October 2022

The Mosaic Project Draft EIR

for Alameda County

COUNTY OF ALAMEDA
CALIFORNIA

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Table of Contents

1. EXECUTIVE SUMMARY 1-1

1.1 Environmental Procedures 1-1
1.2 Summary of Proposed Project 1-4
1.3 Summary of Project Alternatives 1-4
1.4 Issues to be Resolved 1-4
1.5 Areas of Concern 1-5
1.6 Summary of Impacts and Mitigation Measures 1-5

2. INTRODUCTION 2-1

2.1 Proposed Project 2-1
2.2 EIR Scope 2-1
2.3 Environmental Review Process 2-2

3. PROJECT DESCRIPTION 3-1

3.1 Project Site Location and Characteristics 3-1
3.2 Project Objectives 3-6
3.3 Proposed Project 3-7
3.4 Required Permits and Approvals 3-26

4. ENVIRONMENTAL ANALYSIS 4-1

4.1 Agriculture and Forestry Resources 4.1-1
4.2 Air Quality 4.2-1
4.3 Biological Resources 4.3-1
4.4 Cultural Resources 4.4-1
4.5 Geology and Soils 4.5-1
4.6 Greenhouse Gas Emissions 4.6-1
4.7 Hazards and Hazardous Materials 4.7-1
4.8 Hydrology and Water Quality 4.8-1
4.9 Land Use and Planning 4.9-1
4.10 Noise and Vibration 4.10-1
4.11 Public Services 4.11-1
4.12 Transportation 4.12-1
4.13 Tribal Cultural Resources 4.13-1
4.14 Utilities and Service Systems 4.14-1
4.15 Wildfire 4.15-1

5. ALTERNATIVES TO THE PROPOSED PROJECT 5-1

TABLE OF CONTENTS

5.1 Introduction 5-1
5.2 Significant Impacts 5-1
5.3 Overview of Project Alternatives 5-3
5.4 Alternatives Considered but Rejected 5-4
5.5 Impact Assessment 5-4
5.6 Objectives Assessment 5-12
5.7 Environmentally Superior Alternative 5-13

6. CEQA-MANDATED SECTIONS 6-1

6.1 Impacts Found Not to be Significant 6-1
6.2 Significant Irreversible Changes 6-4
6.3 Growth-Inducing Impacts of the proposed project 6-6

7. ORGANIZATIONS AND PERSONS CONSULTED 7-1

APPENDICES

Appendix A: Notice of Preparation
Appendix B: Air Quality and Greenhouse Gas Emissions Data
Appendix C: Health Risk Assessment
Appendix D: Biological Resources Information
Appendix E: Geotechnical Engineering Investigation Report
Appendix F: Draft Fire Safety and Emergency Response Plan
Appendix G: Wastewater Basis of Design
Appendix H: Noise Data
Appendix I: Focused Traffic Study
Appendix J: NAHC Sacred Lands File Search

LIST OF FIGURES

Figure 3-1 Regional Location 3-4
Figure 3-2 Local Context 3-5
Figure 3-3 Existing Site Plan 3-10
Figure 3-4 Proposed Project Site Plan 3-11
Figure 3-5 Camping Cabins 3-12
Figure 3-6 Central Meeting and Dining Hall 3-13
Figure 3-7 Staff House 3-14
Figure 3-8 Main Building – Floor Plans 3-15
Figure 3-9 Main Building – Elevations 3-16
Figure 3-10 Typical Cabin – Floor Plan and Elevations 3-17
Figure 3-11 Staff Housing – Floor Plans and Elevations 3-18
Figure 3-12 Restroom Building – Floor Plan and Elevations 3-19
Figure 3-13 Caretaker House (Existing Structure) – Floor Plan and Elevations 3-20
Figure 4.3-1 Special-Status Plants and Sensitive Natural Communities 4.3-10
Figure 4.3-2 Special-Status Animals and Critical Habitat 4.3-11
Figure 4.5-1 Site Topographic Map 4.5-7
Figure 4.8-1 Proposed Planting Plan 4.8-16
Figure 4.8-2 Proposed Storm Drain Layout (North) 4.8-19
Figure 4.8-3 Proposed Storm Drain Layout (South) 4.8-20
Figure 4.8-4 Proposed Septic Layout 4.8-23
Figure 4.10-1 L50 Outdoor Activity Noise Contours (dBA L_{50}) 4.10-14
Figure 4.10-2 L_{max} Outdoor Activity Noise Contours (dBA L_{max}) 4.10-15
Figure 4.10-3 L50 Campfire Noise Contours (dBA L50) 4.10-16
Figure 4.10-4 L_{max} Campfire Noise Contours (dBA L_{max}) 4.10-17
Figure 4.15-1 Fire Hazard Severity Zones 4.15-14
Figure 4.15-2 California Public Utilities Commission High Fire-Threat Districts 4.15-15
Figure 4.15-3 Wildland Urban Interface 4.15-16

TABLE OF CONTENTS

LIST OF TABLES

Table 1-1 Summary of Impacts and Mitigation Measures 1-7
Table 3-1 Proposed Project Buildout 3-21
Table 4-1 Approved and Pending Cumulative Projects within the Vicinity of the Proposed Project 4-4
Table 4.2-1 Criteria Air Pollutant Health Effects Summary 4.2-2
Table 4.2-2 Ambient Air Quality Standards for Criteria Pollutants 4.2-6
Table 4.2-3 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin 4.2-17
Table 4.2-4 Ambient Air Quality Monitoring Summary 4.2-18
Table 4.2-5 Air District Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds 4.2-20
Table 4.2-6 Construction-Related Criteria Air Pollutant Emissions Estimate 4.2-26
Table 4.2-7 Operational Criteria Air Pollutant Emissions Estimates 4.2-28
Table 4.2-8 Construction Health Risk Assessment Results 4.2-29
Table 4.3-1 Castro Valley General Plan Policies Relevant to Biological Resources 4.3-5
Table 4.4-1 Relevant Castro Valley General Plan Cultural Resources Policies 4.4-5
Table 4.5-1 Castro Valley General Plan Goal, Policies, and Actions Relevant to Geology and Soils 4.5-3
Table 4.6-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2 ..... 4.6-3
Table 4.6-2 Summary of GHG Emissions Risk to California 4.6-5
Table 4.6-3 Priority Strategies for Local Government Climate Action Plans 4.6-11
Table 4.6-4 Consistency Analysis with BAAQMD's GHG Best Management Practices 4.6-22
Table 4.7-1 Castro Valley General Plan Goals, Policies, and Actions Pertaining to Hazards and Hazardous Materials 4.7-8
Table 4.8-1 Construction BMPs 4.8-14
Table 4.9-1 Relevant Castro Valley General Plan Land Use and Development Policies 4.9-2
Table 4.10-1 Typical Noise Levels 4.10-4
Table 4.10-2 Human Reaction to Typical Vibration Levels 4.10-5
Table 4.10-3 Noise and Land Use Compatibility Table 4.10-6
Table 4.10-4 Alameda Exterior Noise Standards 4.10-7
Table 4.10-5 Project Noise Levels at Adjacent Receptors 4.10-8
Table 4.10-6 Project-Related Construction Noise, dBA Leq 4.10-12
Table 4.10-7 Modeled Project Noise Levels at Adjacent sensitive Receptors 4.10-12
Table 4.10-8 Construction Equipment Vibration Levels for Architectural Damage 4.10-19
Table 4.10-9 Construction Equipment Vibration Levels for Vibration Annoyance 4.10-19
Table 4.11-1 Castro Valley General Plan Policies Relevant to Fire Protection and Police Services 4.11-2
Table 4.12-1 Castro Valley General Plan Policies Relevant to Transportation 4.12-3
Table 4.13-1 Relevant Castro Valley General Plan Cultural Resources Policies 4.13-2
Table 4.14-1 Production Well Description 4.14-5
Table 4.14-2 Water Demand Assumptions 4.14-6
Table 4.14-3 Peak Daily Water Demand 4.14-7

TABLE OF CONTENTS

Table 4.14-4 Water Demand and Supply Summary 4.14-7
Table 4.14-5 Treatment Waste Volume Calculations 4.14-9
Table 4.14-6 Predicted Wastewater Flow Rates[1] 4.14-14
Table 4.14-7 Conceptual Wastewater Treatment System Sizing 4.14-15
Table 4.14-8 Conceptual Dispersal System Sizing 4.14-16
Table 4.14-9 Solid Waste Generation Rates 4.14-27
Table 4.15-1 Relevant Castro Valley General Plan Wildfire Policies 4.15-6
Table 5-1 Comparison of Project Alternatives 5-3

TABLE OF CONTENTS

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1. Executive Summary

This chapter presents an overview of the proposed Outdoor Project Camp from The Mosaic Project (herein referred to as the "proposed project"). This executive summary provides a summary of the alternatives to the proposed project, identifies issues to be resolved, areas of concern, and conclusions of the analysis contained in Chapters 4, *Environmental Evaluation*, and each subchapter (Chapters 4.1 through 4.15) 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 6, *Alternatives to the Proposed Project*, of this Draft EIR.

This Draft EIR addresses the environmental effects associated with approval and 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 EIR is a public document designed to provide the public, 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[1] and the State CEQA Guidelines[2] to determine if approval of the identified discretionary actions and related subsequent development could have a significant effect on the environment. The County of Alameda, 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 County technical personnel and review of all technical reports. Information for this Draft EIR was obtained from on-site field observations; discussions with public service 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, hazards and hazardous materials, noise, and transportation and traffic).

1.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with approval and implementation of the proposed project. 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.

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.
[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

- To identify ways to avoid or reduce environmental damage.
- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- 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 statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. An EIR is 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 adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.1.1 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- Chapter 1: Executive Summary. This chapter summarizes the environmental consequences that would result from implementation of the proposed project, the alternatives to the proposed project, the recommended mitigation measures, and indicates the level of significance of environmental impacts with and without mitigation.
- Chapter 2: Introduction. This chapter provides an overview describing the Draft EIR document.
- Chapter 3: Project Description. This chapter describes the proposed project in detail, including the characteristics, objectives, and the structural and technical elements of the proposed action.
- Chapter 4: Environmental Evaluation. This chapter is divided into 15 sub-chapters corresponding to the environmental resource categories identified in CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478)]. This chapter provides a description of the physical environmental conditions in the County of Alameda, as they existed at the time the Notice of Preparation 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 subchapter provides baseline physical conditions from

which the County of Alameda acting as the lead agency determines the significance of environmental impacts resulting from the proposed project. Each subchapter 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.

- Chapter 5: Alternatives to the Proposed Project This chapter includes an evaluation of two alternatives to the proposed project, which are the CEQA-required "No Project" Alternative and the Reduced Development Alternative.
- Chapter 6: CEQA-Mandated Sections. This chapter includes a discussion of growth inducement, cumulative impacts, significant unavoidable effects, and significant irreversible changes as a result of approval and implementation of the proposed project.
- Chapter 7: Organizations and Persons Consulted. A list of people and organizations that were contacted during the preparation of this Draft EIR for the proposed project is included in this chapter.
- Appendices: The appendices for this Draft EIR (presented in portable document file [PDF] format attached to the back cover) contain the following supporting documents:
  - Appendix A: Notice of Preparation
  - Appendix B: Air Quality and Greenhouse Gas Emissions Data
  - Appendix C: Health Risk Assessment
  - Appendix D: Biological Resources Information
  - Appendix E: Geotechnical Engineering Investigation Report
  - Appendix F: Draft Fire Safety and Emergency Response Plan
  - Appendix G: Wastewater Basis of Design
  - Appendix H: Noise Data
  - Appendix I: Focused Traffic Study

1.1.2 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.*

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 discuss the changes in the environment that would result from the development of the Outdoor Project. This project EIR will examine the specific short-term impacts (project construction) and long-term impacts (project operation) that would occur as a result of project approval by the Alameda County Planning Department, as well as cumulative impacts.

1.2 SUMMARY OF PROPOSED PROJECT

The Mosaic Project, the project applicant, proposes The Outdoor Project Camp (the "proposed project") to develop an outdoor recreation facility in unincorporated Alameda County that would consist of demolishing an existing 7,500 square foot garage, improving trails and miscellaneous dirt or gravel roads, and constructing the following components: twelve 400 square foot camping cabins, a two story 40 foot high 8,500 square foot central meeting and dining hall, a 1,025 square foot restroom/shower building, and a two story 2,600 square foot dwelling. A 1,200 square foot caretaker's unit would remain from existing conditions. The project also includes water storage and treatment tanks along with sewer infrastructure that includes an on-site wastewater system with a leach field dispersal system.

1.3 SUMMARY OF PROJECT ALTERNATIVES

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 County. The following alternatives to the proposed project were considered and analyzed in detail:

- No Project Alternative
- Reduced Development 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.

1.4 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 County of Alameda, as Lead Agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the proposed project;
- Whether the benefits of the proposed project override environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance, if any;
- Whether identified mitigation measures should be adopted or modified; and
- Whether there are any alternatives to the proposed project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

1.5 AREAS OF CONCERN

The County issued a Notice of Preparation on November 19, 2021, and held a scoping meeting on November 30, 2021, to receive scoping comments. During the 30-day scoping period for this EIR, which concluded on December 19, 2021, responsible agencies and interested members of the public were invited to submit comments as to the scope and content of the EIR. While every environmental concern applicable to the CEQA process is addressed in this Draft EIR, this list is not necessarily exhaustive; rather, it attempts to capture those concerns that are likely to generate the greatest interest based on the input received during the scoping process. The comments received include those focused on the following issues:

- Potential impacts to safety of on-site and surrounding residents in case of a wildfire.
- Impacts on law enforcement from increased population and students on-site.
- Impacts on water availability for groundwater wells.
- Conflicts with zoning and land use designation.
- Concerns of waste discharge from septic facilities.
- Impacts of farm animals on natural habitat.
- Potential for project, including fire pits, to increase risk of wildfire.
- Evacuation concerns for on-site and off-site residents with increased population within a confined canyon.

