Maps and Regulations

##### *Tsunami Inundation Map for Emergency Planning (Cal-EMA Map)*

The California Governor's Office of Emergency Services (Cal OES), Earthquake, Tsunami, and Volcano Program coordinates mapping of potential inundation and evacuation areas, provides assistance in response and evacuation planning, and implements outreach, education and warning signage at the coast. The Tsunami Inundation Map for Emergency Planning for Montara Mountain Quadrangle dated June 15, 2009 (Cal-EMA map) is provided as Figure 4.4-2.<sup>2</sup> It was prepared by Cal OES (formerly California Emergency Management Agency or Cal-EMA), California Geological Survey (CGS), and University of Southern California. The legend on the map states that this map "is intended for local jurisdictional, coastal evacuation planning only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose."

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<sup>1</sup> Federal Emergency Management Agency's Library, *National Flood Insurance Program Description*. [http://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip\\_1\\_.pdf](http://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip_1_.pdf), accessed February 26, 2015.

<sup>2</sup> Mapped at 1:24,000 scale.

## HYDROLOGY AND WATER QUALITY



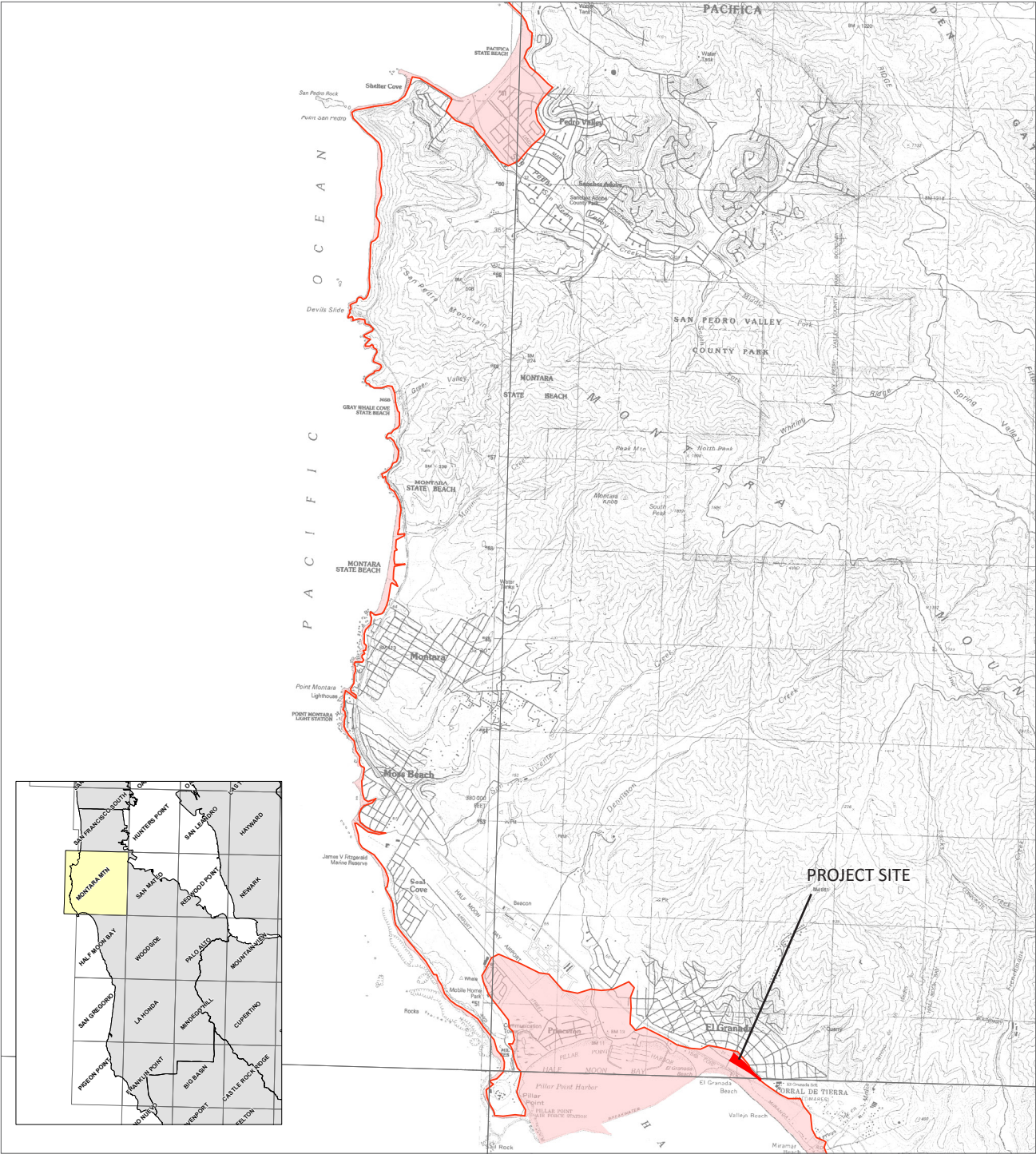
Source: Google Earth, 2016.



Figure 4.4-1  
FEMA Firm Flood Zone



HYDROLOGY AND WATER QUALITY



Source: Tsunami Inundation Map for Emergency Planning.  
State of California. County of San Mateo. Montara  
Mountain Mountain Quadrangle.





-  Tsunami Inundation Line
-  Tsunami Inundation Area

Figure 4.4-2  
Cal EMA Tsunami Evacuation Map

## HYDROLOGY AND WATER QUALITY

As shown on Figure 4.4-2, the project site falls just within the inland limit of the tsunami inundation zone shown on the Cal-EMA map. As discussed below, the Cal-EMA map covers all return periods up to 1,000 years and therefore the probability of a tsunami-induced inundation at the project site is quite low.

### *California Coastal Act of 1976*

The California Coastal Act of 1976 extended the California Coastal Commission's (CCCs) authority indefinitely to protect coastal resources, including shoreline public access and recreation, terrestrial and marine habitat protection, and water quality, and control construction along the State's 1,100 miles of shoreline. The Act also transfers permitting authority to local governments through adoption and certification of Local Coastal Programs (LCPs) by the CCC. Under California's federally approved Coastal Management Program, the CCC manages development along the California coast except for San Francisco Bay, where the San Francisco Bay Conservation and Development Commission (BCDC) oversees development. The County of San Mateo has the authority to implement the California Coastal Act in the unincorporated areas of San Mateo County through the issuance of Coastal Development Permits (CDPs).

Development within the coastal zone generally may not begin until a CDP has been issued either by the CCC or the local governing agency. Once the CCC has certified the LCP, most CDP permit authority is delegated and CDP applications are reviewed and acted on by cities and counties, which action is appealable to the CCC in certain circumstances. Any applicant or person who participates in the local permitting process for a project, or who otherwise communicates their concerns to the local government, may file an appeal for projects that are appealable to the CCC. However, the appellant must have exhausted all local appeals. The grounds for appealing a project are limited to whether the project conforms to the requirements of the LCP or the public access policies of the Coastal Act.

### *California Executive Order S-13-2008*

California Executive Order S-13-2008 states that all state agencies planning construction projects in areas vulnerable to sea level rise must consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and to the extent feasible, reduce expected risks to sea level rise.<sup>3</sup> The State of California's current guidance incorporates the most recent scientific findings from the National Research Council (NRC).<sup>4</sup> The NRC predicts a range of sea level rise for areas south of Cape Mendocino of 5 to 24 inches by 2050 and 17 to 66 inches by 2100.

## Local Maps, Policies, and Regulations

### *Local Coastal Program*

The CCC approved the San Mateo County's Local Coastal Program (LCP) in late 1980 and in April 1981, the County assumed responsibility for implementing the State Coastal Act in the unincorporated areas of San Mateo County, including the issuance of Coastal Development Permits (CDPs). Development as described in the Coastal Act and within the coastal zone requires either a CDP or a CDP exemption. For a permit to be issued, the development must comply with the policies of the LCP and those ordinances adopted to

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<sup>3</sup> State of California. *Executive Order S-13-08*. <http://gov.ca.gov/news.php?id=11036>, accessed November 17, 2015.

<sup>4</sup> National Research Council, 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*.

## HYDROLOGY AND WATER QUALITY

implement the LCP as well as other provisions of the County Ordinance Code, such as zoning, building, and health regulations. This project is within the coastal zone and does not fall within a CDP exemption, therefore, it requires a CDP from the County, which is appealable to the CCC since it is not a principal permitted use and it is a public works project valued in excess of \$ 100,000.

Tsunami and other coastal hazard policies of the LCP are contained in the Hazards Component of the LCP. The LCP does not contain any policies specifically related to sea level rise. Policy 9.1 of the Hazards Component of the LCP defines hazardous areas to include land that is subject to dangers from tsunamis and flooding.

LCP Policy 9.3 requires that new development in areas designated as tsunami inundation areas comply with County Zoning Regulations Section 6326.2 (Tsunami Inundation Area Criteria) of the Resource Management Zoning Ordinance set forth below under San Mateo County Zoning Regulations. LCP Policy 9.10 requires site-specific geotechnical investigations to determine appropriate mitigation measures for structures that include human occupancy and/or employment. LCP Policy 9.2 requires that the County designate hazardous areas in the Coastal Zone as those delineated on the Geotechnical Hazards synthesis Map, the Floodway Boundary and Floodway Map and Flood Insurance Rate Maps adopted under Chapter 35.5 of the County Zoning Regulations, and the Natural Hazards Map in the Natural Hazards Chapter of the General Plan. The project site does not appear to be located within any hazardous areas designated on these maps, including the San Mateo General Plan Natural Hazards Map, provided as Figure 4.4-3. The LCP Mid Coast Hazards Map, provided as Figure 4.4-4, also does not show the project site in a tsunami inundation zone or other hazardous area. Therefore, because the project site is not within any designated hazardous area shown on the LCP Mid Coast Hazards Map, San Mateo General Plan Natural Hazards Map, FEMA 100 and 500-year floodplain maps discussed above or other County map adopted under Chapter 35.5 of the County Zoning Regulations, the policies set forth in the Hazards Component of the LCP do not appear to be applicable to the proposed project.

### *County of San Mateo General Plan*

Table 4.4-1 lists General Plan policies that relate to sea level rise, tsunamis, and other coastal hazards.

The General Plan's glossary defines tsunamis as "long, high-velocity sea waves resulting from seismic events which have relatively small wave height in deep water, but which rise significantly in shallow water." Policy 15.9 requires the County designate as Geotechnical Hazard Areas those areas that meet the definition of geotechnical hazards, including those areas illustrated on the Natural Hazards map as Tsunami and Seiche Flooding Areas.

General Plan Policy 15.18 requires that when reviewing development proposals, the County use the Natural Hazards map to determine general areas where geotechnical hazards may be present. The Natural Hazards map is provided as Figure 4.4-3 and as discussed above, does not appear to show the project site within a tsunami inundation area, coastal hazard area, or other natural hazards area. As discussed above, the LCP Mid Coast Hazards Map (Figure 4.4-4) also does not show the proposed project within a tsunami inundation area.

## HYDROLOGY AND WATER QUALITY

**TABLE 4.4-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO TSUNAMIS AND SEA LEVEL RISE**

Goal / Policy Number	Goal / Policy
	Encourage the location and design of new development, remodels, or expansions to anticipate and mitigate climate change risks.
	Implementing Strategy 10.1B: Promote the site selection and design of critical facilities that consider site-specific vulnerabilities to climate change.
Policy 10.1	Implementing Strategy 10.1C: Promote the location of new critical infrastructure facilities in areas not subject to severe climate change impacts, such as storm surge, flooding, or inundation.
	Implementing Strategy 10.1E: Consistent with statewide standards and guidance from the California Coastal Commission, require all new projects in the coastal zone to account for sea level rise and the potential for increasing rates of erosion.
Policy 15.4	<u>Definition of Natural Hazards:</u> Define natural hazards as conditions of potential danger or risk to life and/or property resulting from acts of nature, man-made alterations to the natural environment that create hazardous conditions, and/or hazardous conditions intrinsic to the natural environment. Natural hazards may include risks or vulnerabilities likely to be caused or exacerbated by climate change.
Policy 15.5	<u>Definition of Geotechnical Hazards:</u> Define geotechnical hazards as: (1) seismic events, including but not limited to earthquakes, earthquake-induced landslides, liquefaction, subsidence, and tidal flooding damage from earthquake-induced tsunamis and seiches; (2) non-seismic unstable conditions, including but not limited to landsliding, cliff retrenchment, erosion, subsidence, soil creep and shrink/swell conditions; and (3) debris flows and debris avalanches.
	<u>Designation of Geotechnical Hazard Areas:</u> Designate as Geotechnical Hazard Areas those areas that meet the definition of geotechnical hazards, including but not limited to:
Policy 15.9	a. The areas illustrated on the Natural Hazards map as Alquist-Priolo Special Studies Zones, Tsunami and Seiche Flooding Areas, Coastal Cliff Stability Areas and Areas of High Landslide Susceptibility. b. Any additional area delineated by other investigations, mapped in greater detail, and/or considered to be hazardous by the County Department of Public Works, including but not limited to areas delineated on the Geotechnical Hazards Synthesis maps, maps prepared by USGS and other appropriate sources.
	<u>Locating New Development in Areas Which Contain Natural Hazards:</u>
	a. 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.
Policy 15.12	b. Give preference to land uses that minimize the number of people exposed to hazards in these areas. c. Determine appropriate densities and development. d. Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions expected to be exacerbated by climate change, such as increase risks of fire, flooding, and sea level rise.
	<u>Critical Facilities:</u>
Policy 15.15	a. Where practical, avoid the location of new critical facilities in areas which contain significant natural hazards or are likely to contain significant natural hazards due to the impacts of climate change. b. Continue to work with public utilities, school districts, and other agencies supplying critical public services to ensure that they have incorporated structural safety and other measures to be adequately protected from natural hazards for both existing and proposed facilities and are prepare for potential disasters affecting these facilities.

## HYDROLOGY AND WATER QUALITY

**TABLE 4.4-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO TSUNAMIS AND SEA LEVEL RISE**

Goal / Policy Number	Goal / Policy
	<u>Determination of Existence of a Geotechnical Hazard:</u>
Policy 15.18	<p>a. When reviewing development proposals, use the Natural Hazards map to determine general areas where geotechnical hazards may be present.</p> <p>b. When the Natural Hazards map does not clearly illustrate the presence or extent of geotechnical hazards, use more detailed maps, including but not limited to the Geotechnical Hazards Synthesis Maps prepared by Leighton and Associates for San Mateo County, geotechnical information maps prepared by the United States Geological Survey, or any other geotechnical investigation or source of information considered to be valid by the County Department of Public Works.</p>
Policy 15.43	<u>Abatement of Flooding Hazards:</u> Support measures for the abatement of flooding hazards, including but not limited to: (1) removal or relocation of development from flood hazard areas; (2) construction of impoundments or channel diversions provided that adequate mitigation of environmental impacts can be demonstrated; and (3) debris clearance and silt removal programs conducted in a manner so as not to disrupt existing riparian communities.
Policy 15.46	<p><u>Appropriate Land Uses and Densities in Flooding Hazard Areas:</u></p> <p>a. Consider rural land uses that do not expose significant numbers of people to flooding hazards, such as agriculture, timber production, public and private recreation, and general open space, to be the most appropriate for flooding hazard areas.</p> <p>b. Consider higher density land uses to be appropriate within flood hazard areas in developed urban areas and rural service centers when adequate mitigation of the flood hazard can be demonstrated.</p> <p>c. Discourage the location of new critical facilities in flood hazard areas.</p>
Policy 15.47	<p><u>Review Criteria for Locating Development in Areas of Special Flood Hazard:</u></p> <p>a. Wherever possible, retain natural floodplains and guide development to areas outside of areas of special flood hazard.</p> <p>b. When development is proposed in areas of special flood hazards, require any structure to be safely elevated above the base flood elevation and not contribute to the flooding hazards to surrounding structures</p> <p>c. Promote subdivision design to avoid areas of special flood hazard when possible, and identify these areas of the approved subdivision map.</p>

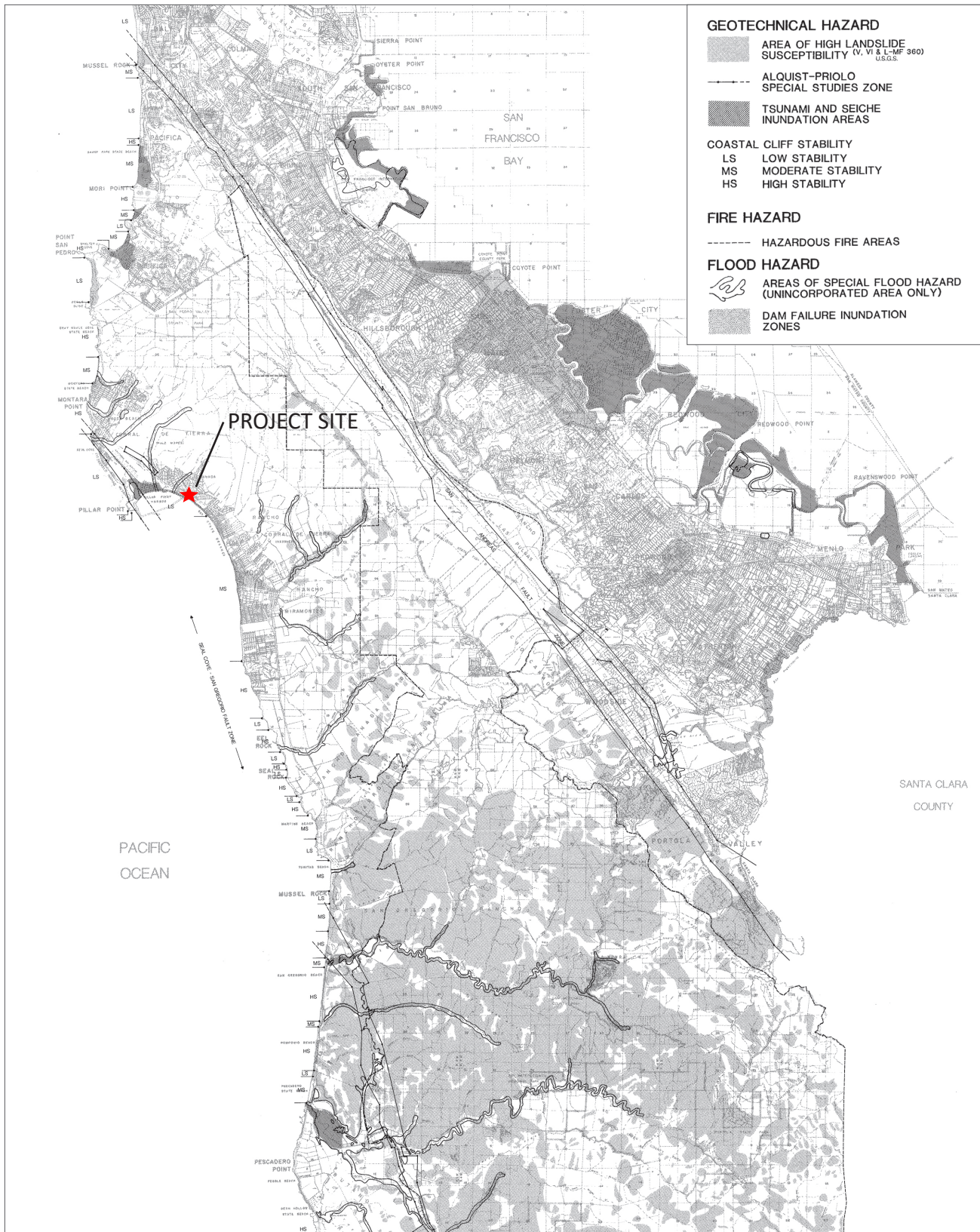
Source: San Mateo County General Plan, adopted November 18, 1986.

General Plan Policy 15.18 provides that when the Natural Hazards map does not clearly illustrate the presence or extent of geotechnical hazards, the County may rely on more “detailed maps” including maps prepared by the United States Geological Survey, or any other geotechnical investigation or source of information considered to be valid by the County of Department of Public Works. In addition to the Natural Hazards Map and the LCP Mid Coast Hazards Map, two additional maps are relevant in determining whether the project site is located within a tsunami inundation zone: the 2009 Cal-EMA map, shown as Figure 4.4-2 and discussed further above, and the 2013 Science Application for Risk Reduction (SAFRR) map, shown as Figure 4.4-5, and discussed further below.