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

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 proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed project has the potential to generate significant environmental impacts in a number of areas. As shown in Table 1-1, all significant impacts would be reduced to a less-than-significant level if the mitigation measures identified in this Draft EIR are adopted and implemented. Pursuant to Section 15126.2(b) of the CEQA Guidelines, an EIR must describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. As shown in Table 1-1, no significant unavoidable impacts were identified for the proposed project. As described in detail in Chapter 6, *CEQA-Mandated Sections*, the proposed project would have no significant impact on aesthetics, energy, mineral resources, population and housing, and recreation, as well as certain impacts related to agriculture and forestry resources, hazards and hazardous materials, land use and planning, public services, and utilities due to existing conditions in the project area. Accordingly, these topics have not been analyzed further in this Draft EIR.

EXECUTIVE SUMMARY

Table 1-1 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 Chapters 4.1 through 4.15. Table 1-1 is arranged in four columns: 1) environmental impact; 2) significance without mitigation; 3) mitigation measures; and 4) significance with mitigation. For a complete description of potential impacts, please refer to the specific discussions in Chapters 4.1 through 4.15.

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
AGRICULTURE AND FORESTRY RESOURCES			
AG-1: The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract.	LTS	N/A	N/A
AG-2: The proposed project would not conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	No Impact	N/A	N/A
AG-3: The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.	No Impact	N/A	N/A
AG-4: The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.	LTS	N/A	N/A
AG-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to agriculture and forestry resources.	LTS	N/A	N/A
AIR QUALITY			
AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	N/A
AQ-2: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standards.	S	**AQ-2:** The project construction contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]): ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient	LTS

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

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall 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, 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. ▪ 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 miles per hour. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways. These measures shall be noted on grading plans. The construction contractor shall implement these measures during ground disturbing activities. The project applicant shall verify compliance that these measures have been implemented during normal construction site inspections.	
AQ-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
AQ-4: The proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	S	**AQ-4:** The project applicant shall prepare and implement an Odor Management Plan (Plan) to ensure compliance with BAAQMD Regulation 1, Rule 1-301, Public Nuisance. The Plan shall control odors generated by manure collection and storage from the farm animals to ensure odors would not constitute a public nuisance. The Plan shall be prepared to the satisfaction of the Alameda County Community Development Director or their designee prior to occupancy permits. At minimum, the Plan shall include the following: ▪ A sufficient buffer zone shall be implemented between the sensitive receptors and sources of odors ▪ Soiled bedding shall be removed and replaced with new bedding (e.g., straw, wood shavings, wood pellets, etc.) on a daily basis. ▪ Manure spills shall be cleaned upon occurrence. ▪ The moisture content of stockpiled manure shall be minimized to reduce the potential for release of odorous compounds during storage (e.g., use of a tarp to cover stockpiled manure). ▪ Dust suppression measures shall be implemented to prevent the release of odorous compound-carrying fugitive dust	LTS
AQ-5: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, could cumulatively contribute to air quality impacts in the Air Basin.	S	**AQ-5:** Implement Mitigation Measures AQ-2 and AQ-4.	LTS
BIOLOGICAL RESOURCES			
BIO-1: The proposed project could 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 US Fish and Wildlife Service.	S	**BIO-1.1:** Adequate measures shall be taken to avoid inadvertent take of bird nests of native species protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use. This shall be accomplished by taking the following steps: ▪ If tree removal and initial construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		construction. The proposed development area of the project site shall be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or curtailed for more than 7 days during the nesting season. ▪ If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), tree and vegetation removal, building demolition, and project construction may proceed with no restrictions. ▪ If bird nests are found, an adequate setback shall be established around the nest location and vegetation removal, grading, and other construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on nest location, species, and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the proposed development area on the project site. ▪ A report of findings shall be prepared by the qualified biologist and submitted for review and approval by the County prior to initiation of vegetation removal, building demolition, grading and other construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. Following approval by the County, tree removal, building demolition, and construction within the nest buffer zone may proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation

		(September 1 to January 31) and continues uninterrupted according to the above criteria.
		
		BIO-1.2: Adequate measures shall be taken to avoid inadvertent take of special-status bat species if present in trees within the proposed development area on the project site. This shall be accomplished by taking the following steps.
		▪ A qualified biologist shall visually inspect trees to be removed and buildings to be demolished for bat roosts within 7 days prior to their removal. The biologist shall look for signs of bats including sightings of live or dead bats, bat calls or squeaking, the smell of bats, bat droppings, grease stains or urine stains around openings in trees, or flies around such openings. Trees with multiple hollows, crevices, forked branches, woodpecker holes, or loose and flaking bark have the highest chance of occupation and shall be inspected the most carefully.
		▪ If signs of bats are detected, confirmation on presence or absence shall be determined by the qualified biologist, which may include night emergency or acoustic surveys.
		▪ Due to restrictions of the California Health Department, direct contact by workers with any bat is not allowed. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction.
		▪ If an active maternity roost is encountered during the maternity season (April 15 to August 31), the CDFW shall be contacted for direction on how to proceed and an appropriate exclusion zone established around the occupied tree or structure until young bats are old enough to leave the roost without jeopardy. The size of the buffer would take into account:
		  ▪ Proximity and noise level of project activities;
		  ▪ Distance and amount of vegetation or screening between the roost and construction activities; and	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		▪ Species-specific needs, if known, such as sensitivity to disturbance. **BIO-1.3:** Adequate measures shall be taken to avoid inadvertent take of San Francisco dusky-footed woodrats on the project site. This shall be accomplished by taking the following steps: ▪ A qualified biologist shall be retained to conduct a preconstruction survey for San Francisco dusky-footed woodrats, to determine whether any stick nests are present in the vicinity of proposed vegetation removal and development. The survey shall be performed within 30 days prior to initiation of vegetation removal and grading. ▪ If any nests are encountered within the limits of proposed grading and development, a trapping and relocation effort shall be conducted outside the breeding season (March 1 through August 31) to ensure any young are not inadvertently lost due to the destruction of the protective nest. ▪ Any nests within the construction zone shall be relocated to locations retained as undeveloped open space and individual woodrats released into their relocated nests. The trapping and relocation effort shall preferably be conducted within 7 days prior to grubbing and vegetation removal to prevent individual woodrats from moving back into the construction zone. **BIO-1.4:** Adequate measures shall be taken to avoid inadvertent take of Alameda whipsnake, California red-legged frog, and western pond turtle during construction. This shall be accomplished by taking the following steps: ▪ A qualified biologist shall be retained by the applicant to oversee construction and ensure that no inadvertent take of Alameda whipsnake, California red-legged frog, or western pond turtle occurs as a result of grading and other habitat modifications to the proposed development area on the project site.	

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

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		▪ Prior to any grading or grubbing, the qualified biologist shall conduct a preconstruction survey to confirm absence of any Alameda whipsnake, California red-legged frog, or western pond turtle in the vicinity of construction and areas to be graded. ▪ The qualified biologist shall train the on-site monitor (such as the construction foreman) in how to identify Alameda whipsnake, California red-legged frog, and western pond turtle, and procedures to follow as part of construction monitoring. The qualified biologist shall visit the site at least once a week during initial construction and confer with the trained on-site monitor for at least one month until the construction area is stabilized and to confirm that the exclusionary fencing installed to prevent access into areas of disturbance has been properly maintained. ▪ All construction workers shall be trained regarding the potential presence of Alameda whipsnake, California red-legged frog, and western pond turtle prior to initiating any construction, and instructed that these species are to be avoided, that the foreman must be notified if any individuals are encountered, and that construction shall be halted until the qualified biologist arrives and makes a determination on possible presence. ▪ The qualified biologist shall oversee initial vegetation clearing and installation of wildlife exclusionary fencing to prevent Alameda whipsnake, California red-legged frog or western pond turtle from entering the construction area. The wildlife exclusionary fencing material and design shall meet with latest standards called for by the USFWS and CDFW, and shall include one-way funnels to allow for snakes and other small wildlife to exit the fenced construction zone. The exclusionary fencing shall be maintained and remain in place for the duration of construction until the qualified biologist has determined that it is no longer needed. ▪ Vegetation clearing shall be performed by hand and all slash shall be removed from the construction zone to remove any protective cover that could attract snakes and other wildlife. Operation of grading equipment shall not occur until vegetative cover has been	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		completely removed from the fenced construction zone and the qualified biologist has performed a pre-grading survey to confirm absence of any Alameda whipsnake, California red-legged frog, or western pond turtle in the vicinity of construction and areas to be graded. ▪ During the construction phase of the project, the qualified biologist or trained on-site monitor shall check to ensure that the exclusionary fencing is intact. The fenced construction area shall be inspected by the qualified biologist or trained on-site monitor each morning and evening of construction activities for possible presence of Alameda whipsnake, California red-legged frog, or western pond turtle. This includes checking holes, under vehicles and under boards left on the ground. ▪ During construction, any holes or trenches greater than 6-inches shall be covered with plywood or similar non-heat conductive materials and ramp larger trenches that cannot be readily covered at end of each work day to allow escape of any animals. ▪ Use of monofilament plastic for erosion control or other practices shall be prohibited on the site to prevent possible entrainment. ▪ All food waste shall be removed daily from the site to avoid attracting predators. ▪ If any western pond turtle is encountered within the proposed development area, construction shall be halted until the qualified biologist relocates the individual to secure habitat along Cull Creek. ▪ If any Alameda whipsnake or California red-legged frog are found within the proposed development area, construction shall be halted until they disperse naturally, and the monitor shall immediately notify the qualified biologist in charge and representatives of the USFWS and CDFW. Construction shall not proceed until adequate measures are taken to prevent dispersal of any individuals into the construction zone, as directed by the USFWS and CDFW.	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		▪ Subsequent recommendations made by the USFWS and CDFW necessary to avoid take of Alameda whipsnake and/or California red-legged frog shall be followed. Only an agency-approved biologist is allowed to handle or otherwise direct movement of Alameda whipsnake or California red-legged frog, and all others shall not handle or otherwise harass the animal(s). The qualified biologist and the on-site monitor shall be aware of all terms and conditions set by USFWS and CDFW on the project, if that becomes necessary.	
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 Wildlife or US Fish and Wildlife Service.	LTS	N/A	N/A
BIO-3: The proposed project would not have a substantial or adverse effect on State or federally protected wetlands (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 could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	S	**BIO-4:** Measures shall be taken to prevent disruption of native wildlife movement opportunities and potential native wildlife nursery habitat. These shall include the following: ▪ Fencing which obstructs wildlife movement shall not cross the Cull Creek channel or form a barrier between the creek and the woodlands to the west of the proposed development area on the project site. ▪ Fencing to control and protect livestock shall be restricted outside the Cull Creek corridor away from the top of bank and shall allow for passage of wildlife around at least one side of the enclosed perimeter. ▪ New lighting shall be carefully designed and controlled to prevent unnecessary illumination of natural habitat on the site, particularly the Cull Creek corridor and undeveloped woodlands to the west of the proposed development area. Lighting shall be	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		restricted to building envelopes and the minimum level necessary to illuminate pathways, parking areas, and other outdoor areas. Lighting shall generally be kept low to the ground, directed downward, and shielded to prevent illumination into adjacent natural areas. Lighting from the Cafeteria/Mess Hall building shall be turned off after staff/employees leave the structure at the end of the day or evening, except the minimum necessary for security purposes. ▪ Dogs and cats shall be confined to the proposed development area or leashed and under voice control at all times to minimize harassment and loss of wildlife along the Cull Creek corridor and undeveloped woodlands to the west. ▪ All garbage, recycling, and composting shall be kept in closed containers and latched or locked to prevent wildlife from using the waste as a food source.	
BIO-5: 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-6: The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.	No Impact	N/A	N/A
BIO-7: The proposed project, in combination with past, present, or reasonably foreseeable projects, would not have a cumulative significant impact in regard to biological resources.	LTS	N/A	N/A
CULTURAL RESOURCES			
CULT-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.	No Impact	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
CULT-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.	S	**CULT-2:** If archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and the County and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the County for review and approval prior to the continuation of any on-site construction activity.	LTS
CULT-3: The proposed project would not disturb any human remains, including those interred outside of dedicated cemeteries.	S	**CULT-3:** In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The County and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.	LTS
CULT-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to cultural resource.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
GEOLOGY AND SOILS			
GEO-1: The proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides, mudslides, or other similar hazards.	LTS	N/A	N/A
GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.	LTS	N/A	N/A
GEO-3: The proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	LTS	N/A	N/A
GEO-4: The proposed project could be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), however would not create substantial direct or indirect risks to life or property.	LTS	N/A	N/A
GEO-5: The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	N/A	N/A
GEO-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	S	**GEO-6:** In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.	
GEO-7: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.	LTS	N/A	N/A
GREENHOUSE GAS EMISSIONS			
GHG-1: The proposed project would generate greenhouse gas emissions, either directly or indirectly, that result in a significant impact on the environment.	S	**GHG-1.1a:** The project applicant shall design and construct all new buildings to use all electric energy systems, meaning that electricity is the primary source of energy for water heating; mechanical; heating, ventilation, and air conditioning (HVAC) (i.e., space-heating); cooking; and clothes-drying. Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the County of Alameda Community Development Director or their designee, to verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the County shall verify implementation of the design requirements specified above. **GHG-1.1b:** The project applicant shall purchase 450 voluntary carbon credits. The project applicant shall provide proof of offset credit retirement on the relevant registry – including certificate numbers or a transaction ID that match the quantity purchased – along with a clearly identified purpose and the beneficiary of the retirement - prior to issuance of an occupancy permit for each development phase to the County.	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		Local Prioritization. The project applicant shall prioritize local (within the Northern California region) and in-state credits over national credits. Credits shall be third-party verified by a major registry recognized by the California Air Resources Board (CARB) such as Climate Action Reserve (CAR). If sufficient local and in-state credits are not available, the project applicant shall purchase CARB-conforming national credits registered with an approved registry Purchase of Voluntary Carbon Offsets. The project applicant shall purchase CARB-verified GHG credits to achieve the measure performance standards for each development phase. The project applicant may purchase GHG credits from a voluntary GHG credit provider that has an established protocol that requires projects generating GHG credits to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). Definitions for these terms are as follows. ▪ Real: Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").[1] ▪ Additional: GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration. ▪ Permanent: To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		emissions must be fully accounted for and compensated through the achievement of additional reductions. ▪ Quantifiable: The ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage. ▪ Verified: GHG reductions must result from activities that have been verified. Verification requires third-party review of monitoring data for a project to ensure the data are complete and accurate. ▪ Enforceable: The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and the legal instrument can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means. Please note that per this mitigation measure, only credits originating within the United States are allowed. GHG credits may be in the form of GHG offsets for prior reductions of GHG emissions verified through protocols or forecasted mitigation units for future committed GHG emissions meeting protocols. All credits shall be documented per protocols functionally equivalent in terms of stringency to CARB's protocol for offsets in the cap-and-trade program. <u>Prioritization of Emissions Reduction Commitments.</u> The project applicant shall identify GHG credits in geographies closest to the project site first and only go to larger geographies (i.e., California, United States) if adequate credits cannot be found in closer geographies, or the procurement of such credits would create an undue financial burden.	

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Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		The project applicant shall provide the following justification for not using credits in closer geographies in terms of either availability or cost prohibition. ▪ Lack of enough credits available in closer geographies (i.e., Northern California). ▪ Prohibitively costly credits in closer geographies defined as credits costing more than 300 percent the amount of the current costs of credits in the regulated CARB offset market. ▪ Documentation submitted supporting GHG credit proposals shall be prepared by individuals qualified in GHG credit development and verification and such individuals shall certify the following. ▪ Proposed credits meet the criteria in California Health and Safety Code Section 38562(d)(1) and (d)(2). ▪ Proposed credits meet the definitions for the criteria provided in this measure. ▪ The protocols used for the credits meet or exceed the standards for stringency used in CARB protocols for offsets under the California cap-and-trade system. **GHG-1.2:** Site plans submitted to the County shall identify parking stalls with electric vehicle (EV) capable charging stations consistent with the 2019 California Green Building Standards Code (CALGreen) voluntary Tier 2 nonresidential measures to provide four electric vehicle (EV) charging stations for the 15 proposed parking spaces, as seen on Table A5.106.5.3.2 of the 2019 CALGreen. Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the County of Alameda Community Development Director or their designee, to verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the County shall verify implementation of the design requirements specified above.	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
GHG-2: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	N/A
GHG-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to greenhouse gas emissions.	S	**GHG-3:** Implement Mitigation Measures GHG-1.1a, GHG-1.1b, and GHG-1.2.	LTS
HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plans.	LTS	N/A	N/A
HAZ-2: The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	LTS	N/A	N/A
HAZ-3: The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to hazards and hazardous materials.	LTS	N/A	N/A
HYDROLOGY AND WATER QUALTY			
HYD-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	N/A	N/A
HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	N/A	N/A
HYD-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.			
HYD-4: The proposed site is not located in a 100-year floodplain, dam inundation, tsunami, or seiche zone and would not release pollutants due to inundation from a flood hazard.	No Impact	N/A	N/A
HYD-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	N/A	N/A
HYD-6: Implementation of the proposed project would not result in impacts relating to hydrology and water quality that are cumulatively considerable when viewed in connection with the effects of past, current, and reasonably foreseeable projects.	LTS	N/A	N/A
LAND USE AND PLANNING			
LUP-1: The proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	N/A	N/A
LUP-2: The proposed project would/would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to land use and planning.	LTS	N/A	N/A
NOISE			
NOI-1: Implementation of the proposed project would not result in the generation of temporary or permanent	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.			
NOI-2: Implementation of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.	LTS	N/A	N/A
NOI-3: Implementation of the proposed project would not expose people residing or working within two miles of a private airstrip or airport to excessive noise levels.	No Impact	N/A	N/A
NOI-4: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to noise or vibration.	LTS	N/A	N/A
PUBLIC SERVICES			
PS-1: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.	LTS	N/A	N/A
PS-2: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.	LTS	N/A	N/A
PS-3: The proposed project would not combination with past, present, or reasonably foreseeable projects, result	LTS	N/A	N/A

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Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
in a significant cumulative impact with respect to fire protection or police protection services.			
TRANSPORTATION			
TRAN-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	N/A	N/A
TRAN-2: The proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	LTS	N/A	N/A
TRAN-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A
TRAN-4: The proposed project would not result in inadequate emergency access.	LTS	N/A	N/A
TRAN-5: The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to transportation.	LTS	N/A	N/A
TRIBAL CULTURAL RESOURCES			
TCR-1: The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: (a) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or (b) a resource determined by the lead agency, in its discretion and supported by substantial	S	**TCR-1.1:** Implement Mitigation Measure CULT-2: CULT-2**:** If archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and the County and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the County for review and approval prior to the continuation	LTS

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Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency will consider the significance to a California Native American tribe.		of any on-site construction activity. **TCR-1.2:** Implement Mitigation Measure CULT-3: CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The County and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.	
TCR-2: The proposed project, in combination with past, present, or reasonably foreseeable projects, would not result in a significant cumulative impact with respect to tribal cultural resources.	LTS	N/A	N/A
UTILITIES AND SERVICE SYSTEMS			
UTIL-1: The proposed project would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A
UTIL-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	LTS	N/A	N/A
UTIL-3: The proposed project would not require or result in the construction of new wastewater facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A

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Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
UTIL-4: Implementation of the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A
UTIL-5: Implementation of the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	N/A	N/A
UTIL-6: Implementation of the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	N/A	N/A
UTIL-7: The proposed project, in combination with past, present, or reasonably foreseeable projects, would not result in a significant cumulative impact with respect to utilities and service systems.	LTS	N/A	N/A
WILDFIRE			
WF-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	LTS	N/A	N/A
WF-2: The proposed project could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	S	**WF-2:** Prior to issuance of building permits, the applicant shall submit revised landscape plans as well as a vegetation management plan to the Alameda County Fire Department for review and approval. The project site plan shall be revised, if necessary, to conform to the revised landscaping plan and vegetation management plan.	LTS
WF-3: The proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	S	**WF-3a:** Implement Mitigation Measure WF-2. **WF-3b:** The proposed Fire Safety & Emergency Response Guide shall include education information regarding the wildfire risks associated with vehicle fires. In addition, signage shall be posted at or near the entrance to the project driveway to inform occupants of entering	LTS

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Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		vehicles of current fire danger levels and the dangers of roadway sparks.	
WF-4: The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	LTS	N/A	N/A
WF-5: The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to wildfire.	LTS	N/A	N/A

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2. Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Chapter 14 California Code of Regulations, Section 15378[a], *Project*, the Outdoor Project Camp is considered a "project" subject to environmental review as its approval 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 implementation of the 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 Chapter 4, *Environmental Evaluation*, and each subchapter (Chapters 4.1 through 4.15). The County of Alameda (County) is the lead agency for the proposed project. This assessment is intended to inform the County's decision-makers, other responsible agencies, and the public-at-large of the nature of the proposed project and its effect on the environment.

2.1 PROPOSED PROJECT

The Mosaic Project, the project applicant, proposes The Outdoor Project Camp ("proposed project") to develop an outdoor recreation facility in unincorporated Alameda County that would consist of demolishing an existing 7,500-square-foot garage, improving trails and miscellaneous dirt or gravel roads, and constructing components critical to the sites purpose. These components include twelve 400 square foot camping cabins, a two-story 40-foot high 8,500-square-foot central meeting and dining hall, a 1,025-square-foot restroom/shower building, and a two-story 2,600-square-foot dwelling. A 1,200 square foot caretaker's unit would remain from existing conditions. The project also includes water storage and treatment tanks, along with sewer infrastructure that includes an on-site wastewater system with a leach field dispersal system. The proposed project is described in more detail in Chapter 3, *Project Description*, of this Draft EIR.

2.2 EIR SCOPE

This Draft EIR is a project-level EIR that identifies and analyzes site specific potential impacts of the project. As a project-level EIR or project EIR, the environmental analysis primarily focuses on the changes in the environment that would result from the development of the proposed project. This EIR examines the specific short-term impacts (construction) and long-term impacts (operation) that would occur as a result of project approval and construction. For a complete listing of environmental topics covered in this Draft EIR, see Chapter 4, *Environmental Analysis*.

2.3 ENVIRONMENTAL REVIEW PROCESS

2.3.1 DRAFT EIR

Pursuant to CEQA Section 21080(d)[1] and CEQA Guidelines Section 15063,[2] the County determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with CEQA Section 21080.4, the County circulated the Notice of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research State Clearinghouse and interested agencies and persons on November 19, 2021, for a 30-day review period. A public Scoping Meeting was held via remote broadcast on November 30, 2021, at 10:30 a.m. with the meeting-specific link to the Zoom meeting included on the project webpage on the County of Alameda's website. The NOP and scoping process solicited comments from responsible and trustee agencies, as well as interested parties regarding the scope of the Draft EIR. Appendix A of this Draft EIR contains the NOP, which includes an Initial Study for the project, as well as the comments received by the County in response to the NOP.

The scope of this EIR was established by the County of Alameda through the EIR scoping process and includes an analysis of both the proposed project's impacts and cumulative impacts in the following issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Transportation
- Utilities and Service Systems
- CEQA- Mandated Assessment Conclusions:
  - Impacts Found Not To Be Significant
  - Significant Unavoidable Impacts
  - Growth-Inducing Impacts
  - Significant Irreversible Changes

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period starting on October 5, 2022 and ending on November 21, 2022. During the comment period, the public is invited to submit written comments vial mail or e-mails on the Draft EIR to the County of Alameda Planning Department. Written comments should be submitted to:

Sonia Urzua, Senior Planner
County of Alameda, Planning Department
224 W. Winton Avenue #111, Hayward, CA 94544
Phone: (510) 670-5437
Email: sonia.urzua@acgov.org

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.
[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

Written and/or verbal comments on the Draft EIR will also be accepted at the West County Board of Zoning Adjustments (WCZBA) hearing, during the public comment period, which will be legally noticed and is tentatively scheduled for November 9, 2022 via Zoom Webinar.

2.3.2 FINAL EIR

Upon completion of the 45-day review period for the Draft EIR, the County of Alameda will review all comments received and prepare written responses for each comment on the adequacy of the Draft EIR. A Final EIR will then be prepared, which contains all of the comments received, responses to comments raising environmental issues, and any changes to the Draft EIR. The Final EIR will then be presented to the County of Alameda for 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 and the date of the public hearing before the County.

All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to certification of the EIR. The WCBZA will make findings regarding the extent and nature of the impacts as presented in the EIR. The EIR will need to be certified as having been prepared in compliance with CEQA by the Planning Commission prior to making a decision to approve or deny the proposed project. Public input is encouraged at all public hearings before the County.

After the WCBZA certifies the Final EIR, it may then consider action on the proposed project. If approved, the WCBZA will adopt and incorporate into the project all feasible mitigation measures identified in the EIR and may also require other feasible mitigation measures.

In some cases, the WCBZA may find that certain mitigation measures are outside the jurisdiction of the County to implement, or that there are no feasible mitigation measures for a given significant impact. In that case, the WCBZA would have to adopt a statement of overriding considerations that determines that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable, significant effects on the environment.

2.3.3 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 mitigation 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 and available to the public prior to certification of this EIR.

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3. *Project Description*

The Mosaic Project, the project applicant, proposes The Outdoor Project Camp (referred to herein as the "proposed project"), an outdoor recreation facility in unincorporated Alameda County. This facility would provide a site in the San Francisco Bay Area for The Mosaic Project's primary program, its Outdoor Project. The Mosaic Project's mission with The Outdoor Project Camp is to work toward a peaceful future by uniting children of diverse backgrounds, providing them with community building skills, and empowering them to become peacemakers through a multi-day nature-oriented experience. The proposed project would consist of demolishing an existing 7,500-square-foot garage, improving hiking trails and miscellaneous dirt or gravel roads, and constructing components critical to the proposed project's mission. These components include twelve 400-square-foot camping cabins; a two-story, 40-foot-high, 8,500-square-foot central meeting and dining hall; a 1,025-square-foot restroom/shower building; and a two-story 2,600-square-foot staff housing building. A 1,200-square-foot caretaker's unit would remain from existing conditions. The project also includes water storage and treatment tanks, along with sewer infrastructure that includes an on-site septic tank with a leach field dispersal system. The proposed project, including all recreational facilities and caretaker residences, would encompass an area totaling 2 acres. Water for the proposed project would be pumped from on-site groundwater wells to an above-ground treatment system for contaminant removal. Two on-site wells would remain in use: one as the primary water well, and the other as the backup well. These two wells would be located nearby the cabins and kitchen, as shown on Figure 3-4, *Proposed Project Site Plan*.

This chapter provides a detailed description of the proposed project, including the location, setting, site characteristics, project objectives, principal features, and approximate construction phasing, as well as required permits and approvals. These activities and approvals collectively constitute a "project" under the California Environmental Quality Act (CEQA).

3.1 PROJECT SITE LOCATION AND CHARACTERISTICS

The proposed project is located on a 37-acre site at 17015 Cull Canyon Road near the unincorporated community of Castro Valley, in Alameda County, California, approximately three miles north of Interstate 580 (I- 580). The site is identified by the Alameda County Assessor's Office as Assessor's Parcel Number (APN) 085-1200-01-16.[1] The site is bounded by Cull Canyon Road to the east, Twining Vine Winery to the north, Cull Canyon Regional Recreational Area to the west, and residential property to the south. Figure 3-1, *Regional Location*, shows the location of the project site.