Although the project site is located just within the inland limit of the tsunami inundation area shown on the Cal-EMA map, this map has not been adopted by the County and the Cal-EMA map states on its legend that this map is intended for evacuation planning purposes only and not for regulatory or even natural hazard disclosure purposes.<sup>1</sup>



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Source: San Mateo County General Plan.

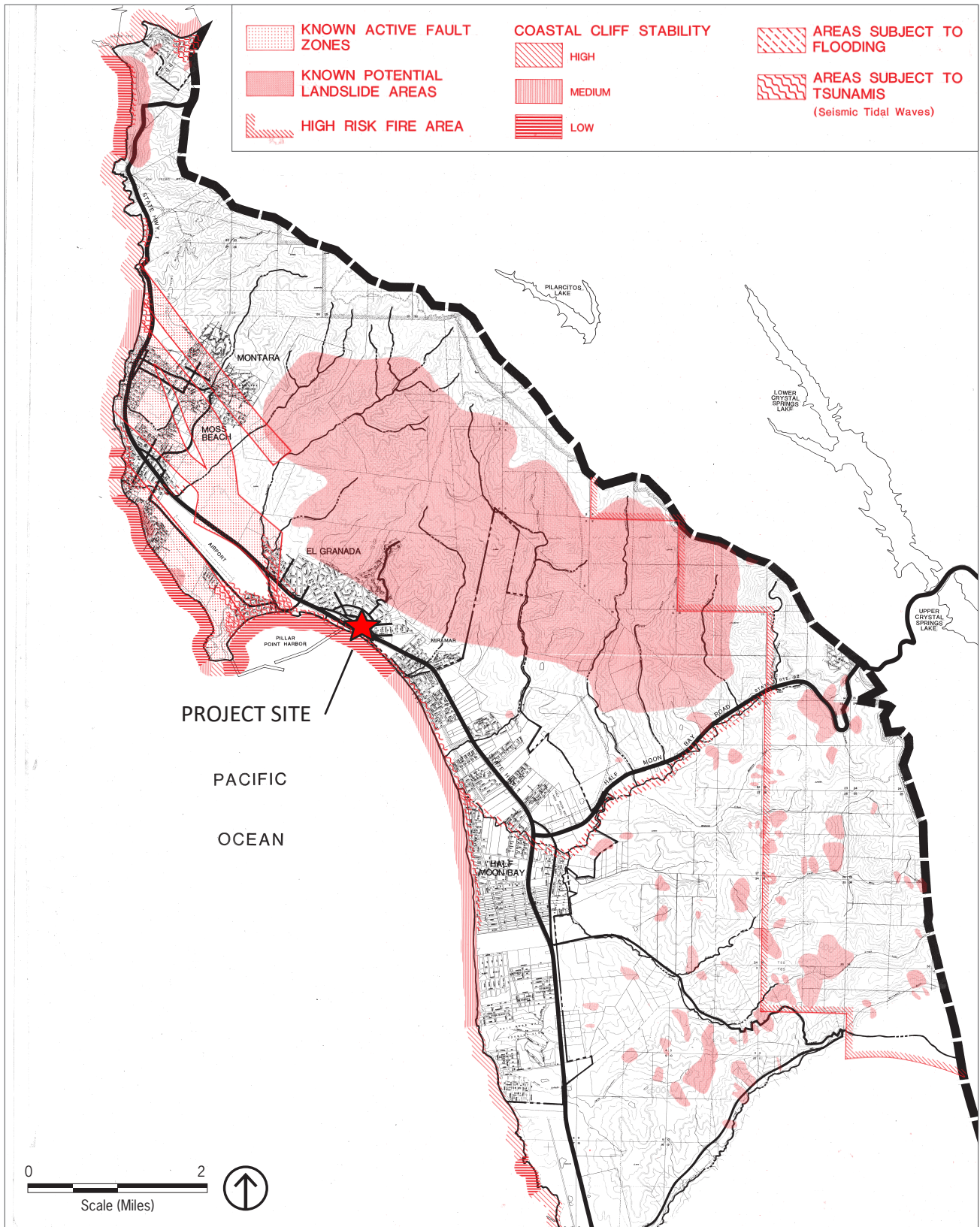
0 32,000  
Scale (Feet)



Figure 4.4-3  
San Mateo Hazards Map



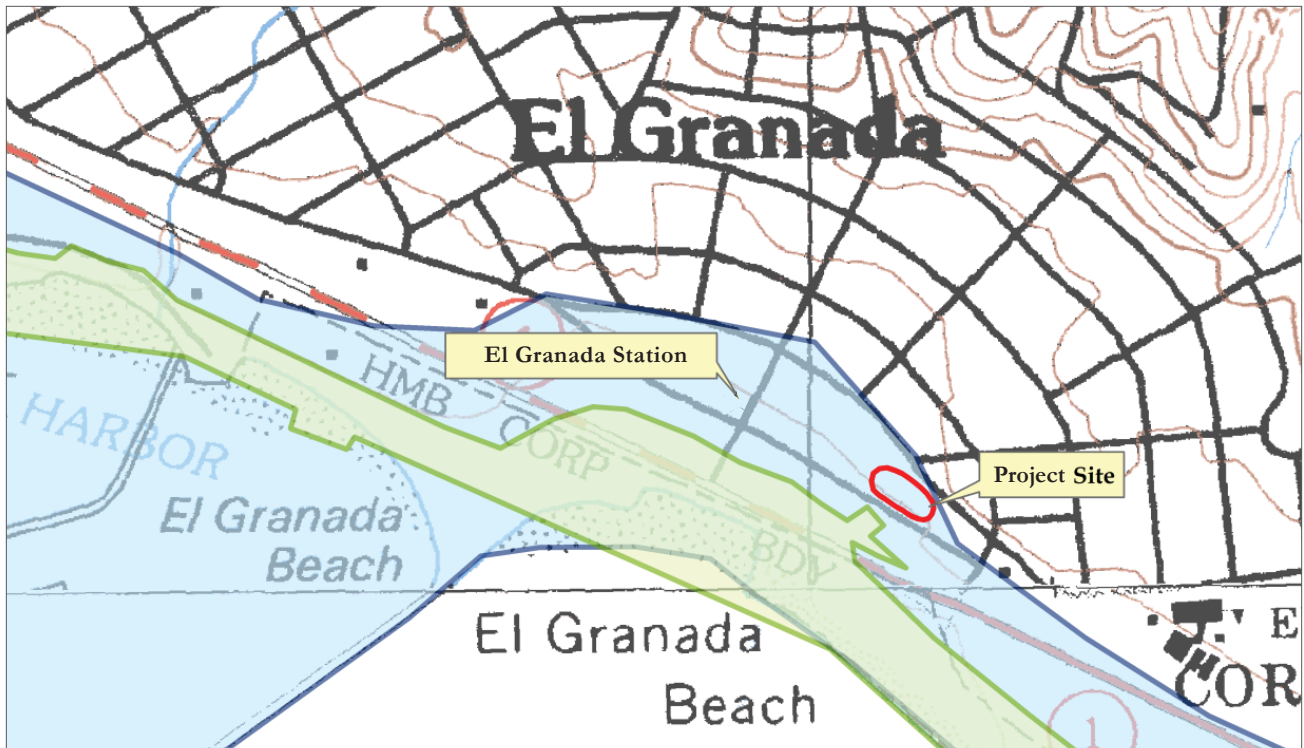
## HYDROLOGY AND WATER QUALITY



Source: San Mateo County, California, County Seismic and Safety Elements, State Division of Forestry.

Figure 4.4-4  
LCP Hazards Map

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Source: Moffatt & Nichol El Granada Fire Station Tsunami Assessment






-  Project Site
-  SAFRR Inundation
-  Cal EMA Inundation

Figure 4.4-5  
SAFRR and Cal-EMA Inundation Lines in El Granada



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As discussed below and as shown in Figure 4.4-5, the project site is located well outside the tsunami inundation area limit shown on the SAFRR map. A site specific study was prepared for this project and property by Moffat and Nichol (Appendix E of this Draft EIR).

Given the foregoing, the project site does not appear to be located within a Geotechnical or Natural Hazard area as defined by the County General Plan and is therefore consistent with the tsunami and natural and geotechnical hazards policies listed in Table 4.4-1. As discussed below, the project site also is not in an area of future sea level rise or in a future erosion zone and is therefore consistent with the sea level rise policies listed in Table 4.4-1.

### *County Sea Level Rise Vulnerability Assessment*

The County Sea Level Rise Vulnerability Assessment is part of a long-term resilience strategy to ensure the County's communities, ecosystems, and economy are prepared for climate change. The effort is funded by the California State Coastal Conservancy and conducted through a collaborative, multi-stakeholder effort. The goal of the assessment is to identify vulnerable assets on the bay and coast side of the San Mateo County peninsula, determine types of impacts, issue initial recommendations on adaptation measures, and improve flooding and sea level rise mapping. ARCADIS was selected by the County to perform a sea level rise (SLR) vulnerability assessment and they have prepared maps that show the impact of sea level rise on communities located along the Bay or coast. The sea level rise map for the south ocean side of San Mateo County, provided as Figure 4.4-4, shows a 100-year storm surge coupled with three different sea level rise scenarios: 1) no sea level rise, 2) low sea level rise of 3.3 feet, and 3) high sea level rise of 6.6 feet. As shown on Figure 4.4-6, the project site is not in an area of future sea level rise under any of the three scenarios and, further, is not in a future erosion zone.<sup>5</sup> A projected sea level rise of 6.6 feet by the year 2100 coupled with the 100-year storm surge would not impact the site (Figure 4.4-6).

### *San Mateo County Zoning Regulations*

The San Mateo County zoning regulations that are applicable for construction in tsunami and coastal high hazard zones are listed below. As discussed above, the project site is not located within a tsunami inundation zone on either the County General Plan Natural Hazards Map or the LCP Mid Coast Hazards Map and therefore the criteria set forth in Zoning Code Section 6326.2 do not appear to be applicable to the proposed project. Section 6825.3 also does not apply, because the project site is not within a coastal high hazard area, as defined in Section 6822.6 to include areas designated as Zone V1-V30, VE, or V (i.e., coastal high hazard areas) on the FEMA FIRM. The project site is in Zone X, which is outside of the 100-year and 500-year floodplain and outside of the coastal high hazard area, as shown on Figure 4.4-3.

### Section 6326.2 Tsunami Inundation Area Criteria

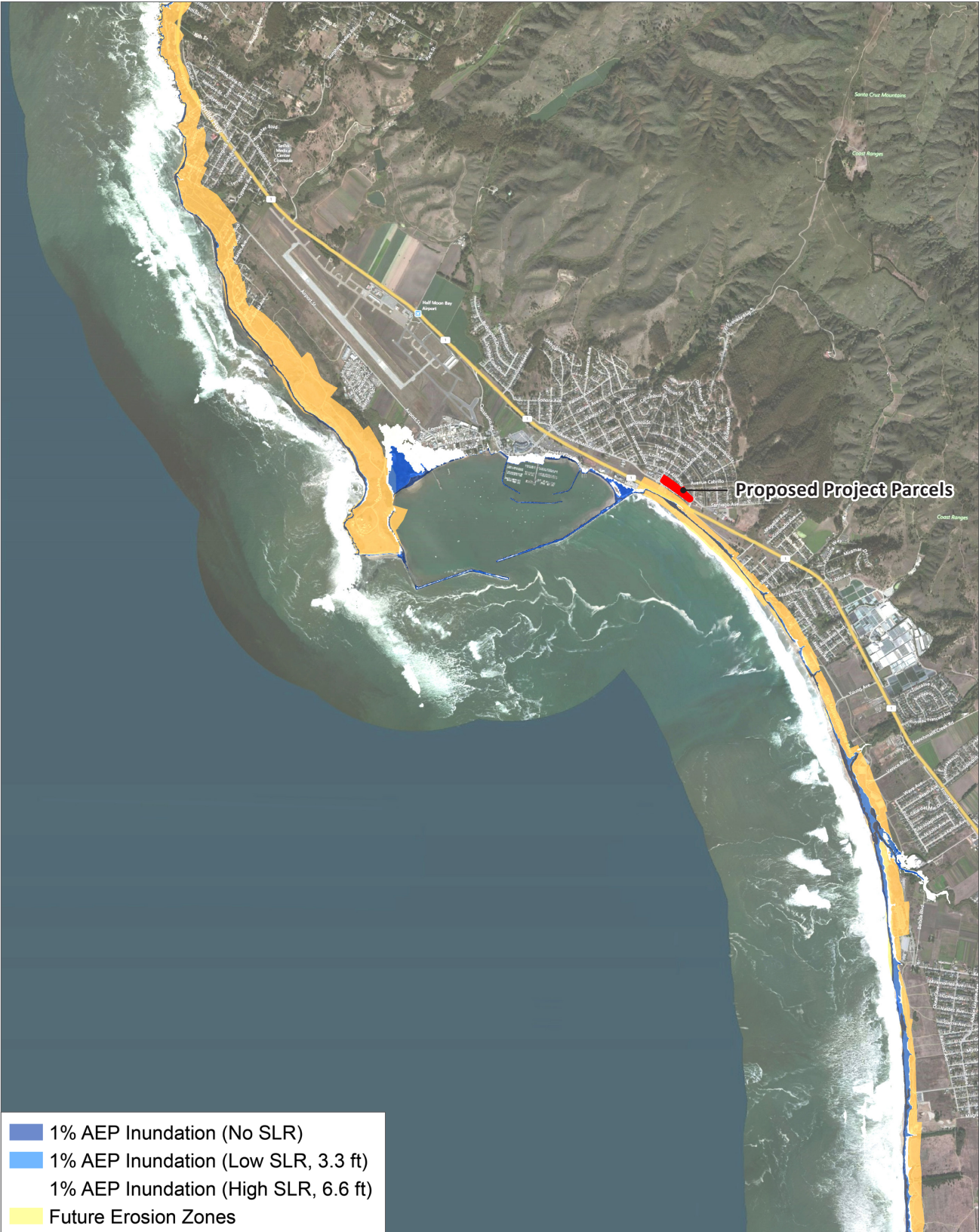
The following criteria shall apply within all areas defined as Tsunami Inundation Hazard Areas:

- a) *The following uses, structures, and development shall not be permitted: publicly owned buildings intended for human occupancy other than park and recreational facilities; schools, hospitals, nursing homes, or other buildings or development used primarily by children or physically or mentally infirm persons.*

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<sup>5</sup> Arcadis, no date. *San Mateo County Vulnerability Assessment – Ocean Side South, 1% Annual Exceedance Probability (AEP) with Three SLR Scenarios*. Prepared for San Mateo County and Coastal Conservancy.

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Source: ARCADIS.



Figure 4.4-6  
Sea Level Rise Map

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- b) *Residential structures and resort developments designed for transient or other residential use may be permitted under the following circumstances:*
- 1) *The applicant submits a report prepared by a competent and recognized authority estimating the probable maximum wave height, wave force, run-up angle, and level of inundation in connection with the parcel or lot upon which the proposed development is to be located.*
  - 2) *No structure covered by this section shall be allowed within that portion of the lot or parcel where the projected wave height and force is 50 percent or more of the projected maximum, unless: (a) the highest projected wave height above ground level at the location of the structure is less than 6 feet, (b) no residential floor level is less than 2 feet above that wave height, and (c) the structural support is sufficient to withstand the projected wave force.*
  - 3) *No structure covered by this section shall be allowed within that portion of the lot or parcel where the projected wave height and force is less than 50 percent of the projected maximum unless the requirements of subsection b, 2), (a) and (c) are satisfied and the residential flood level is at least one foot above the highest projected level of inundation.*
  - 4) *Permission under this subsection shall not be granted if the Planning Commission determines that sufficient data, upon which the report required by subsection 1) must be based, is unavailable and cannot feasibly be developed by the applicant.*

### Section 6822.6. Coastal High Hazard Area

The area subject to high velocity waters, including but not limited to coastal and tidal inundation or tsunamis. The area is designated on a FIRM as Zone V1-V30, VE or V.

### Section 6824.2. Basis for Establishing Areas of Special Flood Hazard

- a) The Areas of Special Flood Hazard identified by the Federal Insurance Administration through the Federal Emergency Management Agency in a scientific and engineering report entitled, "Flood Insurance Study, San Mateo County, California, Unincorporated Areas," and an accompanying set of Flood Boundary and Floodway Maps and Flood Insurance Rate Maps are hereby adopted by reference and are made a part of this Chapter. The Flood Insurance Study and maps are on file at the San Mateo County Department of Environmental Management, Planning, and Development Division.
- b) Such documents may, from time to time, be amended or replaced by like documents, in which case they shall be determined to be valid for the purposes 35.5.8 of this section by the Planning Director as advised by the Director of Public Works and in accordance with requirements of the Federal Emergency Management Agency, or any other successor federal agency. In the event the National Flood Insurance Program should be terminated with no successor program, the most current FIRM or successor thereof shall remain in use for purposes of this Chapter.
- c) Maps used to designate Areas of Special Flood Hazard pursuant to this section shall be made an appendix to the County's Zoning Maps. Any changes to such maps shall not require a text amendment action as otherwise required in Chapter 27 of this Part.

### Section 6825.3. Coastal High Hazard Areas

Coastal High Hazard Areas are located within Areas of Special Flood Hazards established in Section 6824.2. These areas have special flood hazards associated with high velocity waters from coastal tidal inundation

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and tsunamis. A permit for development in a Coastal High Hazard Area may be issued in accordance with the procedures established in Section 6826 provided:

- a) All buildings or structures shall be located landward of reach of the mean high tide.
- b) Man-made alteration of sand dunes which would increase potential flood damage is prohibited.
- c) The development is in compliance with applicable Standards of Construction contained in Section 8131, the Standards of Manufactured Homes contained in Section 8132, the Standards for Coastal High Hazard Areas in Section 8133 and the Standards for Water Supply and Sewage Systems contained in Section 8309 of the San Mateo County Ordinance Code, Building Regulations.
- d) The use is consistent with the General Plan and permitted by the zoning district in which the use is to be located or conducted, and all required permits and approvals are obtained.

### *San Mateo County Building Regulations*

Section 9100 of the San Mateo County Building Regulations adopts the 2013 California Building Standards Code (CBC). Appendix M of the CBC, is applicable to construction within a tsunami hazard zone. Section M101.4, Construction within the tsunami hazard zone states:

*Community critical facilities shall be permitted to be located within the tsunami hazard zone when such a location is necessary to fulfill their function, providing suitable structural and emergency evacuation measures have been incorporated.*

As discussed in Chapter 3, Project Description, the existing fire station is too small to meet near-term needs of the CFPD and the existing parcel is too small for remodeling and too close or adjacent to existing residential development to sufficiently accommodate larger firefighting apparatus. Therefore, construction of the new fire station at the proposed project site is necessary to fulfill CFPDs function to serve the public.

Consistent with Section M101.4, the CFPD adopted Standard Operating Procedures (SOP) Manual for Station 41, effective January 1, 2017, which includes a detailed response section on relocating emergency vehicles upon receipt of a pending tsunami warning. The SOP is specific for actions to be taken by Station 41 personnel upon notification of a tsunami warning and is provided as Appendix E.

### *San Mateo County Hazard Mitigation Plan*

San Mateo County recently revised the Hazard Mitigation Plan (HMP), dated July 2016. The HMP identifies potential natural hazards that threaten life and properties within the County and mitigation strategies that can be implemented to reduce long-term vulnerabilities. One of the chapters focuses on tsunamis. Although more than 80 tsunamis have been recorded or observed in California, according to State records, many of the events were small and led to little or no damage. All tsunamis from the past century have been distant, not local, resulting from earthquakes far across the Pacific Basin as opposed to earthquakes near the American coastline.

The Mitigation Plan identifies the following issues related to the tsunami hazard for the planning area:

- Hazard Identification—To truly measure and evaluate the probable impacts of tsunamis on planning, hazard mapping based on probabilistic scenarios must continue to be updated regularly. The science

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and technology in this field are emerging. Accurate probabilistic tsunami mapping will need to be a key component for tsunami hazard mitigation programs to be effective.