Views from Cull Canyon Road towards the project site are generally obstructed by vegetation and existing trees along the roadway. The property line extends to the edge of the two-lane Cull Canyon Road with

[1] Alameda County, 2020, Assessor's Parcel Number, available online at http://gis.acgov.org/Html5Viewer/index.html?viewer=parcel_viewer, accessed January 20, 2021.

minimal shoulder or bike and pedestrian path between the roadway and property. The area of the site with existing structures is mostly flat and generally bisected by a bridge over Cull Canyon Creek. Medium to large trees, ranging from 30 to 100 years old, are scattered throughout the property, interspersed with areas dominated by grasses or bare ground. Tree species in this area include sycamore, black walnut, various oak species, and English walnut, among others. In addition, several redwoods are located near the location of the proposed leach field. An existing internal concrete roadway is located on the project site, leading from the entrance of the property, over the bridge, and to the existing concrete building. The internal roadway meanders at a slight upward slope after the bridge until it reaches the concrete building. Behind the concrete building, the property begins a sharp inclined slope estimated at 20 to 30 percent. .

Existing structures on the 37-acre parcel include a residential home (the 1,200-square-foot caretaker's unit), a barn, a bridge, several wells, a septic system, an outdoor barbeque and spit, and a large concrete building with a slab foundation. Cull Creek runs through the eastern portion of the parcel. Buildable land on the parcel consists of approximately 7.8 acres.

3.1.1 REGIONAL LOCATION AND ACCESS

As shown on Figure 3-1, *Regional Location*, the proposed project is located in unincorporated Alameda County. The project site is accessible via Cull Canyon Road from the east by Interstate-680 at the Crow Canyon Road exit and from the west by Interstate 580 at the Grove Way exit. The site is not served by public transportation.

3.1.2 SURROUNDING LAND USES

Figure 3-2, *Local Context*, shows the immediate vicinity of the project site. As shown in this figure the project site is within a largely undeveloped area. Residential land uses are located east, south, and west of the project site; the Twining Vine Winery and Event Center is located to the north; and East Bay Regional Parkland is adjacent to the residential properties located along the western boundary. Within the Eastbay Regional Parkland, and bordering the project site to the west, is the Juan Bautista de Anza Historic Trail that stretches from the San Francisco Bay Area to Nogales, Arizona.[2]

3.1.3 EXISTING SITE CONDITIONS

Elevation of the project site ranges from 500 to 900 feet above mean sea level, and slopes gradually down to the east towards Cull Creek.

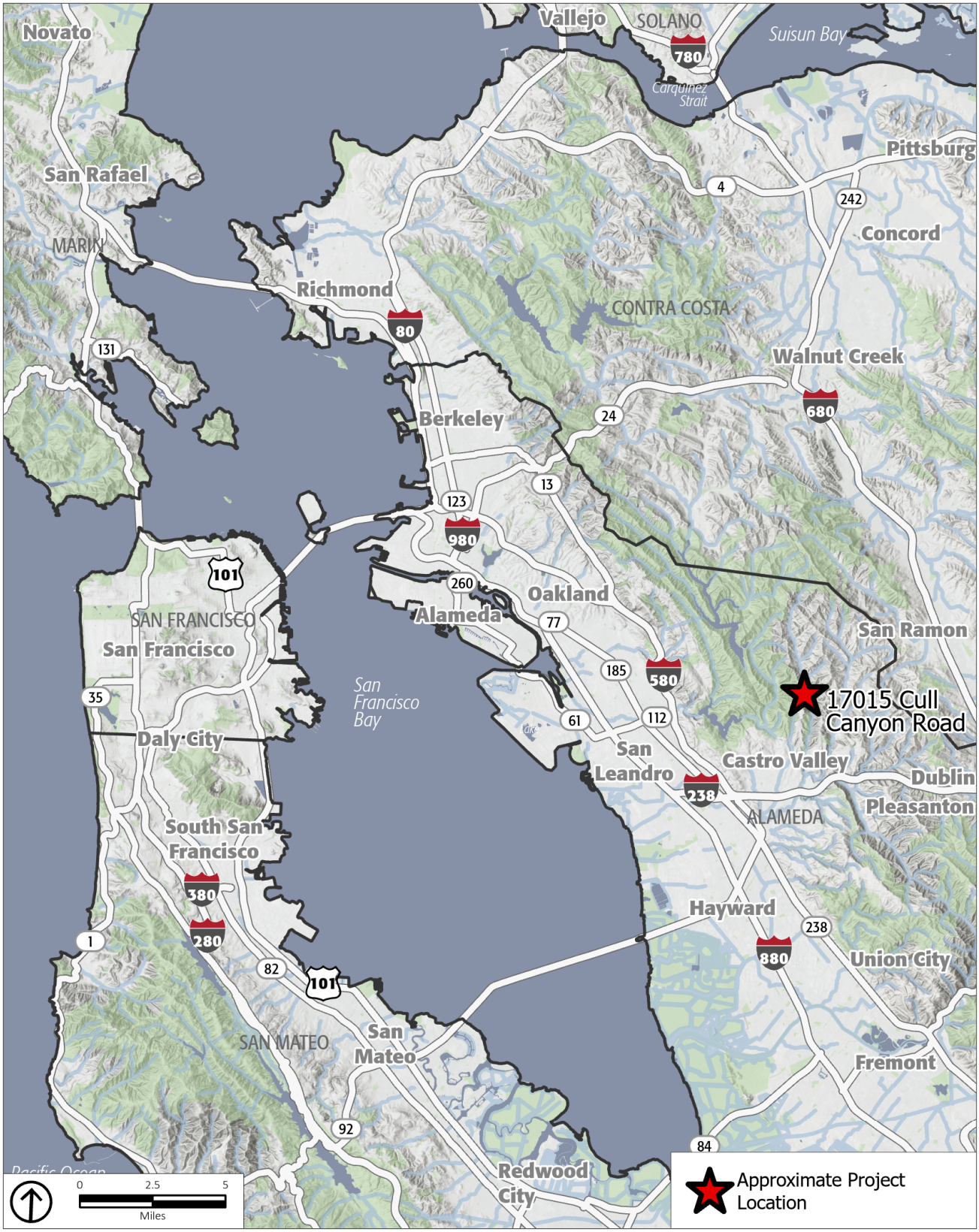
The project site contains areas both developed and heavily vegetated. On the eastern portion of the site, Cull Creek runs north to south through the property, generally parallel and west of Cull Canyon Road. Existing structures on the property include a 1,200-square-foot mobile home, a 970-square-foot barn, and a paved parking area located adjacent to Cull Canyon Road. An existing 14-foot-wide bridge spans Cull Canyon Creek and leads to a developed area that includes a large 7,500-square-foot garage building, a

[2] National Park Service, 2020, Juan Bautista De Anza Trail, available online at https://www.nps.gov/juba/index.htm, accessed January 20, 2021.

paved patio, and driveways with drainage swales. There are large, semi-flat, open areas adjacent to the garage. The remainder of the site consists of steep bay and oak woodlands on an east-facing slope, with minor drainages.

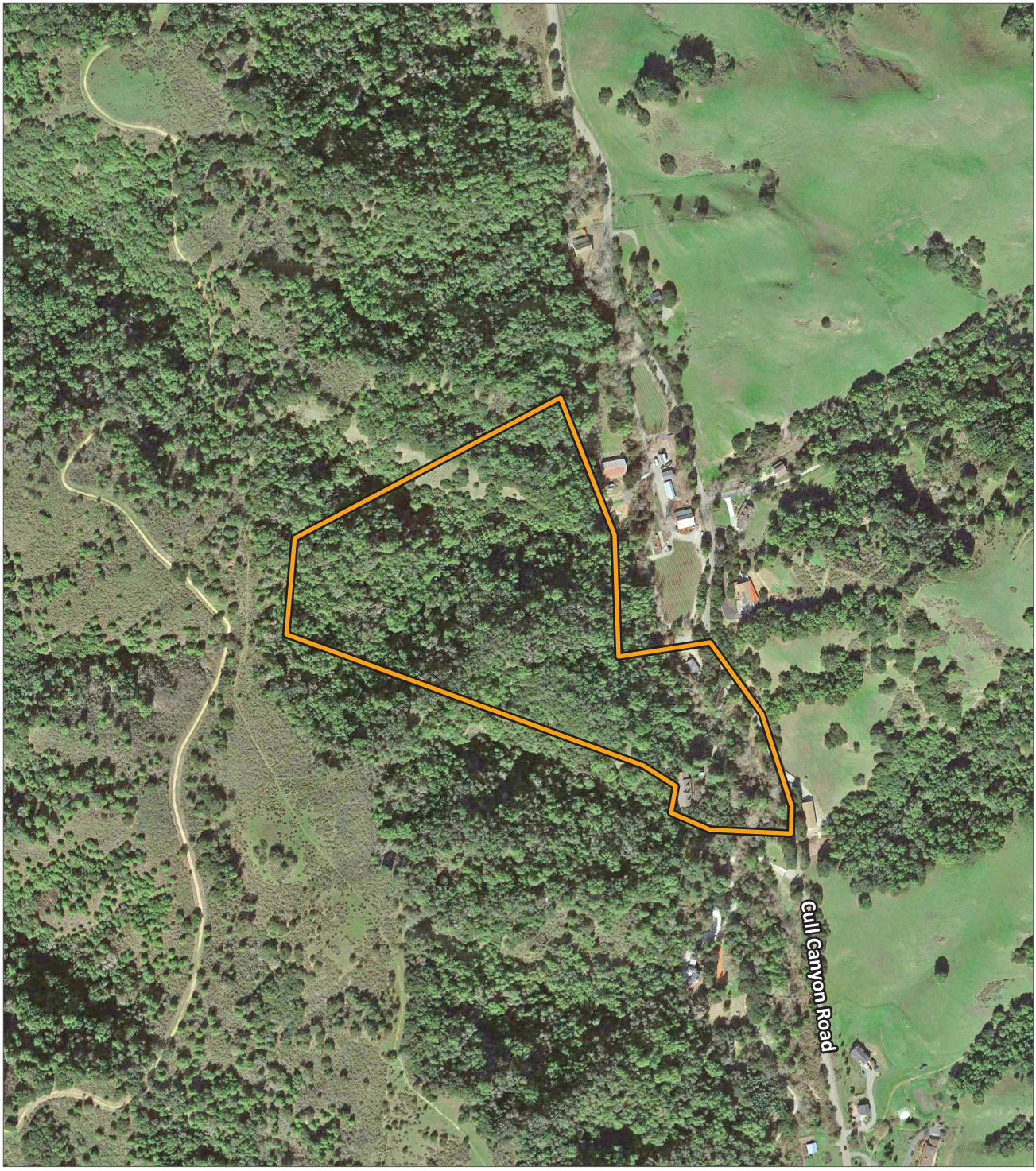
Prior County approvals involving the site include the following:

- February 17, 1993: Variance V-10452, that approved a boundary adjustment resulting in a property containing 37 acres where 100 acres is normally the minimum required.
- December 18, 1996: Conditional Use Permit C-6930 and Variance V-10880, that approved occupancy of a mobile home by an agricultural caretaker on a property containing 37 acres where 100 acres is the minimum in an "A" (Agricultural) District.
- January 26, 2000: Conditional Use Permit C-7540, and Variance V-11293, to allow continued occupancy of a mobile home by an agricultural caretaker on a property containing 37 acres in area where 100 acres is the minimum building site area required in an "A" (Agricultural) District.



Source: Esri, 2021; PlaceWorks, 2021.

Figure 3-1
Regional Location



Source: Google Earth, 2021. PlaceWorks, 2021.

0 700
Scale (Feet)

Approximate Project Site Boundary

Figure 3-2
Local Context

3.1.4 GENERAL PLAN LAND USE DESIGNATION AND ZONING

The project site is within the Castro Valley General Plan 2012 area where it is designated Resource Management. The Resource Management designation permits agricultural uses, recreational uses, habitat protection, watershed management, public and quasi-public uses, areas typically unsuitable for human occupation due to public health and safety hazards such as earthquake faults, floodways, unstable soils, or areas containing wildlife habitat and other environmentally sensitive features, secondary residential units, active sand and gravel and other quarries, reclaimed quarry lakes, and similar and compatible uses.[3] The property is also subject to the provisions of Measure D of the East County Area Plan which established the Urban Growth Boundary that also applies to the Castro Valley Canyonlands.

The project site is located in the Agriculture (A) zoning district of Alameda County. This zoning district is established for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.[4] Permitted uses include crop, vine, or tree farm, plant nursery, apiary, raising or keeping of poultry or other similar animals, winery microbrewery or olive mill with visitor center, public or private riding or hiking trails, boarding stables and riding academics. Other uses, such as outdoor recreation facility , animal hospital, kennels, public or private hunting of wildlife or fishing, and public or private hunting clubs and accessory structures, radio and television transmission facilities, and administrative support and service facilities of a public recreation district are allowed with a Conditional Use Permit.

3.2 PROJECT OBJECTIVES

The project applicant has developed the following project objectives:

- Provide state-of-the-art experiential educational programs.
- Develop a project focused site within 30 miles of the majority of the partner elementary schools.
- Provide chickens and goats as a learning experience for the youth in the program as well as natural maintenance of the property.
- Provide an organic garden for the site and program. Produce from the garden would be used in student meals and sold to the community. Students would learn about the history of cultivation in the area and the growing of produce.
- Provide improved pedestrian trail and site maintenance. Dirt roads and trails exist on the property and extend within the bay/oak woodland habitat that covers the slopes on the western side of the project

[3] Alameda County, 2012, *Castro Valley General Plan*, Appendix A Measure D Excerpts Pertaining to the Castro Valley Canyonlands, page A-2.

[4] Alameda County, 2020, Municipal Code, Section 17.06.010 – Agricultural districts – Intent, https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.06ADI_17.06.030PEUS, accessed February 1, 2020.

site. These existing roads/trails would be repurposed to serve as a recreational pedestrian trail system, with undergrowth maintained by the goats housed on the property.

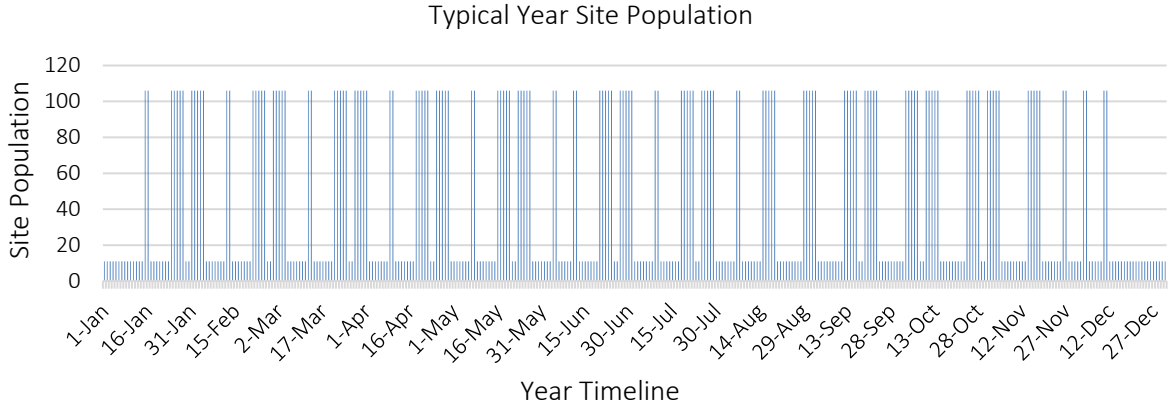
- Provide a caretaker's residence to watch over the facilities and animals when not in session.
- Meet the development standards of the Alameda County Castro Valley Jurisdiction, including fire access, storm water management, and site development restrictions.
- Provide parking to meet Alameda County's standards.
- Replace existing utilities to accommodate the proposed project including a small private water system and expanded private wastewater system.
- Provide a greywater irrigation system that can be used as a test project for Alameda County Environmental Health.

3.3 PROPOSED PROJECT

The Outdoor Project Camp would facilitate several classes of 4th- or 5th-grade students, approximately 75-95 students total (not to exceed 95), who will be transported by bus to the project site from their schools for a five-day, four-night outdoor recreation program in nature. Students would typically arrive on Monday morning and depart on Friday afternoon. The Outdoor Project Camp would initially operate seasonally during the school year with six camp sessions in the fall (September to October) and six camp sessions in the spring (April to May). The programs would be spaced out so that there would never be more than two consecutive five-day, four-night programs. The goal would be to eventually operate year-round, including summer sessions and occasional weekend programs. Under the year-round schedule, weekend programs would also never fall next to a weekday program. This would allow for the following:

- 18 five-day/four-night sessions (10 in the winter/spring and 8 in the fall)
- Five (5) five-day/four-night summer sessions
- 12 weekend programs

The below graph illustrates a typical calendar year schedule of programs.



3.3.1 PROPOSED SITE IMPROVEMENTS

The proposed project would include the construction and operation of an outdoor recreation facility consisting of cabins, a meeting and dining hall, a restroom and shower building, a staff house, a caretaker's unit, agricultural activities, a garden, and trails, with associated infrastructure, amenities, septic and leach field areas, parking, and vehicular circulation. Figure 3-3, *Existing Site Plan*, shows the existing conditions on the site and identifies features to be demolished or removed. Figure 3-4, *Proposed Project Site Plan*, shows the conceptual site plan for the proposed project. The existing project site includes roughly 0.6 acres of developed area on the 37-acre site, including existing buildings and impervious surfaces; the proposed project would develop approximately 2 acres of land, including within the existing developed area, for a net increased developed area of 1.4 acres. The remaining 35 acres of the project site would remain undeveloped, aside for existing trails that would be maintained. The buildout projections for the proposed new buildings are summarized in Table 3-1, *Proposed Project Buildout by Land Us*e, and are described below. Figures 3-8 through 3-13 include the building layouts and elevation drawings.

3.3.1.1 DEMOLITION OF GARAGE

The existing 7,500-square-foot garage building on the southwestern portion of the project site was determined to be out of compliance with current code regulations after review by a structural engineer. Due to the high cost to bring the building up to code it was decided to remove the existing structure as part of the proposed project. Demolition of the existing garage will require a Demolition Permit from Alameda County. As much as possible, materials from the demolition will be reused on site.

3.3.1.2 CAMPING CABINS

Twelve 400-square-foot non-permanent camping cabins are proposed to be placed within the footprint of the existing garage building on the southwestern portion of the site. These cabins, shown on Figure 3-5, would be simple, light-footprint construction with access from a 20-foot-wide fire road in compliance with Section 2327, *Camping Cabins*, of the California Code of Regulations (CCR) Title 25, Division 1, Chapter 2.2.[5]

3.3.1.3 CENTRAL MEETING AND DINING HALL

The proposed central meeting and dining hall (Figure 3-6) would consist of an 8,500-square-foot multi-purpose building and would be constructed south of the cabins on the southern portion of the project site. It would be used for indoor activities and would contain a medic room, kitchen, pantry, dining area, meeting space, and laundry room, as well as restrooms, showers, and offices.

[5] West Law, 2021, California Code of Regulations, available online at https://govt.westlaw.com/calregs/Document/IA1D5D8C082C911E2BD79AA7206D382EB?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default), accessed January 20, 2021.

3.3.1.4 COUNSEL RING

A gathering space with benches and a large outdoor natural gas/propane fire pit would be located within close proximity to the multi-use building. The camps would meet at this space as a gathering spot, for group presentations and singing. The Counsel Ring would be shared for one hour three nights a week and occasionally to start the day.

3.3.1.5 RESTROOM AND SHOWER BUILDING

A 1,025-square-foot restroom and shower building would be constructed just north of the camping cabins on the western portion of the project site.

3.3.1.6 STAFF HOUSE

A 2,600-square-foot staff house, or "family" dwelling (Figure 3-7), would be constructed to the north of the cabins on the western portion of the project site to serve as the project staff's permanent home.

3.3.1.7 CARETAKER'S UNIT

The existing 1,200-square-foot residence on the northern portion of the project site adjacent to Cull Canyon Road would remain unaltered as a caretaker's dwelling.

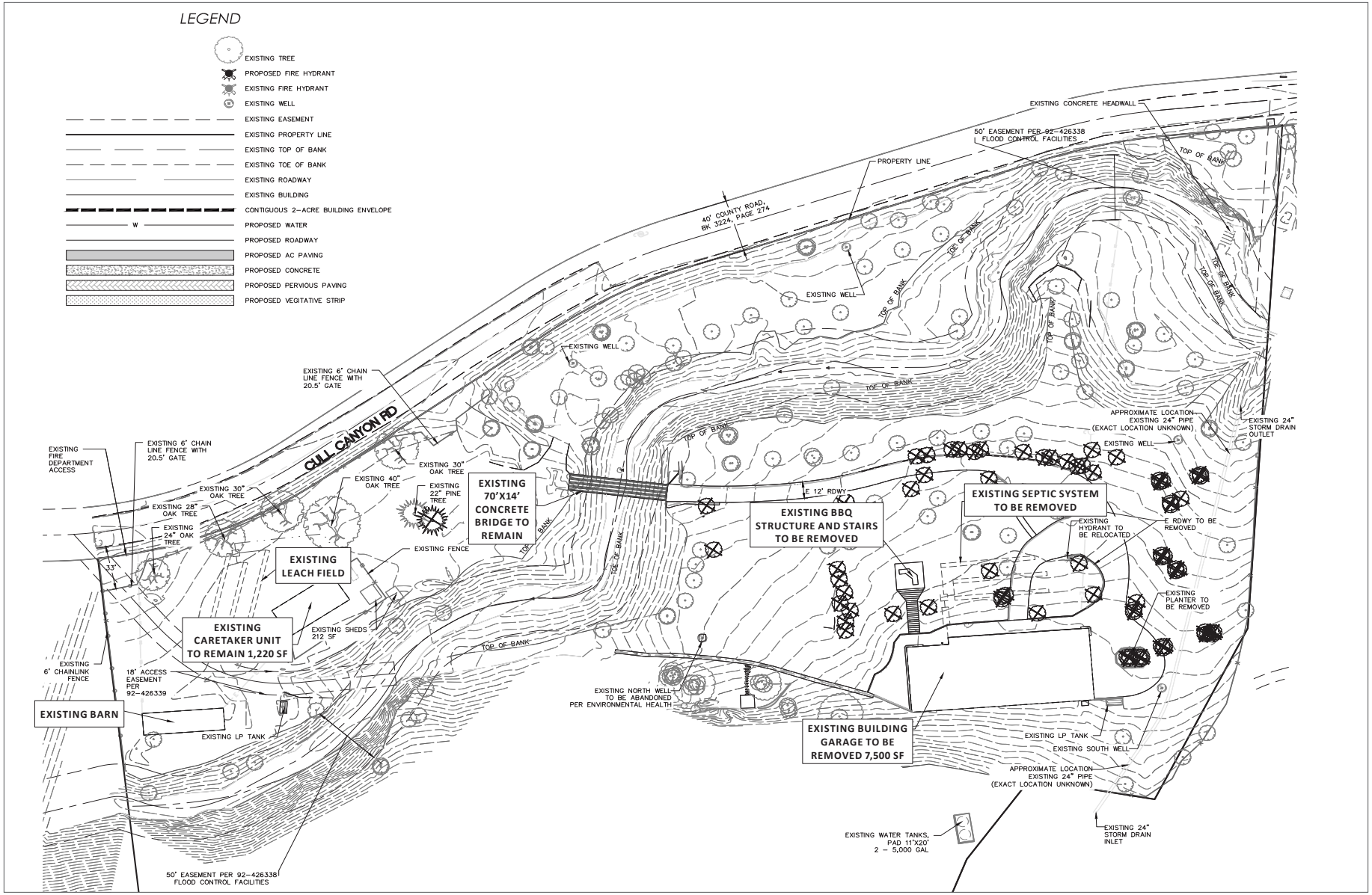
3.3.1.8 BRIDGE IMPROVEMENTS

The Alameda County Fire Department has noted that the existing bridge may remain at its current width as a single lane access per Title 14. Fire Department regulations would be maintained without construction within Cull Canyon Creek as discussed with the Alameda County Fire Department.

3.3.1.9 AGRICULTURAL AND FARMING ACTIVITIES

Farm animals consisting of up to five pigmy goats and forty chickens, would be kept on-site with a proposed yard on the northern portion of the project site adjacent to Cull Canyon Road. The animals would be used for natural property maintenance, food, and as an educational experience for the campers. The animals would graze on the property with the main purpose of understory vegetation maintenance. An additional goal of the agricultural and farming activities is for The Mosaic Project to earn income to support its activities from selling goat's milk, eggs, and vegetables, as well as from renting out the goats for grazing for fuel reduction and fire abatement.

The proposed project would incorporate an organic garden. Produce grown from the garden would be used in student meals and sold to the community. Through gardening activities, students would learn about the growing of produce. Operational farming equipment would be handheld and would not include large machinery such as tractors or off-road vehicles.



Source: NorthStar, 2022.

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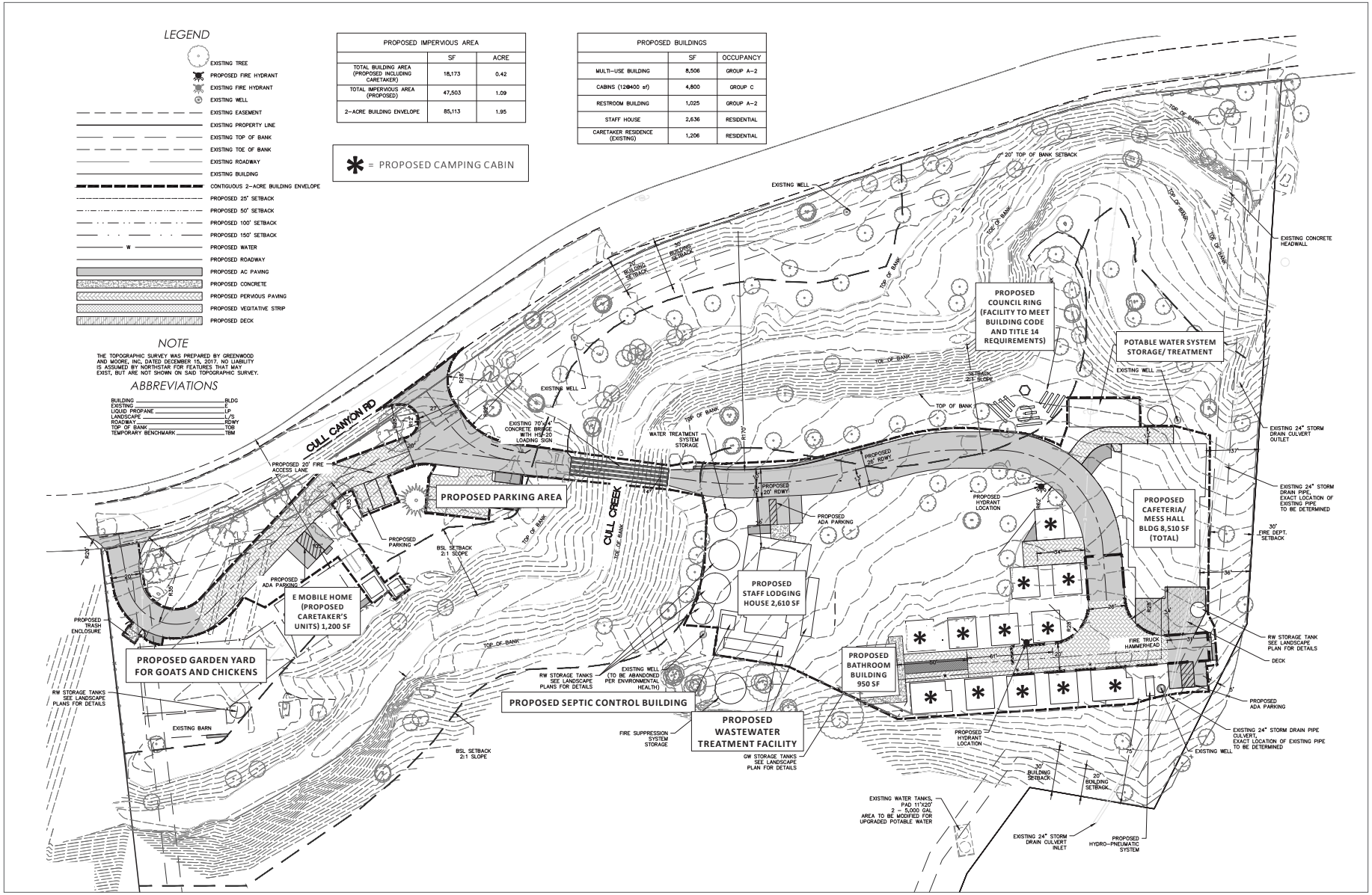
Scale (Feet)

Figure 3-3
Existing Site Plan



Source: NorthStar, 2022.