- **Building Code Revisions**—Present building codes and guidelines do not adequately address the impacts of tsunamis on structures. Planning partners, especially the Cities of Half Moon Bay and Pacifica, should review their building code and consider requirements for tsunami-resistant construction standards in vulnerable areas.
- **Enhancement of Current Capabilities**—As tsunami warning technologies evolve, the tsunami warning capability within the planning area will need to be enhanced to provide the highest degree of warning.
- **Vulnerable Populations Planning**—Special attention will need to be focused on the vulnerable communities in the tsunami zone and on hazard mitigation through public education, outreach, and warning capabilities. This issue may be especially important for visitors to San Mateo County

### *Collaborative Federal, State, and Local Agency SAFRR Scenario Map*

The SAFRR tsunami scenario is a collaborative effort between the U.S. Geological Survey (USGS), CGS, Cal OES, the National Oceanic and Atmospheric Administration (NOAA), other Federal, State, County, and local agencies, private companies, and academic and other institutions. The SAFRR scenario is based on a hypothetical but plausible tsunami created by a magnitude 9.1 earthquake offshore from the Alaska Peninsula and its impacts on the California coast. The SAFRR tsunami scenario integrates physical science, social science, and emergency management in creating a detailed analysis to support officials and the public in reducing the risk of the future tsunamis that will impact California. The SAFRR report presents geologic evidence for past tsunamis, modeling of tsunami generation and propagation, likely inundation areas, current velocities in key ports and harbors, physical damage and repair costs, economic consequences, environmental and ecological impacts, social vulnerability, emergency management and evacuation challenges, and policy implications for California associated with this hypothetical tsunami. Figure 4.4-5 provides the tsunami inundation zone map, which is based on the SAFRR study. As shown in Figure 4.4-5, the project site is located outside of the tsunami inundation zone.

#### **4.4.1.2 EXISTING CONDITIONS**

This section includes a discussion of the physical environment that affects tsunami and sea level rise conditions at the project site, including topography, climate, flooding and dam inundation, sea level rise and debris flows, and seiches and tsunamis.

### **Climate and Topography**

The El Granada and Half Moon Bay area have a cool summer Mediterranean climate with temperatures rarely exceeding 90 degrees Fahrenheit (°F) or dropping below 32°F. During the summer, average high temperatures range between 63°F and 67°F and average low temperatures in the winter range between 43°F and 44°F and cool during the winter with temperatures in the 50s. The warmest month of the year is September with an average maximum temperature of 67°F while the coldest months are December and January with an average low temperature of 43°F. Average annual precipitation for the Half Moon Bay

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area is about 26 inches, falling primarily between the months of November to April.<sup>6</sup> There is often fog and overcast skies during the night and morning hours, usually clearing during the afternoon. Persistent sea breezes help to moderate the climate along the coast.

Topography within the project site slopes with a gentle gradient to the south. Ground surface elevations at the project site generally range from 48 to 25 feet above mean sea level (msl).

### Flooding and Dam Inundation

FEMA prepares maps of the 100-year flood hazard area of U.S. communities. Areas within the 100-year flood hazard area are subject to 100-year flood, which means that in any given year, the risk of flooding in the designated area is 1 percent. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent. The project site is not within a 100-year or 500-year floodplain, as per FEMA Flood Insurance Rate Map (FIRM) No. 06082C0140E, dated October 16, 2012. Figure 4.4-1 shows the FEMA floodplain map that encompasses the project site. The project site is zoned X, which is outside of both the 100-year and 500-year floodplain and therefore FEMA and County floodplain policies do not apply to this site.

The California Office of Emergency Services (Cal OES) has compiled dam inundation maps for San Mateo County.<sup>7</sup> A review of these maps indicate that the project site is not located within a dam inundation area and is not subject to dike/levee failures. Therefore, there would be no potential impact due to flooding from dams or levees.

### Sea Level Rise and Debris Flows

A rise in average global temperatures due largely to an increase in greenhouse gas (GHG) emissions is expected to be accompanied by a rise in global sea levels.

San Mateo County is considered to be the most vulnerable county in the Bay area in terms of sea level rise and is working with a broad coalition of governments across jurisdictional boundaries to better understand and prepare for the potential impacts of sea level rise related to flooding and inundation, storm and tide surge, salt water intrusion, and shoreline erosion. The goal of the sea level vulnerability assessment is to identify vulnerable assets on the Bay and coast side of the San Mateo County peninsula, determine types of impacts, issue initial recommendations on adaptation measures, and improve flooding and sea level rise mapping. The County has prepared preliminary maps that show the impact of sea level rise on communities located along the Bay or coast. The sea level rise map for the south ocean side of San Mateo County shows a 100-year storm surge coupled with three different sea level rise scenarios: 1) no sea level rise, 2) low sea level rise of 3.3 feet, and 3) high sea level rise of 6.6 feet.

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<sup>6</sup> Western Regional Climate Center, 2012. *General Climate Summary Tables – Half Moon Bay, California*.

<sup>7</sup> California Office of Emergency Services (Cal OES), 2009. *Dam Inundation Registered Images and Boundary Files in Shape File Format. Version FY 2014*. Dated April 2016.



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As discussed above, and as shown on Figure 4.4-6, the project site is not in an area of future sea level rise and is not in a future erosion zone.<sup>8</sup> A projected sea level rise of 6.6 feet by the year 2100 coupled with the 100-year storm surge would not impact the site (Figure 4.4-6).

The project site is not susceptible to debris flows, as per the San Mateo County debris flow source map.<sup>9</sup> Therefore, there would be no impacts associated with sea level rise or debris flows at the project site for the life of the project.

### Seiches and Tsunamis

Seiches are waves that oscillate in enclosed water bodies, such as reservoirs, lakes, ponds, swimming pools, or semi-enclosed bodies of water, such as San Francisco Bay. Because there are no reservoirs, lakes, semi-enclosed water bodies, or large water storage tanks in close proximity to the site, it would not be subject to flooding from a seiche.

A tsunami is a series of high-energy ocean waves generated by an earthquake, landslide, or volcanic activity. As tsunamis reach the shoreline, they may take the form of a fast-rising tide, a cresting wave, or a bore (i.e., large, turbulent wall-like wave). The configuration of the coastline, the shape of the ocean floor, and the characteristics of the advancing waves determine the impact and extent of wave-runup.

As discussed in the San County Hazard Mitigation Plan, the most likely tsunami event to strike San Mateo County would be a distant earthquake near Alaska or Chile generating a tsunami with wave heights of 1 to 2 meters reaching Half Moon Bay or Pacifica. The proposed fire station with a base finish floor elevation of 31.6 feet would be well above the inundation zone from this event.

As discussed above, the project site does not appear to be located within a tsunami inundation zone on either the County General Plan Natural Hazards Map provided as Figure 4.4-3 or the LCP Hazards Map, provided as Figure 4.4-4 which govern the applicability of the LCP and County Zoning and Building regulations related to tsunamis and other coastal hazards. The project site does however fall just within the inland limit of the tsunami inundation zone of the Cal-EMA map shown on Figure 4.4-2. As discussed above, the Cal-EMA map is “intended for local jurisdictional, coastal evacuation planning use only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.” Also as stated on the map, “the accuracy of the inundation line...is subject to limitations in the accuracy and completeness of available terrain and tsunami source information and the current understanding of tsunami generation and propagation phenomena as expressed in the models.” The map also states that “it was created by combining inundation results for an ensemble of source events affecting a given region” and “for this reason, all of the inundation region in a particular area *will not likely be inundated during a single tsunami event.*”

Figure 4.4-5 provides the map based on the SAFRR (Science Application for Risk Reduction) tsunami scenario report, a collaborative effort between the USGS, the CGS, Cal OES, NOAA, and other Federal,

<sup>8</sup> Arcadis, no date. *San Mateo County Vulnerability Assessment – Ocean Side South, 1% Annual Exceedance Probability (AEP) with Three SLR Scenarios*. Prepared for San Mateo County and Coastal Conservancy.

<sup>9</sup> San Mateo County, undated. *Debris Flow Source Area*. [http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Debris\\_Flow.pdf](http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Debris_Flow.pdf), accessed September 16, 2016.

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State, County, and local agencies, private companies, and academic and other institutions. As shown on Figure 4.4.4-5, the project site is well outside the tsunami inundation zone on the SAFRR map.

As concluded in the Moffat & Nichol Site Specific Study dated March 10, 2016, extrapolation of tsunami runup elevations from both the Cal-EMA and the SAFRR maps for a 100-year recurrence interval resulted in a runup elevation range of 8 to 10 feet. Ground elevations at the project site range from 25 to 44 feet with a finish floor elevation of the proposed new fire station at 31.6 feet. Therefore, a 100-year tsunami event is not expected to reach the project site.

### 4.4.2 STANDARDS OF SIGNIFICANCE

An Initial Study was prepared for the project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the project would not result in significant environmental impacts per the following significance criteria and therefore, these criteria are not discussed in this chapter.

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial flooding on- or off-site.
- Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems.
- Otherwise substantially degrade water quality.
- 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 delineation map.
- 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.

Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, and comments provided during the public review process, it was determined that the proposed project could result in a significant hydrology and water quality impact if it would:

1. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows or be impacted by sea level rise.
2. Potentially be inundated by a tsunami, seiche, or mudflow.



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### 4.4.3 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to hydrology and water quality. The California Supreme Court in a December 2015 opinion (*California Building Industry Association v. Bay Area Air Quality Management District*) confirmed that CEQA, with several specific exceptions, does not require that public agencies analyze the impact that existing environmental conditions might have on a project. An agency must analyze how environmental conditions might adversely affect a project only if the project itself might worsen or exacerbate existing environmental hazards, or if one of the provisions of CEQA which requires such an analysis for certain airport, school, and housing projects applies. Therefore, the introduction of people or structures to existing flooding hazards would not be considered an impact under CEQA. Nevertheless, the following impact analyses are provided for informational purposes

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<b>HYDRO-1</b>	<b>The proposed project would not place within a 100-year flood hazard area structures which would impede or redirect flood flows or be impacted by future sea level rise.</b>
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The proposed project is not within a 100-year floodplain, according to FEMA FIRM No. 06081C0140E, dated October 16, 2012. The FIRM shows the site is in Zone X, which is an area of minimal flood hazard that is outside the 100-year and 500-year floodplain. Therefore, the proposed project would not place structures within a 100-year floodplain that could impede or redirect flood flows.

As reported in the Initial Study, the project site is within the mapped area subject to coastal flooding with future sea level rise.<sup>10</sup> The Pacific Institute mapped the extent of potential flooding associated with a 100-year coastal flood event coupled by a sea level rise of 55 inches. However, since the initial study was published, San Mateo County has been conducting a sea level rise vulnerability assessment to better understand and prepare for the potential impacts of sea level rise.<sup>11</sup> Detailed inundation maps have been prepared for the San Mateo County coastal zone and areas that border San Francisco Bay. The maps show the 100-year storm surge (extreme tide) coupled with three different sea level rise scenarios: 1) no sea level rise, 2) a low sea level rise of 3.3 feet, and 3) a high sea level rise of 6.6 feet. The inundation map for San Mateo County, Ocean Side South, shows that the project site is outside of all three inundation scenarios, and therefore the project would not be impacted by sea level rise.<sup>12</sup> The National Oceanic and Atmospheric Administration (NOAA) sea level rise map also shows that a projected sea level rise of 6 feet by the year 2100 would not impact the site.<sup>13</sup> Therefore, there would be *no impact* due to sea level rise and no mitigation measures are required.

**Significance Without Mitigation:** No impact.

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<sup>10</sup> Pacific Institute, 2009. *California Flood Risk: Sea Level Rise, Half Moon Bay Quadrangle*.

<sup>11</sup> San Mateo County, 2016. *Sea Change San Mateo County, Sea Level Rise Vulnerability Assessment*. <http://seachangesmc.com/current-efforts/vulnerability-assessment/>, accessed on November 4, 2016.

<sup>12</sup> San Mateo County, Coastal Conservancy, and Arcadis, no date. *San Mateo County Vulnerability Assessment – Ocean Side South, 1% Annual Exceedance Probability (AEP) with Three SLR Scenarios*.

<sup>13</sup> National Oceanic and Atmospheric Administration (NOAA), 2016. *Sea Level Rise and Coastal Flooding Impacts*. <http://coast.noaa.gov/slr/>, accessed September 16, 2016.

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### **HYDRO-2      The proposed project would not be subject to inundation by a tsunami, seiche or mudflow.**

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This analysis is based on the County General Plan Natural Hazards Map (Figure 4.4-3), the LCP Mid Coast Hazards Map (Figure 4.4-4), the Cal-EMA map (Figure 4.4-2), the SAFRR map (Figure 4.4-5), a site-specific tsunami assessment prepared by Moffatt & Nichol to address potential impacts from siting the proposed fire station within a mapped tsunami inundation zone,<sup>14</sup> as well as letters from the CCC in response to the Moffatt & Nichol report. A copy of the March 2016 Moffatt & Nichol tsunami assessment, along with the CCC letters, are provided in Appendix E of this Draft EIR.

General Plan Policy 15.18 requires that when reviewing development proposals, the County use the Natural Hazards map to determine general areas where geotechnical hazards may be present. The Natural Hazards map (Figure 4.4-3) does not appear to show the project site within a tsunami inundation or other natural hazards area. The project site is also not shown within the tsunami inundation area on the LCP Mid Coast Hazards Map (Figure 4.4-4).

Although the project site appears to be outside the tsunami zones depicted on both the General Plan Natural Hazards Map and the LCP Hazards Map, General Plan Policy 15.18 provides that when the Natural Hazards map does not clearly illustrate the presence or extent of geotechnical hazards, the County may rely on more “detailed maps” including maps prepared by the United States Geological Survey, or any other geotechnical investigation or source of information considered to be valid by the County of Department of Public Works.

Two other maps were also used in this analysis - the 2009 Cal-EMA map (Figure 4.4-2) and the 2013 SAFRR map (Figure 4.4-5). The project site is located just within the upland limit of the tsunami inundation zone shown in the Cal-EMA map but it is well outside the tsunami inundation zone shown in the SAFRR map.

A site-specific study dated March 10, 2016 addressing the differences between the Cal-EMA map and the SAFRR map was conducted by Moffett & Nichol. This study is presented in Appendix E and is summarized below. As acknowledged by the CCC in its letter dated January 29, 2016, “Commission staff recognizes that while the entirety of the site is located within the Cal-EMA tsunami inundation area, there is a question to whether this project site is entirely within the tsunami inundation area delineated on the Natural Hazards Maps. As such, staff finds it is reasonable for the County to conduct a more site-specific evaluation to determine the tsunami hazards on the site; and the results of the Moffatt & Nichol study can be useful in consideration of the fire station re-location.”<sup>15</sup>

The Cal-EMA map states that it “is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.” Personnel at Cal OES were contacted and they indicated that the Cal-EMA maps are primarily for evacuation planning and were

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<sup>14</sup> Moffatt & Nichol, 2016. *Site Specific Tsunami Study, Relocation of El Granada Fire Station 41*. March 10.

<sup>15</sup> California Coastal Commission (CCC), 2016. Letter to Summer Burlison, Project Planner, County of San Mateo – Planning and Building Department from Renee Ananda, Coastal Program Analyst, Coastal Commission – North Central Coast District regarding *Site Specific Tsunami Study – Relocation El Granada Fire Station (PRE2015-00029)*. Dated January 29, 2016.

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not developed specifically for land use planning purposes.<sup>16</sup> The map also states that “the accuracy of the inundation line...is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models.” The map was created by combining inundation results for a series of tsunami events and thus it is stated that for this reason, “all of the inundation region in a particular area will not likely be inundated during a single tsunami event.”<sup>17</sup>

As acknowledged in the CCC letter dated January 29, 2016, the Cal-EMA map covers all return period tsunamis, up to about a 1,000-year return period with the 1,000-year return period primarily applying to the inland-most extent of the inundation zone. Moffat & Nichols' review of topographic information for the site, literature review, and discussions with authors of the 2009 Cal OES confirm that the maximum inland limit of runup shown on the Cal-EMA map is based on tsunamis having a return period of up to 1,000 years. The Cal-EMA map is based on the aggregated maximum tsunami runup from a group of extreme tsunami events, using the MOST (Method of Splitting Tsunami) model with a mean high water tide condition. The aggregated events include realistic local and earthquakes as well as hypothetical extreme undersea, near-shore landslides. Dr. Patrick Lynett from the USC Tsunami Research center provided feedback on the return period associated with the Cal-EMA map, indicating that ongoing probabilistic modelling has shown the inundation line has a return period in the range of 1,000 years.<sup>18</sup>

As shown on Figure 4.4-2, both the project site and the existing Fire Station No. 41 are located just within the upland limit of the Cal-EMA mapped tsunami inundation zone. The typical design criterion for buildings in California is based on the maximum credible earthquake, which has a 475-year return interval. Therefore, the probability of tsunami-induced inundation at the project site (and the existing Fire Station No. 41) is lower than the probability of damage from the maximum credible earthquake.

The more recent 2013 SAFRR tsunami inundation map was developed as part of the SAFRR tsunami study, carried out by the USGS in collaboration with NOAA, the CGS, Cal OES). The map evaluates a single hypothetical, yet plausible tsunami event generated by a magnitude 9.1 earthquake off the Pacific coast of the Alaska Peninsula, based on the knowledge that tsunamis originating from this region of Alaska pose the greatest threat to the California coastline.

As shown on Figure 4.4-5, the tsunami inundation line for the SAFRR map does not extend as far inland as the Cal-EMA map and depicts the project site well outside the SAFRR map tsunami inundation zone. The inundation extent reaches elevations of about 15 to 22 feet NAVD88, leaving a distance of about 90 feet from the farthest inland reach of the inundation to the nearest property boundary of the site. The inundation associated with the SAFRR scenario is estimated to have a return period between 200 and 250 years.

Typically, a return period of 100 years (i.e., 1 percent annual probability) is used for flood hazard analysis under FEMA guidance. As concluded in the Moffat & Nichol Site Specific Study dated March 10, 2016, extrapolation of tsunami runup elevations from both of the Cal-EMA and the SAFRR maps resulted in a

<sup>16</sup> Personal communication with Mr. Rick Wilson, Senior Engineering Geologist and Coordinator for the for the State of California Tsunami Preparedness and Hazard Mitigation Program on November 9-10, 2016

<sup>17</sup> California Emergency Management Agency (Cal-EMA), 2009. *Tsunami Inundation Map for Emergency Planning*. Dated June 15, 2009.

<sup>18</sup> Moffet & Nichol, 2016. *Site Specific Tsunami Study, Relocation of El Granada Fire Station 41*. Dated. March 10, 2016.

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100-year tsunami runup elevation range of 8 to 10 feet. NAVD88. Ground elevations at the project site range from 25 to 44 feet with a finish floor elevation of the proposed new fire station at 31.6 feet. Therefore, a 100-year tsunami event is not expected to inundate the project site.

Based on the foregoing, the project site is not located within a tsunami inundation hazard zone as defined by the County General Plan and Zoning Ordinance, and therefore the tsunami inundation criteria set forth in Zoning Code Section 6326.2 are not applicable to the proposed project. The CCC letter dated September 7, 2016 states that “[w]e recommend, even if the County determines that LCP Section 6326.2 does not apply to the proposed project site, that the County consider the results of the Cal-EMA analysis in designing the structure to withstand tsunamis since flooding may result in high demand for emergency services. The applicant should plan for and demonstrate that they can re-locate equipment and personnel so that threats to this facility will not mean that all fire and emergency services are lost in the event of a tsunami.”

The County of San Mateo has adopted the California Building Code (CBC) for the design of structures permitted within the County. The currently adopted CBC section applicable to the design for Tsunamis is Appendix M, Section M101, Tsunami Generated Flood Hazard. Section M101.4, Construction within a Tsunami Hazard Zone, and specifically Exception 2, indicates that “Community Critical Facilities shall be permitted within the Tsunami Hazard Zone when such a location is necessary to fulfill their function, provided suitable structural and emergency evacuation procedures have been incorporated”. The current station design meets the structural design requirements for an essential service facility.