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Scale (Feet)

Figure 3-4
Proposed Project Site Plan

Source: NorthStar, 2021.

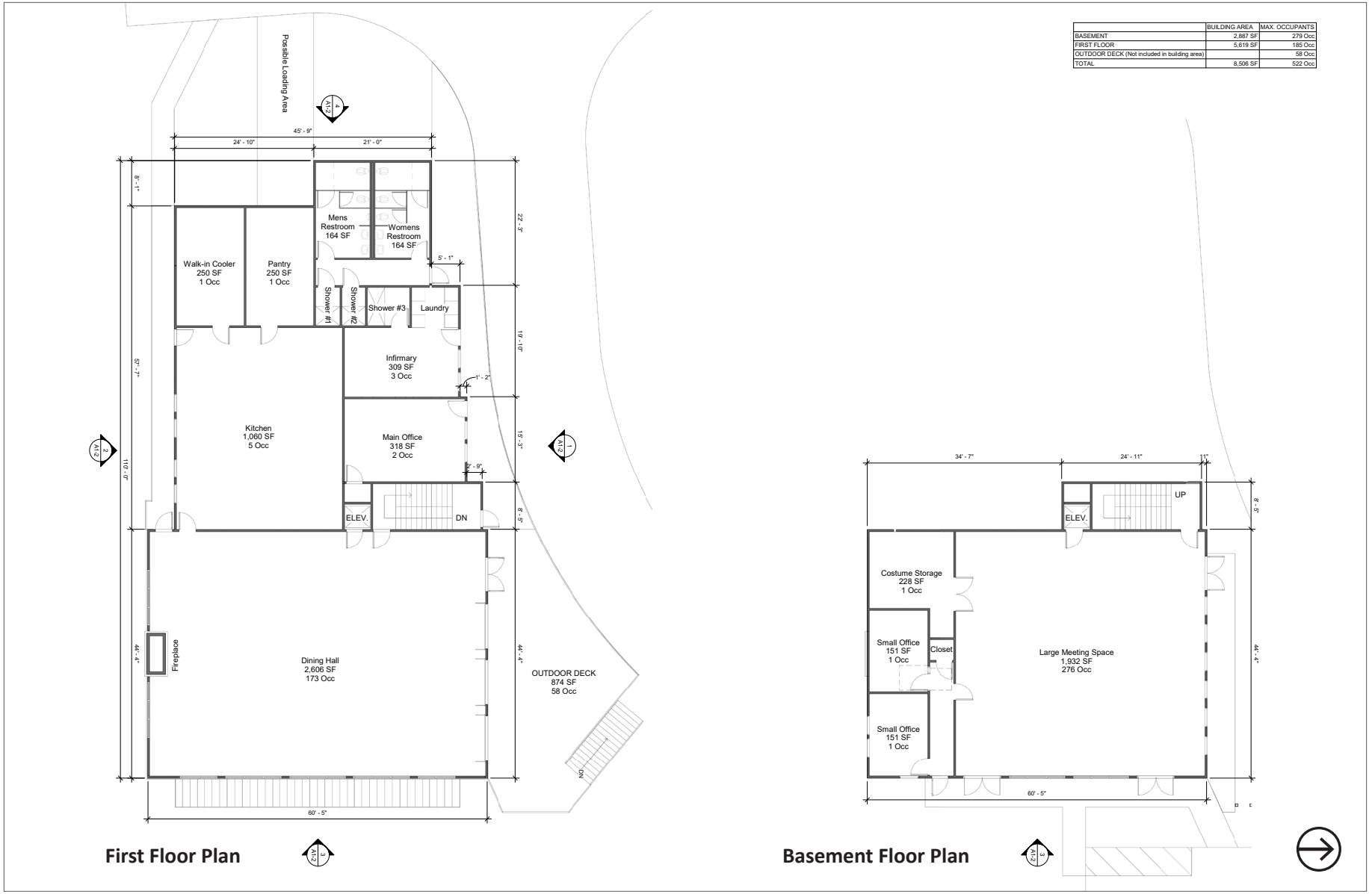
Figure 3-5
Camping Cabins

Source: NorthStar, 2021.

Figure 3-6
Central Meeting & Dining Hall

Source: NorthStar Engineers, 2021.

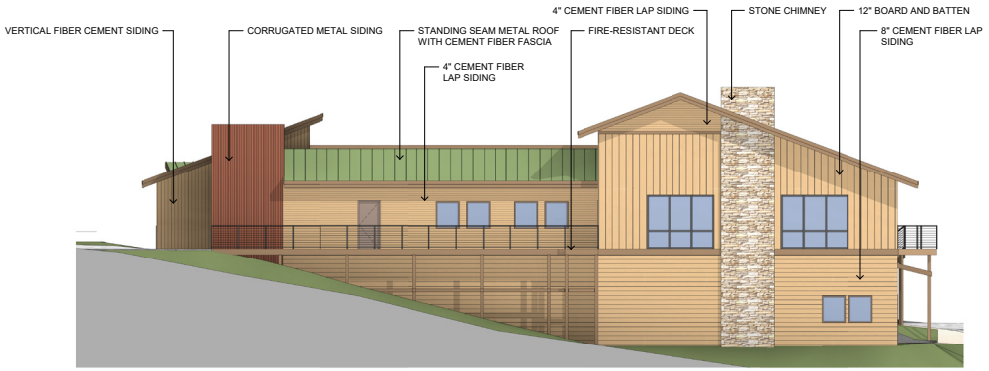
Figure 3-7
Staff House



Source: NorthStar, 2021.

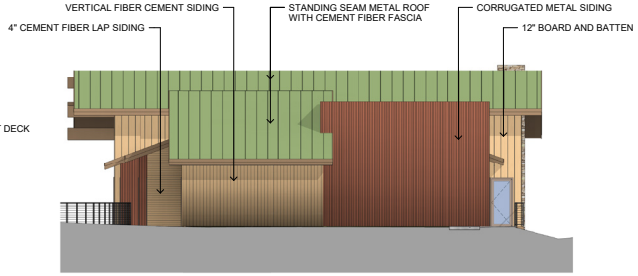
Figure 3-8
Main Building - Floor Plans

Main Building - North Elevation



Main Building - South Elevation

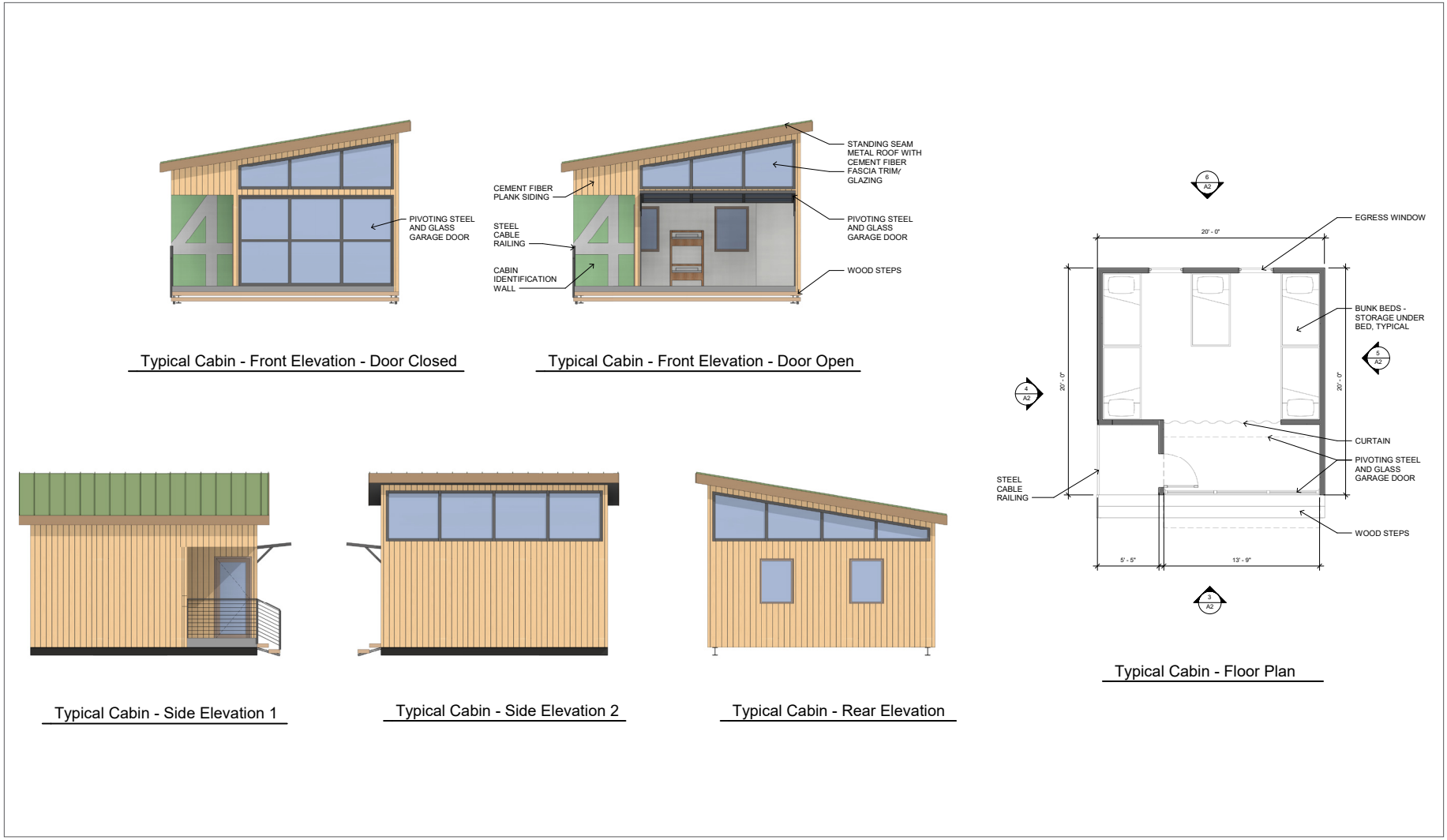
Main Building - East Elevation



Main Building - West Elevation

Source: NorthStar, 2021.

Figure 3-9
Main Building - Elevations

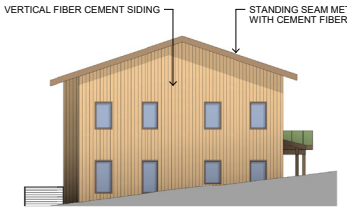


Source: NorthStar, 2021.

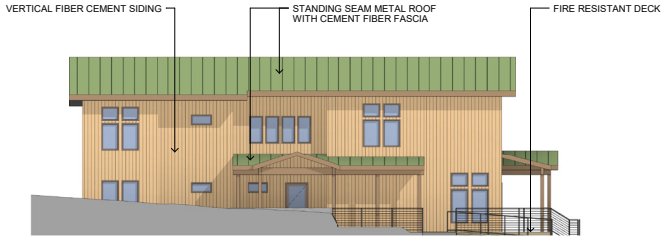
Figure 3-10
Typical Cabin - Floor Plan and Elevations

Staff Housing - East Elevation

Staff Housing - North Elevation

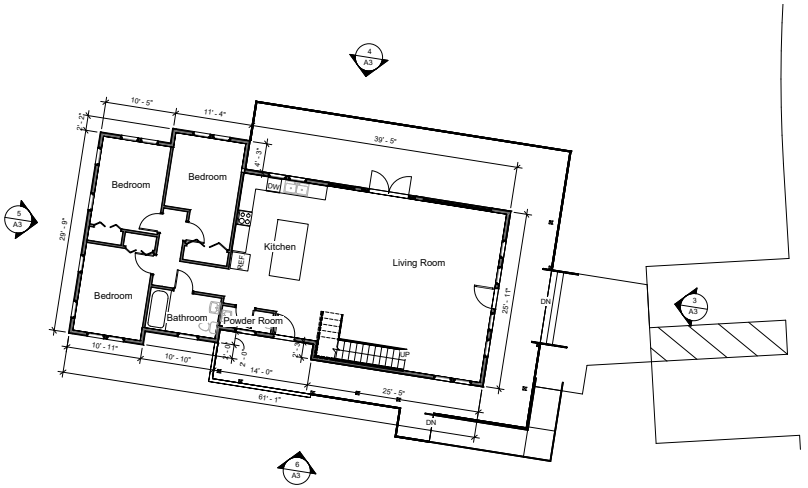


Staff Housing - West Elevation



Staff Housing - South Elevation

Staff Housing - Second Floor Plan

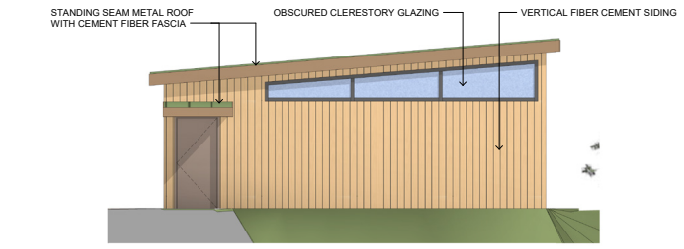


Staff Housing - First Floor Plan

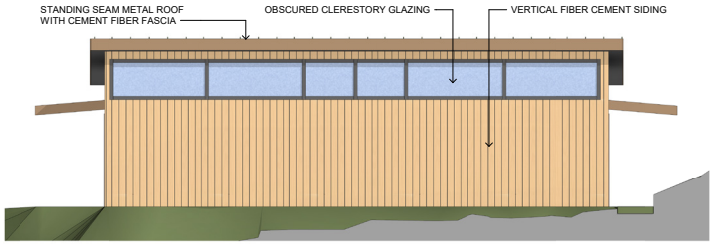
Source: NorthStar, 2021.