Further, as provided in Appendix E, the Fire District has established Standard Operating Procedures for emergency evacuation of their personnel and equipment from Station 41 in the event of a Tsunami warning. As discussed in the Moffat & Nichol report, the low-probability, far-field tsunamis that the project site is vulnerable to travel over great distances over the Pacific Ocean before arriving at the site. This typically takes over 4 hours from the time that a seismic event occurs providing sufficient time for a tsunami warning and allowing the CFPD adequate time to relocate equipment and personnel before the tsunami reaches shore.

The September 7, 2016 CCC letter also recommends that the County require that the structure is safe from coastal high hazards, including potential sea level rise, for the life of the development. As discussed above, the project is not located within a coastal high hazard area as defined by Zoning Code Section 6822.6 because it is not in an area designed on a FIRM as Zone V1, V30, VE or V. The project site is in Zone X, which is outside of the 100-year and 500-year floodplain and outside of the coastal high hazard area, as shown on Figure 4.4-1. Therefore, the criteria for coastal high hazards set forth in Section 6825.3 also does not apply.

Nonetheless, pursuant to the CCC request in its letter dated January 29, 2016, Chapter 5, Alternatives, analyzes the Modified Site Plan Alternative consistent with Zoning Code Section 6825.3 design standards for coastal high hazards. As discussed above, the project would not be impacted by sea level rise even under the County’s sea level rise vulnerability assessment worst case scenario (6.6 feet.) Moreover, the Moffett & Nichol study evaluated the potential for sea level rise in combination with a typical tsunami event. Comparing the lowest existing site elevation of 25 feet to the elevation of a 100-year recurrence interval tsunami of 8 to 10 feet, there would be about 15 feet of freeboard at this location. Even with the SAFRR tsunami scenario runup in the 15 to 22 feet range, there is sufficient allowance such that the

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tsunami event would not result in inundation at the fire station, which will have a finish floor elevation of 31.6 feet.

In conclusion, the project's impacts in relation to tsunami inundation are *less than significant* and no mitigation is required. Moreover, it is important to note that even if the project site was considered to be located within a tsunami inundation zone, due to the existing fire station's location, the proposed re-location just 600 feet away would not exacerbate existing conditions. Therefore, because CEQA does not require analysis of the environment's impacts on a project unless it would exacerbate existing conditions, no analysis of a potential tsunami on the project would be required under CEQA.

As discussed above, the project site is also not susceptible to inundation by seiche because it is not located within the vicinity of reservoirs, lakes, semi-enclosed water bodies, or large water storage tanks and it would not be susceptible to inundation by mud or debris flows, as shown on the San Mateo County debris flow source map.<sup>19</sup> Therefore, the project would have no impacts related to inundation by seiches or mud flows.

**Significance Without Mitigation:** Less than significant.

### 4.4.4 CUMULATIVE IMPACTS

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<b>HYDRO-3</b>	<b>The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to hydrology and water quality.</b>
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This section analyzes potential cumulative impacts to hydrology and water quality as it pertains to flooding, tsunamis, and sea level rise that could occur from the impacts of the project in conjunction with other past, present and reasonably foreseeable projects in the surrounding area. Because the impact of the environment on a project need not be considered in CEQA documents unless it would exacerbate existing conditions this cumulative impact analysis will focus on whether the proposed project and future projects in the area would exacerbate existing conditions.

The San Mateo County map for sea level rise (Figure 4.4-6) shows very limited areas that are subject to sea level rise along the Pacific Coast. All of the areas north of Pacific Coast Highway, which encompasses the project site and most of El Granada, are not impacted by sea level rise. Therefore, the cumulative impact in terms of sea level rise would be less than significant.

The project site is not within a 100-year floodplain. Most of the areas in El Granada that are within a designated 100-year floodplain are along the coastline south of Pacific Coast Highway and in the immediate area of El Granada Creek. Development in these areas would be subject to the FEMA and County regulations for building within a 100-year floodplain. Therefore, impacts from development in these areas would not exacerbate existing conditions and the cumulative impact would be less than significant.

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<sup>19</sup> San Mateo County, undated. *Debris Flow Source Area*. [http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Debris\\_Flow.pdf](http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Debris_Flow.pdf), accessed September 16, 2016.

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With respect to tsunamis, the majority of El Granada is outside of the tsunami evacuation zone, as shown on Figures 4.4-2 and 4.4-5. Although the project site is within the tsunami evacuation zone for the Cal-EMA map (Figure 4.4-2), it is outside of the tsunami evacuation zone for the County's adopted Natural Hazards map and the LCP Mid Coast Hazards Map, and the SAFRR map (Figure 4.4-5). The evacuation zone for the SAFRR map is primarily south of Obispo Road and south of Pacific Coast Highway but does include the Princeton area. However, development within any of these areas would not exacerbate existing conditions and would be subject to the requirements of County regulations. Therefore, the cumulative impacts from development within tsunami evacuation zones would be less than significant.

**Significance Without Mitigation:** Less than significant.

## 4.5 NOISE

This chapter describes the regulatory framework and existing conditions in the vicinity of the proposed project related to noise, as well as the potential impacts of the project on the noise environment. The chapter begins with a discussion of the fundamentals of sound and vibration, and an examination of relevant federal, State, and local guidelines, policies, and standards regarding noise and vibration. The remainder of the chapter provides an evaluation of the potential noise- and vibration-related environmental consequences of the proposed project. The supporting analysis considers noise levels at existing receptor locations; evaluates potential noise impacts associated with the project. Noise calculations on which this analysis is based are included in Appendix F, Noise Monitoring and Modeling Data.

### 4.5.1 ENVIRONMENTAL SETTING

#### 4.10.1.1 BACKGROUND

##### Noise Descriptors

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this section:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Intrusive.** Noise that intrudes over and above the existing ambient noise at a given location. Relative intrusiveness depends on amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.
- **Decibel (dB).** A unit-less measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **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.
- **Equivalent Continuous Noise Level ( $L_{eq}$ ).** The mean of the noise level (or energy) averaged over the measurement period.
- **Statistical Sound Level ( $L_n$ ).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the  $L_{50}$  level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The  $L_{10}$  level, likewise, is the value that is exceeded 10 percent of the time (i.e.,

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near the maximum) and this is often known as the “intrusive sound level.” The  $L_{90}$  is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”

- **Day-Night Sound Level ( $L_{dn}$  or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

## Characteristics of Sounds

When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), and duration (time). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate the human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The normal range of human hearing extends from approximately 0 dBA (the threshold of detection) to 140 dBA (the threshold of pain).

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale to better account for the large variations in pressure amplitude (the above range of human hearing, 0 to 140 dBA, represents a ratio in pressures of one hundred trillion to one). All noise levels in this study are relative to the industry-standard pressure reference value of 20 micropascals. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 4.5-1 presents the subjective effect of changes in sound pressure levels.

**TABLE 4.5-1 CHANGE IN APPARENT LOUDNESS**

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen, 2009.

Sound is generated from a source; the decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as spreading loss or distance attenuation.

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level during that period can be obtained. For example,  $L_{50}$  is the noise level that is exceeded 50 percent of the time. Similarly, the  $L_{02}$ ,  $L_{08}$ , and  $L_{25}$  values are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. 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. The energy-equivalent sound level ( $L_{eq}$ ) is the most common parameter associated with community noise measurements. The  $L_{eq}$  metric is a single-number noise descriptor of the energy-average sound level over a given period of time. An hour is the most common period of time over which average sound is measured, but it can be measured over



any duration. Other values typically noted during a noise survey are the  $L_{\min}$  and  $L_{\max}$ . These values are the minimum and maximum root-mean-square (RMS) noise levels obtained over the stated measurement period.

Since sensitivity to noise increases during the evening and at night, when excessive noise can interfere with relaxation and/or the ability to sleep, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. Because of this increased sensitivity to unwanted noise intrusion during the evening and nighttime hours, State law requires, for planning purposes, that this increased noise sensitivity be accounted for. The Day/Night Average Sound Level,  $L_{dn}$ , is a measure of the cumulative noise exposure in a community, with a 10 dB addition to nocturnal (10:00 p.m. to 7:00 a.m.) noise levels. The Community Noise Equivalent Level (CNEL) is a similar 24-hour cumulative measure of noise; however it differs slightly from  $L_{dn}$  in that 5 dB is added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

## Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system; prolonged noise exposure in excess of 75 dBA increases body tensions, thereby affecting blood pressure and functions of the heart and nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level (SPL) number means. To help relate noise level values to common experience, Table 4.5-2 shows typical noise levels from noise sources.

Causes for annoyance include interference with speech, radio, television, and sleep and rest, as well as induced structural vibrations. The  $L_{dn}$  as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. The threshold for annoyance from vehicle noise is about 55 dBA  $L_{dn}$ . At an  $L_{dn}$  of about 60 dBA, approximately 8 percent of the population is highly annoyed.

When the  $L_{dn}$  increases to 70 dBA, the highly annoyed proportion of the population increases to about 20 to 25 percent. Therefore, there is an increase of about 2 percent per decibel of increased noise between an  $L_{dn}$  of 60 to 70 dBA. The thresholds for speech interference indoors are approximately 45 dBA for continuous noise and approximately 55 dBA for fluctuating noise. The thresholds outdoors are roughly 15 dBA higher. Steady noise above 35 dBA and fluctuating noise levels above roughly 45 dBA have been shown to affect sleep.

## Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers.

## NOISE

TABLE 4.5-2 TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet, at 50 miles per hour		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Bies and Hansen, 2009.

Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity, and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated

from vibration of a structure or items within a structure. These types of vibration are best measured and described in terms of velocity and acceleration.

The three main types of waves associated with groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation.
- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.
- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the RMS velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to 1 micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Man-made vibration problems are, therefore, usually confined to relatively short distances (500 to 600 feet or less) from the source.

## Effects of Vibration

Table 4.5-3 displays human annoyance and the effects on buildings resulting from continuous vibration. As discussed previously, annoyance is a subjective measure and vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Human response to ground vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is  $1 \times 10^{-6}$  inch/second RMS, which equals 0 VdB, and 1 inch/second equals 120 VdB. The abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

## NOISE

**TABLE 4.5-3 REACTION OF PEOPLE AND DAMAGE TO BUILDINGS FOR CONTINUOUS/FREQUENT INTERMITTENT VIBRATION LEVELS**

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

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

One of the problems with developing suitable criteria for groundborne vibration is the limited research into human response to vibration and, more importantly, human annoyance inside buildings. The U.S. Department of Transportation, Federal Transit Administration has developed rational vibration limits that can be used to evaluate human annoyance to groundborne vibration. These criteria are primarily based on experience with rapid transit and commuter rail systems, and are discussed in greater detail in the regulations section of this document.

Railroad and transit operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of track. Trains generate substantial vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions.

Construction operations generally include a wide range of activities that can generate groundborne vibration, which varies in intensity depending on several factors. In general, blasting and demolition of structures, as well as pile driving and vibratory compaction equipment generate the highest vibrations. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary, depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement conditions.

“Architectural” damage can be classified as cosmetic only, such as minor cracking of building elements, while “structural” damage may threaten the integrity of a building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to a building.

Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activity occurs immediately adjacent to the structure. Table 4.5-4 shows the criteria established by the Federal Transit Administration (FTA) for the likelihood of structural damage due to vibration.

**TABLE 4.5-4 GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE**

	Building Category	PPV (in/sec)	L <sub>v</sub> (VdB) <sup>a</sup>
I.	Reinforced concrete, steel, or timber (no plaster)	0.5	102
II.	Engineered concrete and masonry (no plaster)	0.3	98
III.	Non-engineered timber and masonry buildings	0.2	94
IV.	Buildings extremely susceptible to vibration damage	0.12	90

<sup>a</sup> RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch/second.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

## Noise- and Vibration-Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration, including residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Sensitive receptors within El Granada include residences, schools, and recreational areas within the vicinity of the project site, as shown on Figure 4.5-1. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not considered noise- and vibration-sensitive receptors, since noise- and vibration-sensitive activities are less likely to be undertaken in these areas, and because these uses often themselves generate noise in excess of what they receive from other uses.

### 4.5.1.2 REGULATORY FRAMEWORK

This section describes the regulatory framework related to noise and vibration in the vicinity of the project site.

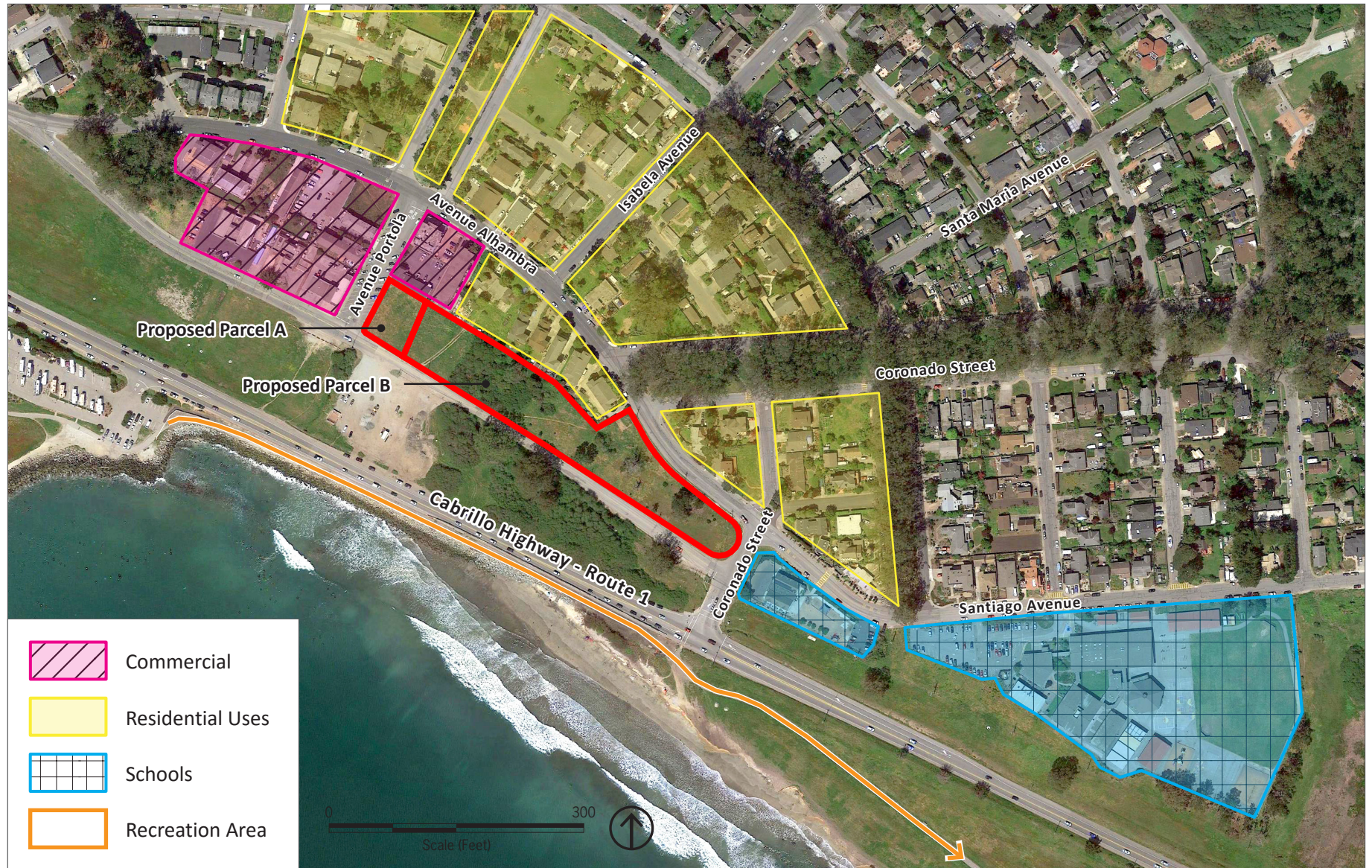
## State Regulations

### *California Building Code*

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, *Interior Environment*, Section 1207.11.2, *Allowable Interior Noise Levels*, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L<sub>dn</sub>) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.



NOISE



Source: PlaceWorks, 2016. Google Earth Pro., 2016.

 Proposed Project Site

PLACEWORKS

Figure 4.5-1  
Sensitive Receptors Near the Proposed Project Site



### *California Green Building Standards Code (CALGreen)*

The California Green Building Standards Code (CALGreen), Chapter 5, Division, 5.5 has additional requirements for insulation that affect exterior-interior noise transmission for non-residential structures: Pursuant to Section 5.507.4.1, *Exterior Noise Transmission, Prescriptive Method*, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite sound transmission class (STC) rating of at least 50  $L_{dn}$  or CNEL or a composite outdoor-indoor transmission class (OITC) rating of no less than 40  $L_{dn}$  or CNEL with exterior windows of a minimum STC of 40 or OITC of 30 within a 65 dBA CNEL noise contour of an airport or within a 65 dBA CNEL or  $L_{dn}$  noise contour of a freeway, expressway, railroad, industrial source, or fixed-guideway source as determined by the noise element of the general plan. Where noise contours are not readily available, buildings exposed to a noise level of 65 dBA  $L_{eq}$  1-hour during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45  $L_{dn}$  or CNEL (or OITC 35), with exterior windows of a minimum of STC 40 (or OITC 30).

Residential structures located within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants for new the residential projects are required to submit an acoustical analysis report. The report is required to show topographical relationship of noise sources and dwelling site, identification of noise sources and their characteristics, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be un-openable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

The State of California, through its General Plan Guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in CNEL. These land use compatibility guidelines are shown in Table 4.5-5. These same State land use noise compatibility standards remain in place today.


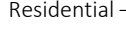



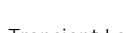
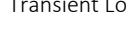

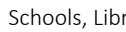


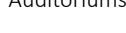

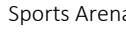

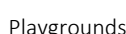
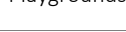



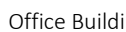


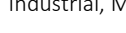


















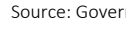









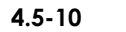


## **Local Regulations**

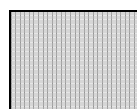
### *San Mateo County General Plan Noise Element*

San Mateo County has not updated its county-wide General Plan since 1986. Chapter 16, Issue I of the General Plan includes a section specific to noise (referred to herein as 'The Noise Element'), and hasn't been updated since 1976. This section of the General Plan presents a comprehensive assessment of noise exposure within the unincorporated areas of the County, and sets objectives and management policies to improve the County noise environment. Pertinent portions of this General Plan are included herein. The Element adopts State land use-noise compatibility standards (shown in Table 4.5-5) to guide development within the County's jurisdiction and extends State law to require an acoustical analysis for all new

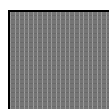
## NOISE

TABLE 4.5-5 CALIFORNIA LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential – Low Density Single-Family, Duplex, Mobile Homes						
Residential – Multiple Family						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Businesses, Commercial and Professional						
Industrial, Manufacturing, Utilities, Agricultural						



**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.



**Normally Unacceptable:**  
New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



**Conditionally Acceptable:**  
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the 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.



**Clearly Unacceptable:**  
New construction or development generally should not be undertaken.

Source: Governor's Office of Planning and Research, General Plan Guidelines, November 2003.



residential developments. Single family dwellings experiencing noise levels of 60 CNEL or greater will require structural design that reduces internal exposure to 45 CNEL.

### *San Mateo County Municipal Code*

#### Exterior Noise Standards

Chapter 4.88 of the San Mateo County municipal code titled Noise Control, is designed to control unnecessary, excessive and annoying noise in the County of San Mateo. Pertinent portions of the municipal code will be included herein.

Section 4.88.330, Exterior Noise Standards states that It is unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property which causes the exterior noise level to exceed the noise level standards as set forth in Table 4.5-6.

**TABLE 4.5-6 EXTERIOR NOISE STANDARDS**

Land Use Category	$L_n$	Daytime 7 AM- 10 PM	Nighttime 10 PM – 7 AM
Residential	L50	55	50
Schools	L25	60	55
Hospitals	L8	65	60
Churches	L2	70	65
Public Libraries	$L_{max}$	75	70

Notes:

1. In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in five (5) dBA increments so as to encompass the background noise level.
2. Each of the noise level standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.
3. If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards in Table 4.5-6:  
 $L_n$  is equal to the sound level exceeded for n percent of 1 hour.  
 $L_{max}$  is the maximum instantaneous sound level measured over any period of time.