Figure 3-11

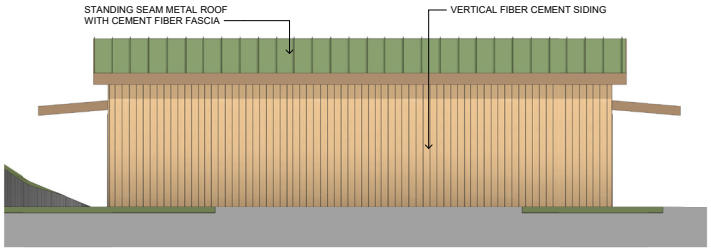
Staff Housing - Floor Plans and Elevations



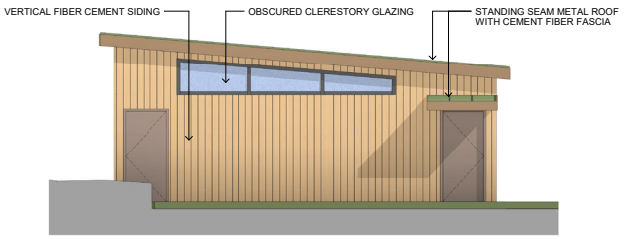
Restroom Building - East Elevation



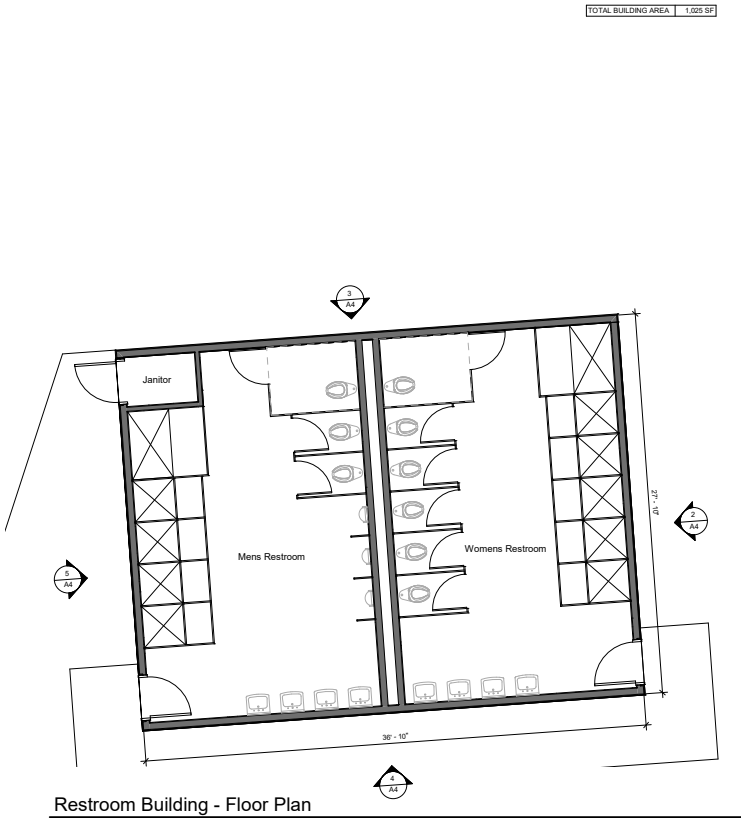
Restroom Building - North Elevation



Restroom Building - South Elevation



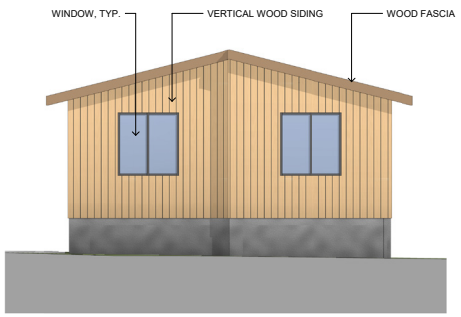
Restroom Building - West Elevation



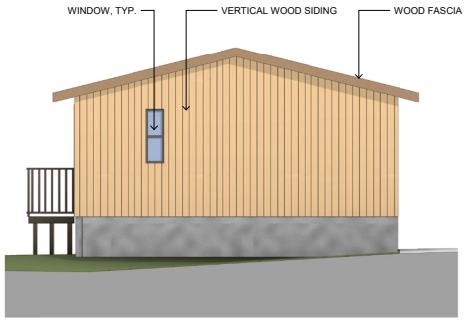
Restroom Building - Floor Plan

Source: NorthStar, 2021.

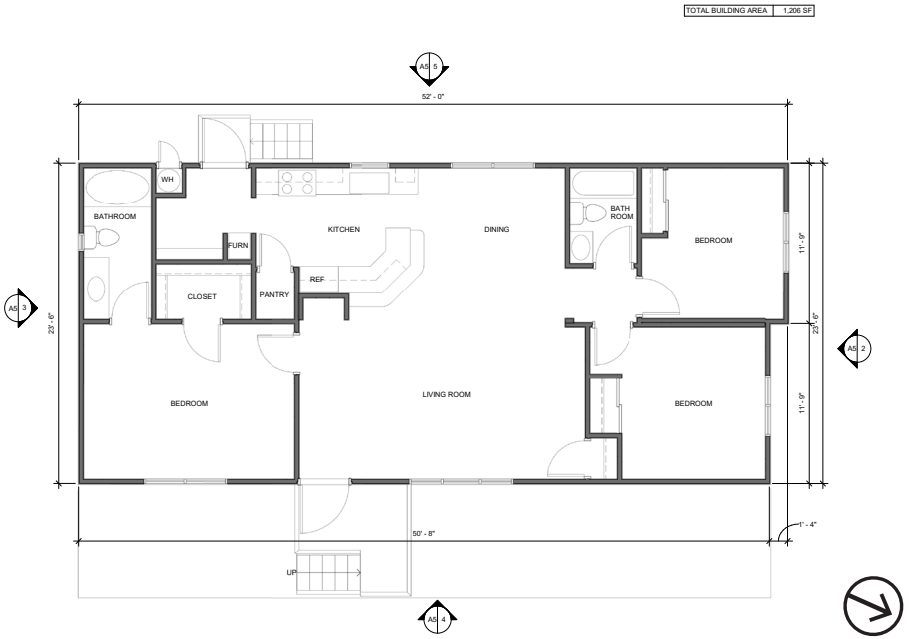
Figure 3-12
Restroom Building – Floor Plan and Elevations



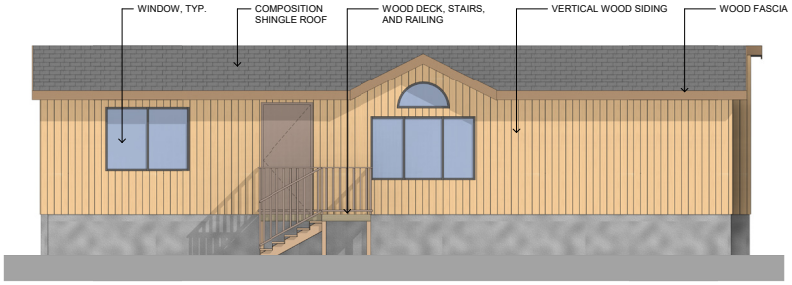
Caretaker House (Existing Structure) - North



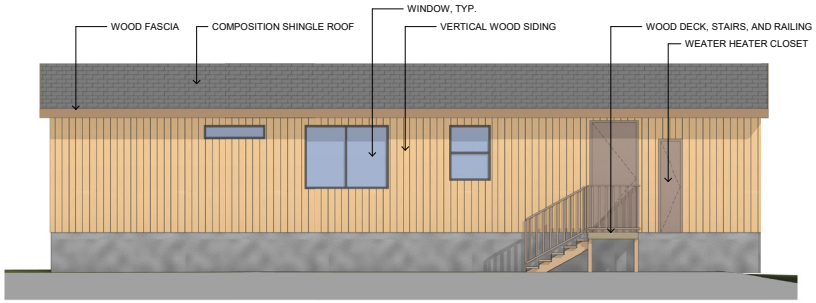
Caretaker House (Existing Structure) - South



Caretaker House (Existing Structure) - Floor Plan



Caretaker House (Existing Structure) - East



Caretaker House (Existing Structure) - West

Source: NorthStar, 2021.

Figure 3-13

Caretaker House (Existing Structure) - Floor Plan and Elevations

TABLE 3-1 PROPOSED PROJECT BUILDOUT

	Number of Structures	Floors	Total Square Footage
Residential			
Staff House	1	1	2,636
	Subtotal – Staff House	–	*2,636*
Caretaker's Unit (Existing)[b]	1	1	1,206
	Subtotal – Caretaker's Unit	–	*1,206*
	Total Residential	**–**	**3,842**
Non-Residential			
Cabins[a]	12	1	400
	Subtotal – Cabins	–	*4,800*
Central Meeting and Dining Hall	1	2	8,506
	Subtotal – Central Meeting and Dining Hall	–	*8,506*
Restroom and Shower Building	1	1	1,025
	Subtotal – Restroom and Shower Building	–	*1,025*
	Total Non-Residential	–	**14,331**
Total Square Footage (Residential + Non-Residential)			**18,173**

Source: NorthStar, 2021.
Notes:
a. Cabins are defined in California Code of Regulations Title 25 Section 2327, *Camping Cabins*.
b. The caretaker's unit is classified as a mobilehome, as defined in Title 17, Zoning, of the Alameda County Municipal Code, which is subject to installation in accordance with Title 15, Buildings and Construction, of the Alameda County Municipal Code. No alterations to this structure are proposed.

3.3.2 OPEN SPACE AND AMENITIES

Dirt roads and trails exist on the property and extend within the bay and oak woodland habitat that covers the slopes on the western side of the property. These existing roads and trails would be repurposed to serve as a recreational pedestrian trail system under the proposed project.

As described above, the existing project site includes about 0.6 acres of developed land on the 37-acre site; the proposed project would develop 2 acres and maintain 35 acres of open space.

3.3.3 PARKING AND ACCESS

The property has two existing driveways on Cull Canyon Road. A gravel parking area also exists adjacent to the driveway on the northern portion of the project site.

As shown on Figure 3-4, *Proposed Project Site Plan*, buses and other vehicles would enter the site via the northerly driveway and exit the site from the southerly driveway. Vehicles would park in the gravel area

adjacent to these driveways, with a few parking spaces, including ADA parking spaces, located near the caretaker's unit, the proposed staff lodging house, and the proposed cabins. Students would board and disembark buses from the driveway area and walk across the bridge. Only staff service vehicles would use the bridge to access the multipurpose building and facilities on the east side of Cull Creek.

As shown on Figure 3-4, the access road that crosses the bridge would be made of asphalt concrete paving until it reaches a fire truck hammerhead, paved with pervious material, at the cabins.

Bicycle parking would be provided in the northern portion of the project site. Most bicycle parking would either be covered or secure.

In total, the proposed project would include construction of 15 surface vehicular parking spaces on the project site to serve the proposed staff and bus uses.

3.3.4 UTILITIES AND SERVICE CONNECTIONS

3.3.4.1 STORMWATER

Stormwater runoff would be directed to ten bio-retention areas. The project site currently drains toward Cull Creek and would continue to do so under the proposed project. Stormwater runoff from Cull Creek flows into San Lorenzo Creek, which discharges eventually into the San Francisco Bay.

The proposed project would be required to comply with Provision C.3 of the Municipal Regional Stormwater Permit in order to reduce post-construction stormwater pollutants.[6] Compliance with Provision C.3 for this project includes pervious pavement and bioretention areas to treat stormwater runoff from the project site. The proposed project would be required to submit a stormwater checklist to the County prior to issuance of grading or building permits.

During site visits for the proposed project in 2021, a culvert was identified running west to east on the southern edge of the project site. If conflict is found between the culvert and the location of any proposed buildings, the proposed project would re-route the culvert between its entry and exit points around the southern edge of the site to eliminate conflicts without affecting site drainage. This would not require tree removal not already planned as part of the proposed project. The potential re-route of the culvert and its existing entry and exit points is included in Figure 3-4, *Proposed Project Site Plan*.