#### Interior Noise Standards

Section 4.88.340, Interior Noise Standards states no person shall, at any location within the unincorporated area of the County cause, any source of sound, or create, or allow the creation of, any noise which causes the noise level when measured inside a receiving dwelling unit with windows in their normal seasonal configuration to exceed the following noise level standards as set forth in Table 4.5-7. In other words, no person shall create any noise within a dwelling unit so that the interior noise at any of the following land use types does not exceed the thresholds set in Table 4.5-7.

## NOISE

TABLE 4.5-7 INTERIOR NOISE STANDARDS

Land Use Category	$L_n$	Daytime 7 AM- 10 PM	Nighttime 10 PM – 7 AM
Residential	L50	55	50
Schools	L25	60	55
Hospitals	L8	65	60
Churches	L2	70	65
Public Libraries	$L_{max}$	75	70

Notes:

1. In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in five (5) dBA increments so as to encompass the background noise level.
2. Each of the noise level standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.
3. If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards in Table 4.5-7:  
L8: Shall not exceed limit for more than 5 minutes in any one-hour period.  
L2: Shall not exceed limit for more than 1 minute in any one-hour period.  
 $L_{max}$ : Shall not exceed limit instantaneously.

### Exemptions

Section 4.88.360 of the San Mateo County municipal code lists a number of noise generating activities that shall be exempt from the provisions in Chapter 4.88, Noise Control. Exemptions relevant to the Fire Station Replacement Project are as follows:

1. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.
2. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, 5:00 p.m. and 9:00 a.m. on Saturdays or at any time on Sundays, Thanksgiving and Christmas.

### Vibration Standards

The County of San Mateo does not have regulatory standards for construction or operational vibration sources. For the purposes of this analysis, the Federal Transit Administration (FTA) standards are used. The FTA provides criteria for acceptable levels of groundborne vibration for various types of land uses that are sensitive to vibration. These criteria can be separated into annoyance effects and architectural damage effects due to vibration. The limit for human annoyance for daytime residential receptors is 78 VdB (shown in Table 4.5-3), and the limit for architectural damage to non-engineered timber and masonry buildings is 0.200 in/sec PPV (shown in Table 4.5-4).

### 4.5.1.3 EXISTING CONDITIONS

The proposed project site is located on undeveloped land in San Mateo County about 1-mile northwest of the City of Half Moon Bay. The project site's topography is characterized by a slight downward slope

toward the coast. The major noise sources in the vicinity of the project site are roadway noise from Highway 1 (Cabrillo Highway) and from less busy nearby thoroughfares like Obispo Road, Avenue Alhambra and Coronado Street. This site is also expected to experience aircraft noise from the Half Moon Bay Airport that is located about 1.75 miles northwest of the proposed project site. Another noise source is operational noise from residences in the vicinity including people talking or property maintenance, in addition to noises typical of that of operation of nearby schools, and commercial uses near the project site.

## **Sensitive Receptors**

The proposed project site is surrounded by mostly residential and commercial uses. The most sensitive receptors to the proposed project are the apartments to the north (approximately 115 feet from the center of the proposed project), the single-family homes approximately 175 feet to the west (beyond Avenue Alhambra), the multi-family homes approximately 250 feet to the northwest, the Wilkinson School approximately 450 feet to the southeast (beyond Coronado Street), and El Granada Elementary School is located approximately 500 feet from the project site.

### **4.5.2 STANDARDS OF SIGNIFICANCE**

An Initial Study was prepared for the project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the project would not result in significant environmental impacts per the following significance criteria = and therefore, these criteria are not discussed in this chapter.

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
- For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, and comments provided during the public review process, it was determined that the proposed project could result in a significant noise if it would:

1. Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
2. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

## NOISE

### 4.5.3 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts related to noise.

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<b>NOISE-1</b>	<b>The proposed project would not have the potential to expose people to or generate excessive groundborne vibration or groundborne noise levels.</b>
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CEQA does not specify quantitative thresholds for what is considered “excessive” vibration or groundborne noise. The County of San Mateo also has not established such thresholds. For the purpose of this analysis, the Federal Transit Administration’s (FTA) general vibration assessment methodology was utilized. As such, a significant impact would occur if:

- Implementation of the project would exceed 78 VdB, the criteria for being distinctly perceptible by humans as presented in Table 4.5-3, at off-site sensitive receptors.
- Implementation of the project would result in vibration exceeding the criteria presented in Table 4.5-4 that could cause buildings architectural damage. For instance, for non-engineered timber and masonry buildings the criteria is 0.2 in/sec and for engineered concrete and masonry buildings the criteria is 0.3 in/sec.

#### On-Going Operations Vibration and Noise Impacts

Operation of the project would not generate substantial levels of vibration as there are no notable sources of vibrational energy associated with the project. Thus, operations of the proposed project will not result in significant groundborne vibration and no mitigation measures are needed.

The only notable permanent stationary noise source due to project implementation is an emergency generator located on-site. This generator will be in an enclosed area and would not likely increase noise levels from existing conditions. Further, Section 4.88.360 of the San Mateo County municipal code includes an exemption for any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work. Due to this portion of the municipal code, and the fact that the generator will be in an enclosed area so that noise levels will not increase the existing noise environment at nearby sensitive receptors, noise increases due to ongoing operational activities will be less than significant.

#### Short-Term Construction Vibration Impacts

##### General Construction Vibration (Not Project-Specific)

Construction vibration would vary temporally and geographically depending on the specific location and type of construction activity within the project site. Construction activities will include site preparation work, grading, building construction, paving, and painting. Employment of powerful equipment items like graders, dozers, and rollers may, at times, produce substantial vibration. The project site is currently undeveloped, so no demolition will take place. Site preparation is expected to last approximately 5 days,

grading is expected to last 30 days, construction is expected to last 280 days, and paving and painting are both expected to last approximately 30 days.

The effect on buildings in the vicinity of a construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches levels that can damage structures, but groundborne vibration and groundborne noise can reach perceptible and audible levels in buildings that are very close to the construction site (such as for already-completed structures from previous phases in the project's development). This is especially true for grading activities, including bulldozers that could cause a potential impact depending on their proximity to existing buildings.

As shown in Table 4.5-10, which lists vibration levels for general construction equipment, vibratory rollers have the potential to generate the highest ground vibration levels and is of primary concern in regard to structural damage, particularly when it occurs within 50 feet of structures. Vibration levels generated by rollers or similar activities would vary depending on site-specific conditions, such as soil characteristics, construction methods, and equipment used. Other construction activities, such as caisson drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and the use of rolling stock equipment (tracked vehicles, compactors, etc.) may also potentially generate substantial vibration in the immediate vicinity.

Based on available information, vibration levels during construction would be highest during the site preparation and grading phases. Except for pile driving, maximum vibration levels measured at a distance of 25 feet from an individual piece of typical construction equipment rarely exceed the levels where they become strongly perceptible (0.1 PPV in inches per second) or the thresholds for architectural damage at typical building structures (i.e., 0.2 to 0.5 PPV in inches per second). Additionally, it is important to note that groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers.

In general, construction would be localized, would occur intermittently and variably, and would only occur for relatively short periods of time. Vibration-intense activities, such as pile driving, rock blasting, and the use of vibratory rollers, occurring in proximity of existing sensitive receptors such as residences and hotels would have the potential to cause annoyance to persons in these buildings or to cause architectural damage in nearby buildings. As shown in Table 4.5-8, typical construction equipment such as bulldozers, jackhammers, loaded trucks do not generate vibration levels above the applicable thresholds for vibration annoyance (0.1 in/sec) and damage (0.2 in/sec). However, pile driving, rock blasting, and vibratory rollers would have the potential to generate vibration levels above the thresholds of annoyance and damage to existing and future buildings.

### Vibration Annoyance

Vibration is typically not perceptible in outdoor environments, but it is sensed when objects inside structures generate noise, such as rattling windows or picture frames. Therefore, impacts are evaluated in terms of indoor receptors (FTA 2006). The nearest sensitive receptor structures subject to annoyance from construction activities are the surrounding houses on Avenue Alhambra, and Wilkinson School to the SE beyond Coronado Street.

## NOISE

**TABLE 4.5-8 GROUNDBORNE VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT**

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate PPV Velocity at 25 Feet (inch/sec)
Vibratory Rollers	94	0.210
Large Bulldozer	87	0.089
Caisson Drilling	87	0.089
Jackhammer	79	0.035
Small Bulldozer	58	0.003
Loaded Trucks	86	0.076

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

Levels of vibration produced by construction equipment are based on the FTA's significance threshold for vibration annoyance of 78 VdB for barely perceptible levels of vibration during the daytime (under the premise that construction would be limited to daytime hours to comply with the City's Municipal Code). Table 4.5-11 shows the potential vibration levels (VdB) that can be generated by heavy construction equipment at receptors 115 to 450 feet away from the center of construction activities.

Since construction equipment will move around the construction site, the center of construction activities was used as the spatially averaged distance for vibration annoyance. For the purpose of this analysis, vibration levels from graders, backhoes, and tractors would be similar to the levels presented for bulldozers in Table 4.5-8.

As shown in Table 4.5-9, construction activity at the nearest residential areas would not exceed the 78 VdB threshold for vibration annoyance. Therefore, impacts due to vibration annoyance would be less than significant.

### Architectural Damage

In addition to vibration-induced annoyance, project-related construction vibration was evaluated for its potential to cause structural damage based on FTA's architectural damage criteria. The FTA threshold of 0.2 PPV inch per second is the point at which there is a risk of architectural damage to normal houses with plastered walls and ceilings. Since the potential architectural damage to structures is directly related to the amount of vibrational energy at the source being transmitted through the ground to the receptor structure, this assessment uses the maximum vibration velocity at a specific distance to the receptor (rather than the average vibration level, in VdB, on an area-wide basis; as with the vibration annoyance assessment above).

Table 4.5-10 shows the potential vibration levels (in PPV in inches/sec) that can be generated by heavy construction equipment at the nearest receptors, located as near as 65 feet away from the proposed project site.

**TABLE 4.5-9 CONSTRUCTION EQUIPMENT VIBRATION LEVELS – POTENTIAL FOR ANNOYANCE**

Equipment	Average Vibration Levels, VdB at Distance (Feet)			
	Apartment Building to North (115 Feet)	Single-Family Homes to East (175 Feet)	Multi-Family Homes to NW (250 Feet)	Wilkinson School to SE (450 Feet)
Vibratory Roller	74	68	64	56
Caisson Drill	67	62	57	49
Large bulldozer	67	62	57	49
Small bulldozer	38	33	28	20
Jackhammer	59	54	49	41
Loaded trucks	66	61	56	48

Notes: Threshold for vibration annoyance = 78 VdB. Receptor locations shown in Figure 4.5-1.

Source: PlaceWorks, 2016.

**TABLE 4.5-10 CONSTRUCTION EQUIPMENT VIBRATION LEVELS – POTENTIAL FOR ARCHITECTURAL DAMAGE**

Equipment	Maximum Vibration Velocity (PPV), inches/sec at Distance (Feet)			
	Apartment Building to North (65 Feet)	Single-Family Homes to East (100 Feet)	Multi-Family Homes to NW (125 Feet)	Wilkinson School to SE (225 Feet)
Vibratory Roller	0.05	0.026	0.019	0.008
Caisson Drill	0.021	0.011	0.008	0.003
Large bulldozer	0.021	0.011	0.008	0.003
Small bulldozer	0.001	<0.001	<0.001	<0.001
Jackhammer	0.008	0.004	0.003	0.001
Loaded trucks	0.018	0.010	0.007	0.003

Notes: Threshold for vibration annoyance = 78 VdB. Receptor locations shown in Figure 4.5-1.

Source: PlaceWorks, 2016.

Typically, only construction equipment generating extremely high levels of vibration, such as pile drivers, have the potential to result in vibration-induced structural damage. No pile driving is expected to be required during construction. Because vibration dissipates quickly with distance, and because construction would mostly require the use of small earthmoving equipment that do not generate considerable amounts of vibration, the maximum construction-related vibration level would be approximately 0.01 PPV in/sec, which is well below the 0.2 PPV in/sec criteria for vibration-induced architectural damage at the nearby structures. Further, all construction activities will be within the allowable hours of construction per San Mateo County municipal code. Therefore, architectural-damage vibration impacts from construction would be less than significant.

**Significance Without Mitigation:** Less than significant.

## NOISE

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<b>NOISE-2</b>	<b>Construction activities associated with buildout of the proposed project would not result in substantial temporary or periodic increases in ambient noise levels in the vicinity of the project site above existing levels.</b>
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Implementation of the project would have a significant impact if it would result in a substantial temporary or periodic increase in ambient noise levels in the project site or vicinity above levels existing without implementation of the project. Such temporary or periodic increases are typically associated with construction activities, which would last for approximately 16 months for the project.

The County of San Mateo recognized that the control of construction noise is difficult and provides an exemption for this type of noise when the work is performed within the hours specified within the noise ordinance (i.e., Weekdays from 7:00 a.m. to 6:00 p.m., Saturdays from 9:00 a.m. to 5:00 p.m.; not exempt on Sundays or holidays). The majority of noise generated from a construction site is due to stationary-source noise from use of construction equipment. Existing uses surrounding the project site would be exposed to construction noise.

Temporary or periodic increases in ambient noise levels under implementation of the project would result from construction activities associated with site preparation, grading, and construction. Table 4.5-11 below shows typical noise levels generated by commonly used pieces of construction equipment. Typical equipment used for site preparation or grading of individual projects could include tractors, backhoes, graders, dozers, scrapers, and trucks.

Equipment expected to be used for the construction phase of this project includes forklifts, generators, tractors/backhoes, and welders. As shown, construction equipment generates high levels of noise with levels ranging from 55-77 dBA  $L_{eq}$ . Noise from sources such as construction equipment dissipates rapidly with distance at a rate of 6 dBA per doubling distance. The loudest activities generally occur at site preparation and grading where heavy earthmoving equipment is employed. Site preparation and grading occurring in proximity of existing sensitive receptors, such as residential properties, would have the potential to cause high levels of noise at nearby uses. The project site is located in a residential neighborhood, and is surrounded by single-family homes, multi-family homes, an apartment building, and a School. The nearest homes range from 115 to 250 feet from the center of construction activities, the Wilkinson School is about 450 feet southeast of the project site, and the El Granada Elementary School about 500 feet southeast, as mentioned above. Since construction equipment will move around the construction site, the center of construction activities was used as the spatially averaged distance for construction noise analysis.

The construction of the proposed project will require the use of construction vehicles around the project site. Since the Average Daily Trips (ADT) from these construction vehicles is marginal compared to the ADT along Avenue Alhambra or Highway-1, any noise increase due to temporary traffic increases will be less than 0.5 dB.

Construction noise impacts typically occur when construction activities take place during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), when construction activities occur immediately adjacent to noise sensitive land uses, or when construction durations last over extended periods of time. Although construction activities may briefly or occasionally serve to elevate ambient



**NOISE****TABLE 4.5-11 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS**

Construction Equipment	Typical Noise Level (dBA) at 50 Feet	Construction Equipment	Typical Noise Level (dBA) at 50 Feet
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Insertter	85
Loader	85	Truck	88
Paver	89		

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

noise levels at adjoining sensitive receptors, these impacts would generally be limited to the temporary site preparation, and grading periods. Construction at each project feature at each site would be localized and would occur intermittently for varying periods of time. Noise levels expected to be experienced by nearby sensitive receptors during construction activities are presented below in Table 4.5-12.

Project construction would involve grading of the existing land, and construction of a new fire station building and parking areas. The entire construction period is estimated to be approximately 15 months. The noisiest portions, however (i.e., site preparation, and grading phases), are expected to take approximately 35 days. Construction vehicles may minimally increase the Average Daily Traffic in the vicinity of the proposed project, but are not expected to result in a notable noise level increase. Construction activities would increase noise levels on and near the proposed area of improvements above existing levels, in the range of 55-77 dBA  $L_{eq}$ . Nonetheless, since all construction will occur during the County of San Mateo's allowable hours of construction, any impacts on off-campus receivers will be less than significant and no mitigation measures are necessary.

**Significance Without Mitigation:** Less than significant.

## NOISE

TABLE 4.5-12 AVERAGE CONSTRUCTION NOISE LEVELS

Construction Phase	Energy-Average ( $L_{eq}$ ) Construction Noise Levels, dBA at Sensitive Receptors (Distances to Center of Construction)			
	Apartment Building to North (115 Feet)	Single-Family Homes to East (175 Feet)	Multi-Family Homes to NW (250 Feet)	Wilkinson School to SE (450 Feet)
Site Preparation	77	73	70	65
Grading	78	75	72	66
Construction	74	70	67	62
Paving	74	70	67	62
Painting	67	63	60	55

Notes: Threshold for vibration annoyance = 78 VdB. Receptor locations shown in Figure 4.5-1.  
Source: PlaceWorks, 2016.

### 4.5.4 CUMULATIVE IMPACTS

**NOISE-3**      **This proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less than significant impacts with respect to noise.**

Most of the potential for noise impacts are due to temporary noise and vibration generated from construction activities. For non-traffic sources, there are no nearby off-site construction projects planned that would occur concurrent with the project in close proximity that, combined with project construction, would result in substantial impacts greater than those discussed above in Impact NOISE-2. Also, because there are no vacant, developable lots in the immediate vicinity of the project site, (due to the presence of riparian corridors and the restrictive zoning of these lots) there are no reasonably foreseeable projects proposed. Additionally, while it is unknown at this time what type of development would occur on the Proposed Parcel A, uses allowed within that zoning designation include automobile service stations, bakeries, banks, bars, barber shops, confectionery stores, gift shops, restaurants, and cafes. However, these allowed uses, in addition to other development throughout the County would be subject to the same regulations and reviews by the County to ensure that all development conforms to applicable regulations related to noise. Further, operation of the new fire station would not contribute to a cumulatively considerable noise impact given that the existing fire station is located approximately 600 feet from the proposed project site and because existing operations are not expected to increase with the new fire station. Overall, cumulative noise impacts with respect to future, nearby projects would be considered *less than significant* with respect to cumulative noise impacts.

**Significance Without Mitigation:** Less than significant.

## TRANSPORTATION AND CIRCULATION

### 4.6 TRANSPORTATION AND CIRCULATION

This chapter describes the regulatory framework and existing conditions in the vicinity of the project site related to transportation and circulation, and the potential impacts of the proposed project on transportation and circulation.

#### 4.6.1 ENVIRONMENTAL SETTING

##### 4.6.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations pertaining to transportation and circulation in El Granada.

#### State Regulations

Traffic congestion is typically described by the intersection level of service criteria, which ranges from level of service (LOS) A to LOS F, with LOS A representing free-flow conditions with little delay and LOS F representing over-saturated traffic flow. It is important to note that Senate Bill (SB) 743 will alter how transportation and traffic impacts are analyzed under State CEQA Guidelines. In general, SB 743 requires that the CEQA Guidelines be amended to provide an alternative to using level of service standards for evaluation transportation impacts. While the State CEQA Guidelines will be amended to incorporate the provisions of SB 743, this draft EIR was prepared based on existing 2014 CEQA Guidelines, and therefore, relies on the existing standard of using level of service to determine potential transportation impacts.

#### *California Department of Transportation*

The California Department of Transportation (Caltrans) is responsible for planning, design, construction and maintenance of all interstate freeways and State Routes. The department sets design standards that are often used by local governments. Cabrillo Highway (Highway 1), located in the project study area, is under Caltrans jurisdiction. Caltrans requirements are described in their Guide for Preparation of Traffic Impact Studies<sup>1</sup>, which covers the information needed for Caltrans to review the impacts to State highway facilities; including freeway segments, on- and off-ramps, and signalized intersections. For intersections under the jurisdiction of Caltrans, the significant impact criteria are based on the “Caltrans Guide for the Preparation of Traffic Impact Studies.” Caltrans maintains a target level of service at the transition between LOS C and LOS D using the Highway Capacity Manual (HCM) methodology.

Further, Caltrans is currently preparing a Highway 1 Corridor Study that is anticipated for completion in late 2017. The corridor study will provide a vision of what Highway 1 in San Mateo County should look like over a 25-year planning horizon and will help identify improvement needs for the highway corridor, including potential means to address coastal erosion, such as realignment of certain segments of Highway 1.

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<sup>1</sup> California Department of Transportation, 2002. *Guide for the preparation of Traffic Impact Studies*, December.

## TRANSPORTATION AND CIRCULATION

### Local Regulations

The project site is in El Granada, an unincorporated community in the northern coastal area of San Mateo County.

#### *San Mateo County General Plan*

The San Mateo County General Plan, adopted on November 18, 1986, serves as a guide for land development and conservation; it sets forth goals and policies for the future development of the County in part by directing preservation and enhancement of aesthetic resources. Chapter 12, Transportation calls for a transportation system that is safe, efficient and convenient movement of people and goods in and through San Mateo County. Table 4.6-1 includes policies relevant to the project in regards to transportation in San Mateo County.

#### *San Mateo County Congestion Management Plan*

The City/County Associations of Governments of San Mateo County's (C/CAG) Congestion Management Program (CMP) requires local jurisdictions to notify C/CAG at the beginning of the CEQA process of all development applications or land use policy changes that are expected to generate 100 or more net peak hour trips on the CMP network. The CMP requires each jurisdiction to identify existing and future transportation facilities that would operate below an acceptable service level, and to provide mitigation where future growth would degrade that service level. According to State legislation which requires urbanized counties to create CMPs to qualify for a share of gas tax revenues, all CMPs must include the following elements: system definition and traffic level of service standard, trip reduction and transportation demand management, land use impact analysis, and capital improvement. San Mateo County does not require the preparation of traffic impact analyses for land use projects that generate less than 500 trips per day or 100 peak hour trips at an intersection.<sup>2</sup> As discussed in the Initial Study, the proposed project would generate fewer than 20 peak hour trips; therefore, the proposed project would not result in substantial increases in congestion and delays in the roadway system. For the Highway 1 segment in El Granada, the CMP level of service standard is LOS E.

#### *San Mateo County Comprehensive Bicycle and Pedestrian Plan*

C/CAG with support from the San Mateo County Transportation Authority (SMCTA) has developed a comprehensive bicycle and pedestrian plan (CBPP) to address planning, design, funding, and implementation of bicycle and pedestrian projects of countywide significance. The plan includes several goals to improve non-motorized travel in the County. The goals that are relevant to this project are discussed below under the impact analysis.

### 4.6.1.2 EXISTING CONDITIONS

Figure 3-2 of Chapter 3, Project Description, shows the project site location and the major roads in the vicinity of the site. Regional access to the project site is provided via Highway 1, which is a 2-lane undivided roadway with limited access to El Granada via Coronado Street and Capistrano Road. Obispo Road, Avenue Alhambra, and Coronado Street are 2-lane undivided roads that provide direct access to

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<sup>2</sup> County of San Mateo, 2013. Traffic Impact Study Requirements, September, page 2.

## TRANSPORTATION AND CIRCULATION

**TABLE 4.6-1 GENERAL PLAN GOALS AND POLICIES RELEVANT TO TRANSPORTATION**

Goal / Policy Number	Goal / Policy
Policy 12.21	<p>Local Circulation Policies –</p> <p>In unincorporated communities, plan for providing:</p> <ul style="list-style-type: none"> <li>a. maximum freedom of movement and adequate access to various land uses;</li> <li>b. Improved streets, sidewalks, and bikeways in developed areas;</li> <li>c. Minimal through traffic in residential areas;</li> <li>d. Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks;</li> <li>e. Access for emergency vehicles;</li> <li>f. Bicycle and pedestrian travel;</li> <li>g. Access by physically handicapped person to public buildings, shopping areas, hospitals, offices, and schools;</li> <li>h. Routes and turnouts for public transit;</li> <li>i. Parking areas for ridesharing;</li> <li>j. Coordination of transportation improvement with adjacent jurisdictions;</li> </ul>
Policy 12.44	<p>Bicycle Trails in Rural Areas –</p> <p>Support the development of bicycle trails in rural and Coastal areas.</p>
Policy 12.45	<p>Bicycle Storage Facilities –</p> <p>Promote the provision of bicycle lockers and other storage facilities at transit stops, schools, shopping areas and other activity centers.</p>
Policy 12.47	<p>Facilities for Bicyclists –</p> <p>Encourage large employers to provide shower and locker facilities for their employees who bike to work as part of a commute alternative program.</p>
Policy 12.48	<p>Pedestrian Paths –</p> <p>Encourage the provision of safe and adequate pedestrian paths in new development connecting to activity centers, schools, transit stops, and shopping centers.</p>

Source: San Mateo County General Plan, adopted November 18, 1986.

residential and commercial land uses. Avenue Alhambra also serves as a cross-town traffic connector that runs parallel to Highway 1.

Two schools are located in proximity of the project site to the east: the El Granada Elementary School on Avenue Alhambra and, and the Wilkinson School on Santiago Avenue, as shown on Figure 4.6-1.

- The Wilkinson School is a K-8 private school located to the east of the project site across Coronado Street at 750 Avenue Alhambra. The Wilkinson School is in session Monday thru Friday from 8:15 a.m. to 3:15 a.m. The main entrance to the school is from Avenue Alhambra, its access driveway is located approximately 350 feet east of the project site and curbside street parking is allowed along Avenue Alhambra on both sides of the street.
- The El Granada Elementary School is a public school located at Santiago Avenue, which is a continuation of Avenue Alhambra to the east. The school is in session Monday thru Friday starting at 8:05 a.m. Student dismissal is staggered, occurring at 11:35 a.m., 12:30 p.m., 1:15 p.m., 2:05 p.m., and 2:49 p.m. depending on the day of the week and grade. The access driveway is located approximately 500 feet to the east on Santiago Avenue.

Pedestrian activity and school traffic as it related to safety and circulation of emergency vehicles are discussed in TRANS-1 and TRANS-2 below.



## TRANSPORTATION AND CIRCULATION



Source: PlaceWorks, 2016. Google Earth Pro., 2016.



Figure 4.6-1  
Existing Project Area



## TRANSPORTATION AND CIRCULATION

### 4.6.1 STANDARDS OF SIGNIFICANCE

An Initial Study was prepared for the project (see Appendix A of this Draft EIR). Based on the analysis contained in the Initial Study it was determined that development of the project would not result in significant environmental impacts per the following significance criteria and therefore, are not discussed in this chapter.

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Result in inadequate emergency access.

Based on the Initial Study, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines, it was determined that the project could result in a significant transportation and traffic impact if it would:

1. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
2. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

### 4.6.2 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to transportation and circulation.

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<b>TRANS-1</b>	<b>The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</b>
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The following discussion addresses access driveway sight distance, reviews traffic accident data in the vicinity of the site, and potential conflicts with the nearby school:

#### Access Driveway

At project driveways, a substantially clear line of sight will be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. The proposed project would construct two new driveways on Obispo Road, designed as a “pull through” facility where firefighting vehicles would

## TRANSPORTATION AND CIRCULATION

exit from the west driveway and enter from the east driveway. Sight distance is the continuous length of roadway visible to the user. A preliminary sight distance evaluation prepared for the access driveways to Obispo Road was based on criteria and procedures from the Caltrans in the State's Highway Design Manual (HDM). Table 201.1 "Sight Distance Standards" of the HDM relates minimum sight distance values to a range of design speeds. For this analysis, a design speed of an arterial roadway of 35 mph has been utilized. Based on the design speed of 35 mph, the minimum sight distance from the access driveway on Obispo Road would be 250 feet. Sufficient sight distance would be provided, since the road is relatively straight and maintains a constant grade for at least 400 feet in each direction. There is adequate sight distance at the project access driveways on Obispo Road, no obstructions to the line of sight are present that would cause an unsafe condition.

### Accident History, School Traffic and Pedestrian Activity

According to the Statewide Integrated Traffic Records System (SWITRS), which is a database that gathers collision data, all recorded collisions and accidents in the vicinity of the project site have occurred on Highway 1. In the period from 2006 to 2015, 7 vehicle collisions, 1 motorcycle collision, and 1 pedestrian were injured on Highway 1 within 500 feet with the intersection with Coronado Street. SWITRS does not show any accident data on the local streets in the vicinity of the site.

The Wilkinson School and the El Granada Elementary School are located to the east of the project site on Avenue Granada and Santiago Avenue, respectively. School marked yellow crosswalks are located on Avenue Alhambra east of the site with pavement markings to warn motorists of the crosswalk. Additional school crosswalks are located to the east of the site on Avenue Alhambra at Palma Street and at Francisco Street. A paved sidewalk is located on the north side of Avenue Alhambra to the east and west of the site, and a paved path is located on the coastal side of Highway 1. With the exception of the sidewalk described above, pedestrians must walk on the roads or roadway shoulders. Fire vehicles from Fire Station 41 already serve the vicinity of the project site including the areas near the Wilkinson School and the El Granada Elementary School and utilize Coronado Street, Obispo Road, Avenue Alhambra and Santiago Avenue. It is anticipated that most fire vehicles would use Coronado Street as the quickest way to serve the area during a dispatch given its close proximity to the project site. Because the existing fire station already serves the study area, there would be no increase in firefighting vehicular activity in the vicinity of the school and near the intersections of Coronado Street at Obispo Road and at Highway 1. Due to the location of two schools on Avenue Alhambra and Santiago Avenue, periods of congestion may occur in the vicinity of the schools during student drop-off and pick-up periods, these periods normally last for approximately 15 minutes in the morning and 15 minutes in the afternoon. However, traffic congestion from the school does not affect Obispo Street and there are no queues on Obispo Road near the project access driveways. In addition, the circulation network provides alternatives to access the locations east of the schools via Avenue Cabrillo in case excessive congestion occurs during these periods.

Due to the low speeds of traffic on local streets, the presence of paved sidewalks and marked crosswalks, and due to the fact that most fire vehicles would access the site via Coronado Street and on Obispo Road west of the schools, it is anticipated that the project would not substantially increase hazards and therefore would not result in an unsafe condition for vehicle drivers, bicyclists or pedestrians.

Consequently, impacts related to hazards due to a design feature or due to the operation of firefighting vehicles in the area would be *less than significant*.



## TRANSPORTATION AND CIRCULATION

Significance Without Mitigation: Less than significant.

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<b>TRANS-2</b>	<b>The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.</b>
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As discussed above, the CBPP includes goals and policies to promote non-motorized travel in the County:

- Goal 1: A comprehensive countywide system of facilities for bicyclists and pedestrians
- Goal 2: More people riding and walking for transportation and recreation
- Goal 3: Improved safety for bicycles and pedestrians
- Goal 4: Complete streets and routine accommodation of bicyclists and pedestrians
- Goal 5: Strong local support for non-motorized transportation.

SamTrans serves the vicinity of the project site with paratransit service, and route 17 and 294 buses that run along Avenue Alhambra. The nearest bus stop is located north of the project site approximately 100 feet from the northwest corner of the intersection of Coronado Street at Avenue Alhambra.

Coronado Street is designated as a Class III bike route where cyclists and automobiles share the roadway without a dedicated right-of-way for the bicyclist, signage is provided to establish the bike route.

A new sidewalk may be constructed along the project site boundary on the north side of Obispo Road. The proposed project would not displace any existing sidewalk or bus stop or interfere with a bicycle lane, therefore it would not conflict with Goals 1, 2, 4, and 5.

Further, the San Mateo County General Plan identifies several policies, as listed above in Table 4.6-1, which generally encourage for the safe movement of pedestrians and bicyclists throughout the County. For example, Policy 12.21(C) calls for minimal through traffic in residential areas. Because the project proposes ingress and egress along Obispo Road, it would not conflict with this policy given that the residential areas are located along Avenue Alhambra and Avenue Portola, which would not be in the direct path of the fire trucks during calls for service unless responding to a call in that residential neighborhood. Further, the project may construct a new sidewalk fronting the property which will provide safe access for pedestrians and bicyclists in an area that currently does not have formal sidewalks. Therefore, the proposed project would not conflict with the policies of the County's General Plan that area intended to facilitate safe access of pedestrians and bicyclists. Lastly, as discussed in TRANS-1 above, the project would not implement an unsafe design feature or cause a hazard due to the operation of firefighting vehicles in the area and therefore would not conflict with Goal 3. As such, impacts related to conflicting with policies regarding transit, bicycle, or pedestrian facilities would be *less than significant*.

Significance Without Mitigation: Less than significant.

### 4.6.3 CUMULATIVE IMPACTS

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<b>TRANS-3</b>	<b>The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to transportation and traffic.</b>
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## TRANSPORTATION AND CIRCULATION

As discussed in the Initial Study, the proposed project would generate fewer than 20 peak hour trips; therefore, the proposed project would not result in substantial increases in congestion and delays in the roadway system. Although the segment of Highway 1 segment in El Granada is at a CMP level of service standard is LOS E, the number of peak hour trips attributed to the proposed project is inconsequential and this standard would not be degraded as a result of the project. Therefore, the direct impacts of the project on traffic operations would be *less than significant*.

Table 4-1 in Chapter 4, Environmental Analysis, does list several projects that are reasonably foreseeable in the immediate vicinity of the project site. Although there is a vacant parcel between Highway 1 and Obispo Road adjacent to the project site, the presence of riparian corridors and restrictive zoning, there's no reasonably foreseeable development on that parcel (due to the presence of riparian corridors and the restrictive zoning of these lots) that is currently owned by Granada Community Services District. While the proposed project would add very few trips to the system, there are no major projects foreseen in the area that would generate a substantial number of trips to the circulation system per the list of pending projects supplied by San Mateo County Planning Department and contained in section. Although there are some multi-family and small commercial developments in the general vicinity of the project site, most of the projects are single-family residential units that would not result in significant increases to the number of vehicle trips. Lastly, Caltrans is currently preparing a Highway 1 Corridor Study that is anticipated for completion in late 2017. The corridor study will provide a vision of what Highway 1 in San Mateo County should look like over a 25-year planning horizon and will help identify improvement needs for the highway corridor, including potential means to address coastal erosion, such as realignment of certain segments of Highway 1. However, Caltrans has indicated the they do not have any plans at this time to relocate or realign Highway 1 within or around the community of El Granada at this time.<sup>3</sup> Additionally, while it is unknown at this time what type of development would occur on the Proposed Parcel A, uses allowed within that zoning designation include automobile service stations, bakeries, banks, bars, barber shops, confectionery stores, gift shops, restaurants, and cafes. However, these allowed uses, in addition to other development throughout the County would be subject to the same regulations and reviews by the County to ensure that all development conforms to applicable regulations related to transportation and circulation. Therefore, the proposed project would not conflict or otherwise contribute to cumulative impact with regards to the Highway 1 Corridor Study. Therefore, the project's contribution to cumulative transportation and traffic impacts would be *less than significant*.

Caltrans is performing a study of alternative alignments of Highway in the vicinity of Surfer's Beach, El Granada to address sea rise issues. The study is due to be completed at the end of 2017 and has unknown implications to this area due to permitting process and needed funding of an major highway improvements.

**Significance Without Mitigation:** Less than significant.

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<sup>3</sup> California Department of Transportation, Letter to Coastside Fire Protection District, January 5, 2016.

## 5. Alternatives to the Proposed Project

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The following discussion is intended to inform the public and decision makers of feasible alternatives to the proposed project that would avoid or substantially lessen any significant effects.

California Environmental Quality Act (CEQA) Guidelines set forth the intent and extent of alternatives analysis to be provided in an EIR. Section 15126.6(a) of the CEQA Guidelines states that:

*An EIR shall describe a range of reasonable alternatives to the project, or 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 comparative 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 decision making 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 its 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.*

### 5.1 PURPOSE

The alternatives evaluated in this Draft EIR were developed consistent with Section 15126.6(b) of the CEQA Guidelines, which states that:

*Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), 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 the project objectives, or would be more costly.*

### 5.2 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 proposed project includes the construction and operation of a new Fire Station 41 (El Granada) that includes a new 12,425-square-foot, single-story, three-bay fire station on a 2.7-acre site. The project will seek to accomplish the following objectives:

- Replace the aging 50-plus year-old existing Fire Station 41 located at 531 Obispo Road, El Granada.
- Provide a new fire station that would be able to provide emergency services to the public after a disaster, in compliance with the Essential Services Buildings Seismic Safety Act of 1986 so that the fire station can resist earthquakes, gravity, and winds

## ALTERNATIVES TO THE PROPOSED PROJECT

- Provide a new fire station that is adequately sized to house a 34-foot Fire Engine, a 42-foot Truck, and a 39-foot Heavy Rescue Vehicle in a drive through format
- Provide a new fire station that allows the Coastside Fire Protection District to appropriately, provide for current and future fire and public safety service demands for the next 50 years
- Provide a new fire station within the central District area currently served by existing Fire Station 41
- Maintain and if possible improve current response times within the central District area
- Avoid condemnation of private land to construct the new fire station
- Minimize interference with ocean and hillside views

## 5.3 SELECTION OF A REASONABLE RANGE OF ALTERNATIVES

Section 15126.6(c) of the State 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 may be included in the administrative record. Among the factors that may be used to eliminate 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.*

### 5.3.1 ALTERNATIVES CONSIDERED AND REJECTED AS BEING INFEASIBLE

As described above, Section 15126.6(c) of the State 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. Section 15126.6(c) provides that among the factors that may be used to eliminate 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. The following is a discussion of alternatives that were considered and rejected, along with the reasons they were not included in the analysis.

- **Existing Site Retrofit Alternative:** Redeveloping and updating the existing fire station at its current location was considered and rejected as being infeasible for the proposed project given the total parcel size of just 12,455 square feet in area. Among the objectives of the proposed project is to replace the existing fire station to increase its size to accommodate modern equipment in order to provide current and future services. Given the small size of the existing fire station and its parcel, it is infeasible to construct a new or updated fire station that would be able to adequately house the equipment necessary to provide fire protection services. For example, in order to meet the increased demands for fire protection service, the fire station will require larger fire apparatus, such as a 34-foot Fire Engine, a 42-foot Truck, and a 39-foot Heavy Rescue Vehicle, which could not be accommodated

## ALTERNATIVES TO THE PROPOSED PROJECT

at the existing fire station due to its small parcel size of 12,455 square feet. Given the size of this equipment and the aging infrastructure as an approximately 50-year old structure, the existing fire station is no longer adequate to serve as a fire station in order to maintain ratios for service calls. Additionally, because the parcel of the existing station is small and surrounded by other residential and commercial development, the existing station would not be able to be expanded to adequately house the necessary fire apparatus. For example, the existing fire station site parcel is not large enough to accommodate a pull-through design and trucks would have to continue backing into the garage, which poses greater safety hazards to pedestrians. Even if the site and parcel were large enough to build a fire station meeting the project objectives, given the close proximity to adjacent development and the overall location of the existing site, a retrofit at this location would require constructing a taller structure which could impact views of the Pacific Ocean which conflicts with another one of the project objectives. Therefore, this alternative was considered infeasible and was not further analyzed in this chapter.

- **Parcel “A” Site Plan Alternative:** Under the Parcel “A” Alternative, a fire station would be constructed on the smaller 0.31-acre (13,575 square feet) portion of the project site (Parcel A) at the corner of Obispo Road and Avenue Portola. Due to the size of this parcel, that is only slightly larger than the existing station parcel, a fire station cannot be accommodated at this location given that there is not sufficient width to be able to accommodate the three bays necessary to house the fire equipment needed to provide sufficient fire protection services as demand increases. In addition, because of the closer proximity to the riparian habitat, which would require a minimum 50-foot setback, the small parcel size would be further reduced in order to comply with that minimum setback requirement, thereby, further constraining the parcel size. Further, given the constrained size of Parcel A and the riparian setback requirement, this parcel would not allow for pull-through access of the fire trucks. As such, fire trucks would be required to back into the garage which could pose a greater risk to the community and the apparatus given the proximity to the only Post Office facility in El Granada. Additionally, backing up into the garage could result in greater impacts to traffic and circulation given that traffic would need to stop to allow time for fire vehicles to safely back up at more congested corner. In addition, areas for stormwater retention basins would also be required for any development on this site, further limiting the developable area of the parcel. For those reasons, this alternative was considered infeasible and was not further analyzed in this chapter.

### 5.3.2 ALTERNATIVES ANALYSIS

In accordance with the CEQA Guidelines, three project alternatives and the comparative merits of the alternatives are discussed below. As previously stated, the alternatives were selected because of their potential to reduce the significant-but-mitigatable impacts of the proposed project related to air quality, biological resources, and hydrology and water quality.

The alternatives to be analyzed in comparison to the proposed project include:

- **No Project Alternative:** Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, under the No Project Alternative, the proposed project site would remain in its existing condition.
- **Relocated Site Alternative:** Under the Relocated Site Alternative, the project components would remain the same as described in Chapter 3, Project Description; however, the project would be constructed at a site located at the corner of Capistrano Road and Highway 1 on the west side of



## ALTERNATIVES TO THE PROPOSED PROJECT



- ▭ **Proposed Project Site**
- ▭ **Alternative Site**

Figure 5-1  
Relocation Site Alternative Location

## ALTERNATIVES TO THE PROPOSED PROJECT

Highway 1 adjacent to Harbor Village, as shown below on Figure 5-1. According to the San Mateo County General Plan, this site has a land use designation of Coastside Commercial Recreation and a Zoning Designation Coastside Commercial Recreation District/Design Review/Coastal Development (CCR/DR/CD). In general, these designations are primarily reserved for uses that meet the service and recreational needs of coastsiders, boat users, and residents seeking coastal recreation. As such, adjacent land uses to this site include commercial uses, such as hotels, a surf shop, cafes, and restaurants. Further, this site is not within a tsunami inundation area.<sup>1</sup> It is important to note that the Coastsiders Fire Protection District (CFPD) does not currently own this site; however, this location is a vacant lot and is a sufficient size parcel to accommodate the project components as proposed.

- **Modified Site Plan Alternative:** As explained in Chapter 4.4, Hydrology and Water Quality, of this Draft EIR, the project site is not located within a Coastal High Hazard Area as defined in County Zoning Ordinance Section 6824.2, and therefore is not subject to the design standards for coastal high hazards areas outlined in LCP Section 6825.3. Nonetheless, the Modified Site Plan Alternative has been designed in response to a request from the California Coastal Commission that the applicant “examine project alternatives that include ... designing the proposed structure consistent with the design standards for coastal high hazards areas outlined in LCP Section 6825.3” (see letter from California Coastal Commission dated January 16, 2016). Under the Modified Site Plan Alternative, the site plan and design would be modified to comply with the regulations set forth in County Zoning Ordinance Section 6825.3 which, in pertinent part, require development in Coastal High Hazard Areas to be in compliance with the Standards for Coastal High Hazard Areas in Section 8133 of the San Mateo County Ordinance Code, Building Regulations. These standards require “[t]he bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) [to be] elevated to or above the base flood level. Under this alternative, the overall components of the proposed project would be similar as proposed; however, to comply with the requirements of Zoning Ordinance Section 6825.3 and Building Regulations Section 8133, the proposed project site would be elevated to at-grade with Avenue Alhambra, as shown on Figure 5-2. Under this alternative, a 22-foot retaining wall would be constructed along Obispo Road and backfilled with soil and other material to elevate the site and protect it from a tsunami event. As a result of this alternative, access to and from the project site would be relocated from Obispo Road to Avenue Alhambra. As further explained below, under this alternative, the same mitigation measures identified for the project would be implemented.

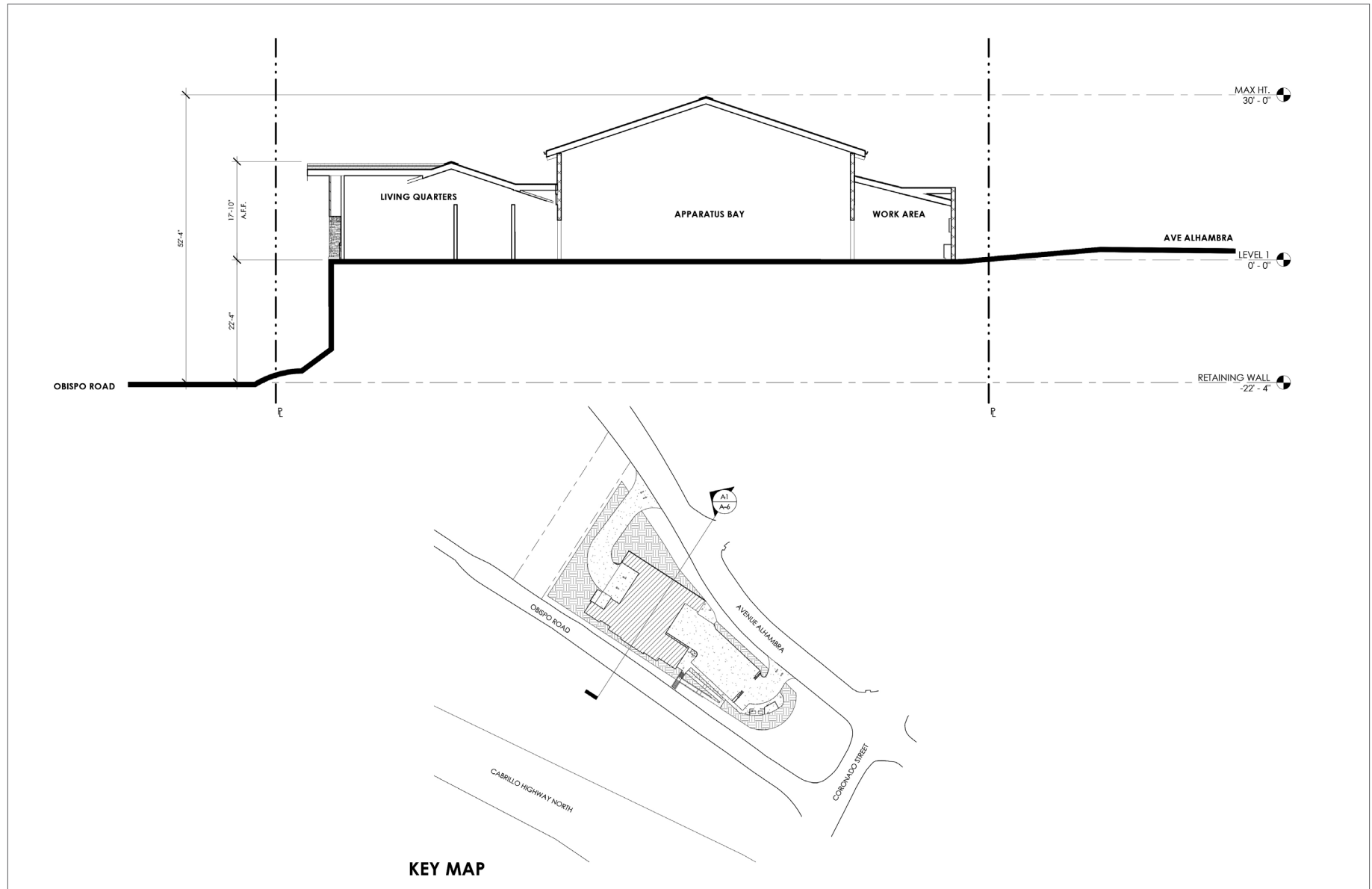
## 5.4 ALTERNATIVES COMPARISON

Table 5-1 presents a comparative summary of alternatives considered in this analysis. Each alternative is analyzed against the impact factors considered for the proposed project, according to whether it would have a mitigating or adverse effect. The basis for the determination was presented in Table 5-1 is further discussed in the next section of this chapter.

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<sup>1</sup> California Emergency Management Agency, Tsunami Inundation Map for Emergency Planning Montara Mountain Quadrangle, County of San Mateo, June 15, 2009.

## ALTERNATIVES



Source: Jeff Katz Architecture, 2016.

Figure 5-2  
Modified Site Plan Alternative



## ALTERNATIVES TO THE PROPOSED PROJECT

**TABLE 5-1**      **COMPARISON OF IMPACTS FROM PROJECT ALTERNATIVES AND THE PROPOSED PROJECT**

Topic	Proposed Project	No Project Alternative	Relocated Site Alternative	Modified Site Alternative
Aesthetics	LTS	<	>	>
Air Quality	LTS/M	<	=	>
Biological Resources	LTS/M	<	<	=
Hydrology and Water Quality	LTS/M	<	=	=
Land Use and Planning	LTS	N/A	>	N/A
Noise	LTS	<	=	>
Transportation and Circulation	LTS/M	<	>	>

Notes:  
 LTS = Less Than Significant  
 LTS/M = Less Than Significant with Mitigation  
 < = Less severe impact in comparison to the proposed project  
 = = Similar impacts in comparison to the proposed project  
 > = More severe impact in comparison to the proposed project

## 5.5 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the project site would remain unchanged and in its current condition. As such, the project site would remain unimproved and vacant. Further, this alternative would not result in any site improvements such as improved landscaping, sidewalks, or parking.

### 5.5.1 AESTHETICS

Under the No Project Alternative, the existing project site would remain in its current condition. None of the project components or improvements would be constructed and the project site would remain in its existing condition, which is comprised of an undeveloped narrow parcel of land served by existing utility and roadway infrastructure. As described in Chapter 4.1, Aesthetics, of this Draft EIR, potential impacts related to the visual character or quality of the site and its surroundings would not be significant given that compliance with existing Municipal Code regulations, such as design review, would ensure that the existing character of the site and its surrounding area be maintained. However, since construction of the project would alter the character of the undeveloped site, the No Project Alternative would result in a *less severe* aesthetic impact compared to the project.

### 5.5.2 AIR QUALITY

Under this alternative, the project site would remain the same and no development would occur. As described in Chapter 4.2, Air Quality, the proposed project would result in significant construction-related emissions; however, Mitigation Measure AIR-1 would reduce those impacts to a less-than-significant level. Further, the proposed project would exceed the Bay Area Air Quality Management District's (BAAQMDs) thresholds given that the project area is in nonattainment and would result in construction emissions;

## ALTERNATIVES TO THE PROPOSED PROJECT

however, implementation of Mitigation Measure AIR-2, as described in Chapter 4.2, would reduce those impacts to a less-than-significant level. In addition, the project would temporarily elevate concentrations of Toxic Air Contaminants (TACs) and PM<sub>2.5</sub> in the vicinity of the project site thereby exceeding BAAQMDs risk threshold due to construction activities associated with the project; however, Mitigation Measure AIR-3 would reduce those impacts to a less-than-significant level. Although the proposed project would result in less-than-significant air quality impacts with implementation of mitigation measures, the No Project Alternative would not involve construction given that it would remain in its existing condition and therefore would not result in construction-related emissions. Therefore, because this alternative would not generate any construction air emissions, a *less severe* air quality impact would occur compared to the proposed project.

### 5.5.3 BIOLOGICAL RESOURCES

Under the No Project Alternative, there would be no removal and/or disturbance to existing trees or other construction-related activities on site that would otherwise occur under the proposed project. As described in Chapter 4.3, Biological Resources, tree removal, and other construction activities, such as grading, has the potential to disturb the California red-legged frog and San Francisco garter snake habitat, and result in an inadvertent loss of bird nests in active use. However, implementation of Mitigation Measure BIO-1a and BIO-1b, as described in Chapter 4.3, would reduce those impacts to a less-than-significant level. Although the proposed project would not result in a significant and unavoidable impact with regards to biological resources, the no project alternative would not involve removal of existing trees or disturbance to habitat, including the California red-legged frog and San Francisco garter snake, which removal may result in inadvertent loss of bird nests in active use. Therefore, the No Project Alternative would result in *less severe* impacts to biological resources when compared to the proposed project.

### 5.5.4 HYDROLOGY AND WATER QUALITY

Under the No Project Alternative, the proposed project site would remain in its existing condition as a vacant undeveloped parcel and construction of a fire station building would not occur. As discussed in Chapter 4.4, Hydrology and Water Quality, the proposed project would result in less-than-significant hydrology and water quality impacts with regards to groundwater supplies and recharge as a result of compliance with Best Management Practices (BMPs) and Low Impact Design (LID), which includes site features that would contribute to allow for groundwater recharge and minimize stormwater runoff. In addition, the proposed project is not located within a tsunami inundation zone according to a newer 2013 tsunami inundation map was developed as part of the Science Application for Risk Reduction (SAFFR) tsunami study, carried out by the United States Geological Survey (USGS) in collaboration with the National Oceanic and Atmospheric Administration (NOAA), the California Geological Survey (CGS), and the California Office of Emergency Services (Cal OES). According to the SAFFR Tsunami Inundation Map, shown as Figure 4.4-2 in Chapter 4.4, Hydrology and Water Quality, of this Draft EIR, the existing fire station is also outside of the tsunami inundation area. Nevertheless, because no changes to the existing fire station would occur under the No Project Alternative, this alternative would not generate contaminants from demolition and construction that could contaminate stormwater or increase the amount of impervious surfaces, nor would it result in the construction of structures in the tsunami hazards zone. Therefore, this alternative would result in *less severe* hydrology and water quality impacts compared to the proposed project.

## ALTERNATIVES TO THE PROPOSED PROJECT

### 5.5.5 NOISE

The No Project Alternative would not result in any changes to existing conditions and temporary increases in noise and vibration as a result of construction-related activities associated with the proposed project would not occur. As discussed in Chapter 4.5, Noise, the proposed project would result in less than significant noise impacts with implementation of mitigation measures. The No Project Alternative would not result in any construction activities that would expose people to or generate groundborne vibration or temporary or permanent increases to ambient noise levels given that the site would remain in its existing condition. For those reasons, this alternative would result in *less severe* noise impacts compared to the proposed project.

### 5.5.6 TRANSPORTATION AND CIRCULATION

Under the No Project Alternative, the existing project site would remain in its current condition and would not result in changes to the existing circulation pattern at the project site. As discussed in Chapter 4.6, Transportation and Traffic, the proposed project would generate fewer than 20 peak hour trips; therefore, the proposed project would not result in substantial increases in congestion and delays in the roadway system. Further, under this alternative, the fire station would continue operating at its existing location and would not result in any site improvements that would result in hazards due to design features. As such, access to and from the existing station would remain along Obispo Road where fire trucks currently back into the garage. However, under the proposed project, the new fire station would have a pull-through design where trucks enter in the eastern most driveway and exit along the western driveway along Obispo Road. As a result, the proposed project could result in a slight improvement by not requiring firetrucks to back into a garage from a public street, as under existing conditions. Nevertheless, there appears to be no issues with line of sight when pulling out during calls for service, thus, there would be no hazards related to design features of the existing fire station. Lastly, the No Project Alternative would not generate additional vehicle trips, while the project would generate new vehicle trips within the vicinity of the site. Overall, because this alternative would continue to operate under existing conditions and not result in any additional vehicle trips, this alternative would result in *less severe* transportation and circulation impacts compared to the proposed project.

## 5.6 RELOCATED SITE ALTERNATIVE

Under the Relocated Site Alternative, the project components as proposed in Chapter 3, Project Description, would remain the same; however, the proposed project would be constructed at an alternate site located at the 3.4-acre vacant parcel on the corner of Capistrano Road and the west side of Highway 1, as shown above on Figure 5-1.

### 5.6.1 AESTHETICS

Under the Relocated Site Alternative, the overall components of the proposed project would remain the same as described in Chapter 3, Project Description, including the site layout and design; however, it would be constructed at a site located to the north of the proposed project site at the corner of Capistrano Road and the west side of Highway 1. As described in Chapter 4.1, Aesthetics, of this Draft EIR,

## ALTERNATIVES TO THE PROPOSED PROJECT

potential impacts related to the visual character or quality of the site and its surroundings would not be significant given that compliance with existing Municipal Code regulations, including evaluation and review of the project with the County's design review criteria., which would ensure that the existing character of the area be preserved. As with the proposed project, development under this alternative would be required to comply with the site development standards including approval of any variances, such as setback and height requirements outlined in the Municipal Code and applicable design standards to minimize visual impacts of the Relocated Site Alternative on views of the Pacific Ocean. However, under this alternative, because the project site would be located to the west of Highway 1, there is a greater potential for impacts to views of the Pacific Ocean than under the proposed project, where it was determined that views of the ocean from Highway 1 would not be obstructed. Consequently, this alternative would have *more severe* impacts in comparison to the proposed project with respect to aesthetics.

### 5.6.2 AIR QUALITY

Under this alternative, all of the components of the proposed project would be constructed; however, at a site located to the north of the proposed project site. As described in Chapter 4.2, Air Quality, the proposed project would result in significant construction-related and operational emissions; however, mitigation measures would reduce those impacts to a less-than-significant level. Given that this alternative would result in the same overall development under the proposed project, project-generated fugitive dust and other pollutant emissions associated with construction activities at the site, including PM<sub>2.5</sub>, would be similar to those generated by the proposed project. In addition, pollutant emissions associated with vehicle trips and emissions associated with this alternative would be similar to those of the proposed project. Implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3 would still apply to this alternative. As a result, the Relocated Site Alternative would result in *similar* air quality impacts compared to the proposed project.

### 5.6.3 BIOLOGICAL RESOURCES

Under the Relocated Site Alternative, all of the components of the proposed project would be constructed; however, at a site located to the north of the proposed project site, at the corner of Capistrano Road and the west side of Highway 1. The site under this alternative is a vacant and unimproved parcel of land that is generally void of any grasses, trees, or other habitat that would be suitable to special-status species. Further, given that the site under this alternative is directly adjacent to Highway 1 in a developed area, it is unlikely that the parcel would support any special-status plant or animal species. Nevertheless, the same mitigation measures that would be implemented under the proposed project, would still apply under this alternative. The biological resources impacts under the proposed project are fully mitigated with implementation of Mitigation Measures BIO-1A and BIO-1B. However, the Relocated Site Alternative would be located outside of the California red-legged frog critical habitat units.<sup>2</sup> As described in Chapter 4.3, Biological Resources, tree removal, and other construction activities during have the potential to disturb California red-legged frog and San Francisco garter snake habitat, which may result in an inadvertent loss of bird nests in active use. Although the proposed project

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<sup>2</sup> U.S Fish and Wildlife Service (USFWS), Sacramento Fish and Wildlife Office, 2016. California Red-Legged Frog Critical Habitat Map. [https://www.fws.gov/sacramento/es/critical-habitat/CA-Red-Legged-Frog/Current/Documents/SNM-1-2\\_2010\\_CRLF\\_fCH.pdf](https://www.fws.gov/sacramento/es/critical-habitat/CA-Red-Legged-Frog/Current/Documents/SNM-1-2_2010_CRLF_fCH.pdf), accessed September 26.

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would not result in a significant impact with regards to biological resources, this alternative is located outside of an area identified as potentially suitable habitat for the California red-legged frog, a special-status species; therefore, the Relocated Site Alternative would result in *less severe* impacts to biological resources.

### 5.6.4 HYDROLOGY AND WATER QUALITY

Under this alternative, all of the components of the proposed project would be constructed at a site located to the north of the proposed project site at the corner of Capistrano Road and the west side of Highway 1. As discussed in Chapter 4.4, Hydrology and Water Quality, the proposed project would result in less-than-significant hydrology and water quality impacts with regards to groundwater supplies and recharge as a result of compliance with BMPs and LID, which includes site design features to allow groundwater recharge and minimize stormwater runoff. The overall footprint and impervious surface would remain similar as the proposed project. As such, the same BMPs and LID techniques as proposed by the project would still be implemented under this alternative. As noted above, the Relocated Project Alternative site is not within the tsunami hazard zone.. As described in Chapter 4.4, Hydrology and Water Quality, of this Draft EIR, the proposed project is also not located within a tsunami inundation zone according to a newer 2013 tsunami inundation map was developed as part of the SAFFR tsunami study, carried out by the United States Geological Survey (USGS) in collaboration with NOAA, CGS, and Cal OES. Therefore, the Relocated Site Alternative would result in *similar* impacts to hydrology and water quality compared to the proposed project.

### 5.6.5 LAND USE

Under this alternative, the project would be relocated to a corner site that is within and considered a key gateway to the Princeton Plan Area, which is an area that is located west of Highway 1 that stretches from Moss Beach at its northern boundary to El Granada at its southern boundary and includes the Pillar Point Harbor. Although the Princeton Plan has not yet been officially adopted, its intent is to, among things, emphasize visitor serving uses and recreational opportunities in its Plan Area. Specifically, within the Coastsides Commercial Recreation District, which is where the project would be located under this alternative, the Draft Princeton Plan calls for focusing on visitor serving uses. Further, according to draft land use diagrams for the Princeton Plan, the area where the project would be relocated to under this alternative is planned for recreational parking. Therefore, under this alternative, the project could conflict with the Princeton Plan once adopted. As a result, this alternative would result in a *more severe* impacts compared to the proposed project.

### 5.6.6 NOISE

Under this alternative, all of the components of the proposed project would be constructed at a site located to the north of the proposed project site at the corner of Capistrano Road and the west side of Highway 1. As discussed in Chapter 4.5, Noise, the proposed project would result in less than significant noise impacts. However, the Relocated Site Alternative would be located in the Coastsides Commercial Recreation (CCR) zone, which allows for commercial uses that may generate a greater level of ambient noise than the proposed project location, which is located in the El Granada (EG/DR/CD) and Neighborhood Commercial Urban (C-1/S-3/RD/CD) zones, and is surrounded by residential uses to the

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north and commercial uses to the west and northwest. Therefore, ambient noise levels at the relocated site are likely greater under existing conditions than noise levels at proposed project site. As a result, the noise from the proposed project would not likely be as noticeable under this alternative location, than at the proposed project site. Nevertheless, the existing fire station is located directly adjacent to the proposed project site, thus, because operations are not likely to change, noise impacts from the proposed project and under this alternative would be similar. For this reason, this alternative would result in *similar* noise impacts compared to the proposed project.

### 5.6.7 TRANSPORTATION AND CIRCULATION

Under this alternative, all of the components of the proposed project would be constructed at a site located to the north of the proposed project site at the corner of Capistrano Road and the west side of Highway 1. As discussed in Chapter 4.6, Transportation and Circulation, the proposed project would generate fewer than 20 peak hour trips; therefore, the proposed project would not result in substantial increases in congestion and delays in the roadway system. Given that the same components of the proposed project would be constructed under this alternative, albeit at a different site, the amount of trips generated would, therefore, be similar under this alternative. However, given that the project site under this location is in a more intensely urbanized area and directly adjacent to Highway 1 and a large intersection, this alternative site could result in increased congestion and result in greater safety hazards during calls for service given the increased amount of existing traffic at the alternative site. For these reasons, the Relocated Site Alternative would result in *more severe* impacts to transportation and circulation compared to the proposed project.

## 5.7 MODIFIED SITE PLAN ALTERNATIVE

As described more fully above under Section 5.3.2, under the Modified Site Plan Alternative, the overall components of the proposed project would be similar as proposed; however, to comply with the requirements of Zoning Ordinance Section 6825.3 and Building Regulations Section 8133, the proposed project site would be elevated to at-grade with Avenue Alhambra, as shown on Figure 5-2. Under this alternative, a 22-foot retaining wall would be constructed along Obispo Road and backfilled with soil and other material to elevate the site and protect it from a tsunami event. As a result of this alternative, access to and from the project site would be relocated from Obispo Road to Avenue Alhambra. Further, this alternative assumes the same mitigation measures identified for the project would be implemented.

### 5.7.1 AESTHETICS

Under the Modified Site Plan Alternative, the overall components of the proposed project would remain the same as described in Chapter 3, Project Description, including the general site layout and design; however, it would be constructed in compliance with requirements of Section 6825.3 of the County Zoning Code in order to elevate the overall site out of the Tsunami Inundation Area. As shown above in Figure 5-2, this alternative would result in a 22 foot retaining wall along Obispo Road to elevate the fire station, which would be more visible than under the proposed project. As with the proposed project, the fire station would be constructed at a maximum height of 30 feet, resulting in potential view shed impacts. However, this alternative would be still be required to comply with existing Municipal Code

## ALTERNATIVES TO THE PROPOSED PROJECT

regulations, such as design review, which would ensure that the existing character of the area be preserved. For example, Section 6565.17 of the Zoning Code establishes standards for design such as protecting views by the height and location of structures and protecting public views to and along the shoreline. Given this alternative would ultimately elevate the project site at-grade with Avenue Alhambra, there would be a greater impact to views from Avenue Alhambra and from Highway One. Same as the proposed project, development under this alternative would be required to comply with the site development standards including obtaining any variances as needed, such as setback and height requirements outlined in the Municipal Code, and applicable design standards to minimize visual impacts of the Relocated Site Alternative on views of the Pacific Ocean. Nevertheless, this alternative would result in greater impacts with regards to views given the elevated height of the structure which would obstruct views of the ocean from Avenue Alhambra. As a result of greater impacts to near- and far-field views from Avenue Alhambra, and be highly visible from Highway One and the adjacent public trail area, this alternative would have *more severe* impacts in comparison to the proposed project with respect to aesthetics.

### 5.7.2 AIR QUALITY

Under this alternative, all of the components of the proposed project would be constructed at the proposed project site; however, the project site would be elevated to nearly at-grade with Avenue Alhambra. This would require construction of a large retaining wall along Obispo Road and filling in the project site with soil to elevate the overall project site which would result in greater air quality impacts during the construction phase of the project. As described in Chapter 4.2, Air Quality, the proposed project would result in significant construction-related and operational emissions; however, mitigation measures would reduce those impacts to a less-than-significant level. Under this alternative, the construction of a large retaining wall along Obispo Road and filling in the area to create a level surface at-grade with Avenue Alhambra would result in additional construction activities, including more use of heavy equipment such as bulldozers and excavators which could result in greater impacts to air quality. Given that this alternative would result in increased construction activities compared to the proposed project, project-generated fugitive dust and other pollutant emissions associated with construction activities at the site, including PM<sub>2.5</sub>, would increase above those generated by the proposed project. Further, pollutant emissions associated with vehicle trips and emissions associated with this alternative would be increased as a result of additional truck trips to bring in soil and other material to be able to elevate the project site. Although Mitigation Measures AQ-1, AQ-2, and AQ-3 would still apply to this alternative, the increased construction activity to be able to elevate the site would result in *more severe* air quality impacts compared to the proposed project.

### 5.7.3 BIOLOGICAL RESOURCES

Under the Modified Site Plan Alternative, all of the components of the proposed project would be constructed at the proposed project site; however, the project site would be elevated to nearly at-grade with Avenue Alhambra. As described in Chapter 4.3, Biological Resources, tree removal, and other construction activities, such as grading, has the potential to disturb the California red-legged frog and San Francisco garter snake habitat, and result in an inadvertent loss of bird nests in active use. However, implementation of Mitigation Measure BIO-1a and BIO-1b, as described in Chapter 4.3, would reduce those impacts to a less-than-significant level. Although this alternative would involve construction of a

## ALTERNATIVES TO THE PROPOSED PROJECT

retaining wall along Obispo Road and filling in the project site to elevate it to at-grade with Avenue Alhambra, the overall area of disturbance would generally be similar under this alternative as the proposed project. Further, because the same mitigation measures that would be implemented under the proposed project, would still apply under this alternative, biological resources impacts would be fully mitigated with implementation of Mitigation Measures BIO-1A and BIO-1B. Therefore, because the overall area of disturbance would be similar under this alternative as the proposed project, and because the proposed mitigation measures would fully mitigate potential impacts to the California red-legged frog and San Francisco garter snake habitat, the Modified Site Alternative would result in *similar* impacts to biological resources when compared to the proposed project.

### 5.7.4 HYDROLOGY AND WATER QUALITY

Under this alternative, all of the components of the proposed project would be constructed at a site located to the north of the proposed project site at the corner of Capistrano Road and the west side of Highway 1. As discussed in Chapter 4.4, Hydrology and Water Quality, the proposed project would result in less-than-significant hydrology and water quality impacts with regards to groundwater supplies and recharge as a result of compliance with BMPs and LID, which includes site design features to allow groundwater recharge and minimize stormwater runoff. The overall footprint and impervious surface would remain similar as the proposed project. As such, the same BMPs and LID techniques as proposed by the project would still be implemented under this alternative. Further, the proposed project is not located within a tsunami inundation zone according to a newer 2013 tsunami inundation map was developed as part of the SAFFR tsunami study, carried out by the United States Geological Survey (USGS) in collaboration with NOAA, CGS, and Cal OES. According to the SAFFR Tsunami Inundation Map, shown as Figure 4.4-2 in Chapter 4.4, Hydrology and Water Quality, of this Draft EIR, the existing fire station is outside of the tsunami inundation area. Therefore, under this alternative, the project would remain outside of the tsunami hazard zone, similar to the proposed project. Consequently, this alternative would result in *similar* impacts to hydrology and water quality compared to the proposed project.

### 5.7.5 NOISE

Under this alternative, all of the components of the proposed project would be constructed at the proposed project site; however, the project site would be elevated to nearly at-grade with Avenue Alhambra. This would result in a retaining wall to be constructed along Obispo Road and backfilled to create a level building surface. As a result, the ingress/egress of the project site would be relocated to Avenue Alhambra, rather than be constructed at Obispo Road as proposed. As discussed in Chapter 4.5, Noise, the proposed project would result in less than significant noise impacts. However, given that the access to the project site would be relocated to Avenue Alhambra, this alternative would generate a greater level of ambient and operational noise along Avenue Alhambra given that the fire trucks would exit and enter along Avenue Alhambra during calls for service, which is closer to the adjacent residential development along that street compared to the proposed project, which would provide access to and from the site along Obispo Road further away from existing residential development. Because this alternative would alter the location of access to and from the site from Obispo Road to Avenue Alhambra, increases in noise would occur when compared to the proposed project, thus, the Modified Site Plan Alternative would result in more *severe* noise impacts compared to the proposed project.



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### 5.7.6 TRANSPORTATION AND CIRCULATION

Under this alternative, all of the components of the proposed project would be constructed at the proposed project site; however, the project site would be elevated to nearly at-grade with Avenue Alhambra. As a result, the ingress/egress of the project site would be relocated to Avenue Alhambra, rather than be constructed at Obispo Road as proposed. As discussed in Chapter 4.6, Transportation and Circulation, the proposed project would generate fewer than 20 peak hour trips; therefore, the proposed project would not result in substantial increases in congestion and delays in the roadway system. Given that the same components of the proposed project would be constructed under this alternative, albeit at a higher elevation and with the relocated access point, the amount of trips generated would, therefore, be similar under this alternative. However, given that the project site under this alternative would relocate access to and from the site from Obispo Road to Avenue Alhambra, this alternative could result in increased congestion and result in greater safety hazards during calls for service given that site access would be located closer to residential uses along Avenue Alhambra where there is an increased amount of existing traffic compared to Obispo Road. Further, the relocated site access would alter the access route to Highway 1 requiring trucks to either turn left at Avenue Alhambra to get to Avenue Portola and then to Highway 1 or turn right on Avenue Alhambra to get to Coronado Avenue to Highway 1, thus, creating a slightly longer travel distances along Avenue Portola and Coronado Avenue through areas of increased congestion where businesses and schools are located. Under the proposed project, although fire trucks would still use Avenue Portola and Coronado Avenue to access Highway 1, the travel distance from Obispo Road, as proposed by the project, is more direct and would not, as a result pass by the adjacent school along Coronado Avenue or in front of businesses along Avenue Portola. Consequently, by relocating the ingress and egress of the project under the Modified Site Plan Alternative, there is the potential for greater congestion and safety hazards during calls for service. For these reasons, the Modified Site Plan Alternative would result in *more severe* impacts to transportation and circulation compared to the proposed project.

## 5.8 ABILITY TO MEET PROJECT OBJECTIVES

This section described how each alternative would meet the project objectives, described in Chapter 3, Project Description, of this Draft EIR, and repeated above in Section 5.2.

### 5.8.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the proposed project would not be implemented, and therefore this alternative would not meet any of the objectives.

### 5.8.2 RELOCATED SITE ALTERNATIVE

The Relocated Site Alternative would meet most of the project objectives. Given that this alternative would ultimately result in the project to be constructed as proposed, with the exception of being located at a site just north of the proposed project site, the overall components, such as layout and design, would remain similar. As such, the Relocated Site Alternative would continue to meet most the objectives

## **ALTERNATIVES TO THE PROPOSED PROJECT**

identified above in Section 5.2. However, if the site could not be acquired, the CFPD would need to implement condemnation proceedings to obtain title, which conflicts with one of the project objectives.

### **5.8.3 MODIFIED SITE PLAN ALTERNATIVE**

The Modified Site Plan Alternative would meet most of the project objectives. Given that this alternative would ultimately result in the project to be constructed as proposed, albeit at a higher elevation than proposed, the overall components, such as layout and design, would remain similar, with the exception of access to the site relocation from Obispo Road to Avenue Alhambra. However, this alternative would not meet the project objective to minimize interference with ocean and hillside views. Because this alternative would essentially elevate the project site to at-grade with Avenue Alhambra, near- and far-field views of the Pacific Ocean would be affected and therefore would interfere with ocean and hillside views.

## **5.9 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

In addition to the discussion and comparison of impacts of the project and the alternatives, Section 15126.6 of the State CEQA Guidelines requires that an “environmentally superior” alternative be identified. In general, the environmentally superior alternative is the alternative that would be expected to generate the least environmental impact. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets project objectives.

As shown in Table 5-1, the No Project Alternative would have the fewest environmental impacts as compared to the other alternatives, and would therefore be considered the environmentally superior alternative. However, in accordance with State CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the “No Project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Accordingly, the Relocated Site Alternative would be the environmentally superior alternative.

## **6. CEQA-Mandated Sections**

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This chapter provides an overview of the impacts of the proposed project based on the analyses presented in Chapters 4 through 5 of this Draft EIR. The topics covered in this chapter include impacts found not to be significant, growth inducement, significant and unavoidable, and significant irreversible changes due to the proposed project. A more detailed analysis of the effects the proposed project would have on the environment and proposed mitigation measures to minimize significant impacts are provided in Chapters 4.1 through 4.6.

### **6.1 IMPACTS FOUND NOT TO BE SIGNIFICANT**

The California Environmental Quality Act (CEQA) Guidelines Section 15128 allows environmental issues, for which there is no likelihood of significant impact to be briefly discussed and not analyzed further in the EIR.

An Initial Study was prepared for the proposed project, which analyzed the proposed project in accordance with Appendix G of the CEQA Guidelines (see Appendix A, Initial Study, of this Draft EIR). Based on the analysis contained in the Initial Study and due to existing conditions on the project site and surrounding area it was determined that development of the proposed project would not result in significant environmental impacts for the following topic areas and therefore, impacts related to these topics are not analyzed further in this Draft EIR:

- Agricultural and Forestry Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Additionally, based on the analysis contained in the Initial Study, it was determined that development of the proposed project would not result in significant environmental impacts under a number of the significance criteria presented in Appendix G in the following topic areas:

## CEQA-MANDATED SECTIONS

- Aesthetics
  - Substantially damage scenic resources, including but not limited to, trees, outcroppings, and historic buildings within a State scenic highway.
- Air Quality
  - Conflict with or obstruct implementation of the applicable air quality plan.
  - Create objectionable odors affecting a substantial number of people.
- Biological Resources
  - Interfering 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.
  - Conflicting with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- Hydrology and Water Quality
  - Violate any water quality standards or waste discharge requirements.
  - Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a significant lowering of the local groundwater table level.
  - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
  - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.
  - Otherwise substantially degrade water quality.
  - 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, or place structures that would impede or redirect flood flows within a 100-year flood hazard area.
  - 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.
- Noise
  - Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.
  - Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

## CEQA-MANDATED SECTIONS

- Expose people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.
- Transportation and Circulation
  - Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
  - Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
  - Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
  - Result in inadequate emergency access.

Based on the analysis contained in this Draft EIR, it was determined that development of the proposed project would not result in significant environmental impacts under the following topic areas:

- Aesthetics
- Hydrology and Water Quality
- Noise
- Transportation and Circulation

## 6.2 GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth inducing factors might include the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the proposed project's potential to create such growth inducements. Not all aspects of growth inducement are negative; rather, negative impacts associated with growth inducement occur only where the growth associated with the proposed project would cause adverse environmental impacts.

The proposed project would not involve direct growth inducement through the construction of 12,425 square feet of non-residential (public facility) space. As described in the Section XIII, Population and Housing, in the Initial Study (Appendix A of this Draft EIR), although the proposed project would include on-site duty/living areas for fire staff during their shifts, the proposed project is not intended to serve as a permanent residence and would replace the existing fire station. As such, the proposed project would not result in any direct or indirect population growth.

The proposed project is not expected to result in indirect growth inducement because all development associated with the project would occur on the project site. The project site is a currently undeveloped site containing non-native annual grassland habitat and a drainage area surrounded by dense riparian

## **CEQA-MANDATED SECTIONS**

habitat to the west of the center of the Project site, and is within a highly urbanized area in El Granada, and would not involve the extension of infrastructure or services to a previously unserved area.

Development of the proposed project would involve land clearing, tree and vegetation removal and construction activities that could generate some temporary employment opportunities; however, given the temporary nature of such opportunities, it is unlikely that construction workers would relocate to El Granada as a result of the proposed project. Thus, the proposed project would not be considered growth-inducing from an employment perspective.

### **6.3 SIGNIFICANT AND UNAVOIDABLE IMPACTS**

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. However, there are no significant and unavoidable impacts that would occur with buildout of the proposed projects.

### **6.4 SIGNIFICANT AND IRREVERSIBLE CHANGES**

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which the proposed project would commit nonrenewable resources to uses that future generations would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

#### **6.4.1 CHANGES IN LAND USE THAT COMMIT FUTURE GENERATIONS**

The proposed project involves the redevelopment of a site that is currently undeveloped; however, is adjacent to already urbanized areas that include single- and multi-family residential, commercial, and, public facilities. Further, the proposed project would be constructed on a site that is directly across the street (Avenue Portola) from the existing fire station. Therefore, because the project site is already located in an urban area with existing commercial, and residential uses, the proposed project is not expected to result in any land use changes that would commit future generations to uses that are not already prevalent in the project site vicinity.

#### **6.4.2 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS**

Potential environmental accidents of concern include those that would have adverse effects on the environment or public health due to the nature or quantity of material released during an accident and the receptors exposed to that release. Demolition and construction activities associated with development of the proposed project would involve some risk for environmental accidents. However, these activities would be monitored by City, State, and federal agencies, and would follow professional industry standards for safety and construction. Additionally, the land uses proposed by the project would not include any uses or activities beyond those currently used at the existing fire station that are likely to

## CEQA-MANDATED SECTIONS

contribute to or be the cause of a significant environmental accident. As a result, the proposed project would not pose a substantial risk of environmental accidents.

### 6.4.3 LARGE COMMITMENT OF NONRENEWABLE RESOURCES

Consumption of nonrenewable resources includes issues related to increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. The proposed project would require water, electric, and gas service, as well as additional resources for construction. Additionally, the ongoing operation of the proposed project would involve the use of nonrenewable resources. Construction and ongoing maintenance of the proposed project would irreversibly commit some materials and nonrenewable energy resources. Materials and resources used would include, but are not limited to, nonrenewable and limited resources such as oil, gasoline, sand, gravel, asphalt, and steel. These materials and energy resources would be used for infrastructure development, transportation of people and goods, as well as utilities. During the operational phase of the proposed project (post-construction), energy sources including oil and gasoline would be used for lighting, heating, and cooling of residences, as well as transportation of people to and from the project site.

However, the proposed project would include several features that would offset or reduce the need for nonrenewable resources. The proposed project would be required to comply with all applicable building and design requirements, including those set forth in California Code of Regulations Title 24 relating to energy conservation. In compliance with CALGreen, the State's Green Building Standards Code, the proposed project would be required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. In addition, buildings that are constructed in accordance with the Building and Energy Efficiency Standards (Title 24, Part 6) are 25 percent (residential) to 30 percent (non-residential) more energy efficient than those constructed under the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Although the construction and ongoing operation of the proposed project would involve the use of nonrenewable resources, through the inclusion of energy-conserving project features and compliance with applicable standards and regulations, the proposed project would not represent a large commitment of nonrenewable resources.

The project site does not contain any agricultural land or a mining reserve, so it would not affect those natural resources.

## **CEQA-MANDATED SECTIONS**

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## **7. Organizations and Persons Consulted**

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This Draft EIR was prepared by the following consultants and individuals:

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