3.3.4.2 POTABLE WATER SUPPLY

The proposed project would rely on groundwater obtained on-site to supply potable water. The project site currently has five groundwater wells. One well located adjacent to the west side of Cull Creek has been deemed inadequate as a potable water source and would be abandoned in accordance with Alameda County Environmental Health Department regulations, and two other wells are not fit for use as well. Two of the groundwater wells would serve as production wells and provide potable water for the

[6] San Francisco Regional Water Quality Control Board (Region 2) Municipal Regional Stormwater Permit (Order No. R2-2009-0074) and NPDES Permit No. CAS612008, as amended by Order No. R2-2011-0083.

proposed project, including water for fire suppression and irrigation. None of the wells are shared with neighbors or nearby residences. Water from the groundwater wells would be pumped into a 15,000-gallon raw water storage tank. Water from this tank would feed into a new reverse osmosis water treatment plant that would meet CCR Title 22 drinking water requirements. The treated water would be pumped into two 5,000-gallon potable water storage tanks that would gravity feed into the water distribution system. A hydropneumatics tank and booster pump would pressurize the distribution system. There would also be a 20,000-gallon waste tank that would hold the treatment process wastes for periodic transport off-site and disposal by an approved hauler. Greywater and rainwater harvesting tanks are proposed in the area north of the staff house and a fire suppression raw water tank west of the staff house.

A new water supply and delivery system would be developed to connect to the facilities for the proposed project and sized to meet the proposed project's domestic and firefighting water needs. The piping network would be installed underground in trenches and sized to supply adequate flow and pressure.

3.3.4.3 SANITARY SEWER SERVICE

An on-site wastewater system sized to serve the proposed project, including a leach field dispersal system, would be installed on the southern portion of the project site to the east of the cabins, where an existing septic system is located. The proposed septic area would be approximately 9,435 square feet. The system would employ a chamber system for blackwater treatment to reduce the area needed for effluent treatment. In addition, a greywater dispersal system would be utilized during dry months to reduce the hydraulic load going to the wastewater system. An estimated 30 percent of the total wastewater generated on-site would be greywater, reducing the blackwater flows by approximately 1,058 gallons per day. The greywater system would disperse filtered greywater to the greywater dispersal area. The existing septic system at the caretaker site would not be modified.

3.3.4.4 ENERGY

Buildings would be designed to maximize natural lighting, use high-performance glazing, incorporate passive heating and cooling strategies, and employ low-flow fixtures to minimize energy consumption and exceed Title 24 energy requirements. The project would include all feasible rooftop solar arrays for consumption on-site.

The project site currently includes two 499-gallon liquid propane tanks to serve existing facilities. One tank, located at the existing mobile home, would remain to serve the caretaker's unit under the proposed project and the other tank, located behind the existing garage building, would be upgraded to serve the new multi-use building and shower building under the proposed project.

The project site includes existing overhead electrical lines connected to electrical poles and lines along Cull Canyon Road that serve the existing buildings on-site and neighboring properties. Electricity use for the proposed project would come from this existing service.

3.3.5 EMERGENCY EVACUATION

The proposed project would incorporate a Fire Safety and Emergency Response Plan, outlining the following fire prevention measures, training and drills, signage and documentation, and evacuation preparedness and procedures:

- Fire Prevention Measures:
  - Smoking will be prohibited, and staff and students will not be permitted to bring anything flammable onsite. All staff and students must sign a contract agreeing to this prior to arrival onsite, and the rule will then be reinforced upon arrival.
  - A 1 to 7 staff to student ratio will be maintained in order to provide adequate supervision.
  - Vegetation and defensible space will be maintained according to Alameda County regulations and State Building and Fire Codes.
  - East Bay Regional Parks guidelines will be followed, including the following:
    - When both the fire department has limited resources to fight fire and the National Weather Service declares a Red Flag Warning, camp sessions will be cancelled.
    - If a fire danger is listed as "extreme" or "very high," as declared by the County of Alameda Fire Department, there will be no open fires of any type, including barbeques allowed on-site; no use of gasoline-powered equipment would be allowed; all fire equipment will be checked for readiness; and all staff and groups will be notified of restricted activities.
- Staff Training and Drills:
  - All staff and employees will be trained in safe evacuation and notification procedures, and all staff must attend a training session yearly to learn and practice how to navigate calmly, quickly, and safely during an evacuation emergency.
  - An emergency drill will be held within the first 24 hours of the beginning of each program session.
  - When conducting an emergency drill, any people needing special assistance will be identified and special accommodations will be put in place.
  - All means of notifying occupants to evacuate (e.g., intercom, alarms, walkie talkies) will be employed.
  - Training will include interactive role plays practicing how staff should respond in different scenarios.
  - Prior to role plays and drills, it will be ensured that staff is familiar with location of all fire alarms and extinguishers, evacuation routes, and Safety Zones, and demonstrated how to properly use fire extinguishers, fire blankets, and fire hoses.
  - The following exercise will be used as practice scenarios to increase individual confidence and effectiveness:
    - An individual will activate the fire alarm at the first sign of fire or other emergency.
    - Notify anyone in the immediate area of danger.
    - Close doors to confine fire and smoke, but do not lock them.

- Evacuate buildings and assist site campers and staff in evacuating.
- Determine which Safety Zone to use, dependent on the specific scenario.
- Call the fire department (911 or other emergency number) and provide the following information: Location and building name, address, and nearest cross street; location of fire in the building or area adjacent; known information about the fire or smoke; identify a call-back phone number; and finally, do not hang up until emergency services operator does so.

- All staff will be tested to verify that they know how to evacuate their work areas and perform fire drill duties in an emergency.
- At least once per quarter, a fire department representative will be invited to review the fire drill exercise to verify its effectiveness.

- Signage and Documentation
  - Copies of the Fire Safety and Emergency Response Guide will be kept easily accessible for all on-site staff.
  - Emergency numbers will be posted in easily visible places throughout the site.
  - Staff will review and update the Fire Safety and Emergency Response Guide at least once per calendar quarter.
  - All buildings will have posted written fire evacuation procedures, included detailed instructions and numbers for contacting emergency personnel.
  - All buildings will have posted maps of evacuation routes which also indicate the locations of fire alarms, fire extinguishers, and safe gathering zones.
  - Appropriate safety signage will be nearby each building and throughout the site.
- Evacuation Preparation and Procedures
  - The Mosaic Project subscribes to Zonehaven AWARE "ACALERT" used by the Alameda County Emergency Services to report zone-specific emergencies (e.g., area wildfires).
  - The Mosaic Project has established an emergency evacuation agreement with the Castro Valley Unified School District. In case of the need for emergency evacuation, the District will provide two available school buses, each of which holds 50 individuals, to bring the campers to Canyon Middle School, which is 7 minutes away from the project site. If Canyon Middle School is not a safe evacuation site, another District facility will be used. To communicate a need for the buses, work and cell phone numbers of primary contacts, as well as a backup contact for the project site, and the Superintendent, will be maintained on-site.
  - Prior to their child's session parents will be given the following instructions in case of an emergency: "Do NOT come in individual cars to pick up your child. This would cause traffic and disrupt evacuation procedures. We will utilize nearby school buses to quickly evacuate everyone to a nearby school. Your child's school will arrange further transportation."
  - When there is a need to evacuate, all staff and campers will gather in the parking lot. If this area is not accessible, everyone will gather between the creek and the road on the south side of the property.

- Campers will line up according to their cabin group (as practiced in the emergency drills) and assigned staff will conduct a roll call.
- Staff will report any person unaccounted for to a fire department representative immediately and include a complete description of the individual.
- Staff will comply with all emergency direction as provided by the County of Alameda Fire Department
- If deemed safe, The Mosaic Project's land and buildings can be utilized as a shelter center for local residents to secure safety in the event of an emergency.

3.3.6 LANDSCAPING

The project site is relatively hilly with a downward slope to the east. The site is covered with vegetation, wild grasses, and bay and oak woodlands. All grass, brush, roots, and other organic matter would be cleared from areas where development is planned. Vegetation scrapings would be stockpiled for re-use in landscape areas or removed from the site.

The proposed project would include several landscaped outdoor spaces, including between the proposed cabins and at the counsel ring. Landscaping would consist of trees, shrubs, and groundcover, and plant material would be chosen for its compatibility with the regional climate and landscape conditions, drought tolerance, longevity, screening cap abilities, and overall attractiveness. Irrigation demand will be met by a combination of a greywater system and a rainwater collection system. The rainwater collection system will also be used as an alternate source for non-potable demands, including toilet flushing and fire protection.

3.3.7 LIGHTING

Exterior lighting would be provided within the parking lots on the project site and around the cabins and buildings. Proposed lighting would be designed so that the lights are shielded or directed in such a way that there would be no impact on the adjacent land uses or nearby residences. In addition to the exterior lighting fixtures, the project site would include low-level lighting for security and identification purposes.

3.4 REQUIRED PERMITS AND APPROVALS

The project will require the following permits and approvals for construction:

- Conditional Use Permit
- Site Development Review for Agricultural Caretaker's Dwelling
- Williamson Act Compatibility Review
- Demolition Permit
- Alameda County Building and Grading Permits

- Alameda County Environmental Health Permits
- Alameda County Fire Department Permits
- Alameda County Public Works Watercourse Permit

In addition to the above, other permits or approvals that may be required for the proposed project include:

- Permit Registration Documents (PRDs) and Stormwater Pollution Prevention Plan (SWPPP) to the State Water Resources Control Board for compliance with the Construction General Permit for disturbance of land totaling one acre or more
- Stormwater Checklist for C.6/C.3 Compliance to the Alameda County Public Works Agency prior to the issuance of grading and building permits
- Consultation with the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) for construction of stormwater outfalls into Cull Creek, if re-routing of the existing culvert requires construction of stormwater outfalls
- Authorization under Sections 404 and 401 of the Clean Water Act from USACE and the San Francisco Bay RWQCB, if re-routing of the existing culvert requires construction of stormwater outfalls

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4. Environmental Analysis

This chapter of the Draft EIR is made up of 15 sub-chapters. This introduction describes the organization of the Draft EIR and the assumptions and methodology of the cumulative impact analysis. The remaining 18 sub-chapters evaluate the direct, indirect, and cumulative environmental impacts of the proposed project.

In accordance with Appendix G, *Environmental Checklist*, of the 2022 CEQA Guidelines, as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD), 62 Cal. 4th 369 (No. S 213478)], the potential environmental effects of the proposed project are analyzed for potential significant impacts in the following 15 environmental issue areas, which are organized with the listed abbreviations:

- Agriculture and Forestry Resources (AG)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural Resources (CULT)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYD)
- Land Use and Planning (LUP)
- Noise (NOI)
- Public Services (PS)
- Transportation (TRAN)
- Tribal Cultural Resources (TCR)
- Utilities and Service Systems (UTIL)
- Wildfire (WF)

Due to the past, current, and proposed uses of the project site, and the project site location, no environmental impacts associated with aesthetics, energy, mineral resources, population and housing, and recreation are expected to occur as a result of the proposed project. The scoping out of these topic areas, as well as other criteria, are discussed in the Initial Study included in Appendix A, *Notice of Preparation*. These resource topics will not be addressed further in the Draft EIR. Of the resource topics addressed within the Draft EIR, each subchapter is organized into the following sections:

- Environmental Setting offers a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared, and an overview of federal, State, regional, and local laws and regulations relevant to each environmental issue.
- Thresholds of Significance refer to the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed project to determine whether the impact is significant. These thresholds are based 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 are found to be significant or less than significant prior to mitigation. This subsection also

includes a discussion of cumulative impacts related to the proposed project. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

THRESHOLDS OF SIGNIFICANCE

As noted above, significance criteria are identified before the impact discussion subsection, under the subsection, "Thresholds 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 can be mitigated below such thresholds.
- *No impact (NI)* describes circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the Draft EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If one or more mitigation measure(s) would reduce the impact to a less-than-significant level successfully, this is stated in the Draft EIR. *Significant and unavoidable (SU)* impacts are described where mitigation measures would not diminish these effects to less-than-significant levels. The identification of a project-level significant and unavoidable impact does not preclude the finding of less-than-significant impacts for subsequent projects that comply with the applicable regulations and meet applicable thresholds of significance.

ASSUMPTIONS AND METHODOLOGY REGARDING CUMULATIVE IMPACTS

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."

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 the other projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

The cumulative discussions in Chapters 4.1 through 4.15 of this Draft EIR explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, 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 macro-scale air quality impacts, all development within the air basin

contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions are the best tool for determining the cumulative impact. In assessing aesthetic impacts, on the other hand, only development within the localized area of change would contribute to a cumulative visual effect since the area of change is only visible within the vicinity of that area.

The CEQA Guidelines provide 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.

The cumulative impact analysis in this Draft EIR relies on a combination of the two permissible approaches, with the applicable list of projects shown in Table 4-1. The cumulative analysis discussions contained in Chapters 4.1 through 4.15 include a discussion of the growth projections and references to specific projects as relevant to the impact analysis as of May 2022.

The following provides a summary of the cumulative impact setting for each impact area:

- Agriculture and Forestry Resources: The cumulative setting for agriculture and forestry resources includes the effects of the proposed project together with other cumulative development projects in the vicinity of the project site.
- Air Quality: The project's potential contribution to cumulative impacts is assessed utilizing the same significance criteria as those for project-specific impacts. Individual development projects that generate construction or operational emissions that exceed the Air District screening thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the San Francisco Bay Area Basin is in nonattainment.
- Biological Resources: The geographic scope of the cumulative analysis is the two-mile radius around the project site.
- Cultural Resources: Cumulative impacts to cultural resources occur when a series of actions leads to the loss of a substantial type of site, building, or resource.
- Geology, Soils, and Seismicity: The cumulative setting for impacts related to geology and soils is site specific and addressed in the project's geotechnical investigation.
- Greenhouse Gas Emissions: Because GHG emissions are not confined to a particular air basin but are dispersed worldwide, the cumulative analysis focuses on the global impacts.
- Hazards and Hazardous Materials: The cumulative setting for impacts related to hazards and hazardous materials includes Alameda County, which is the service area for the Alameda County Department of Environmental Health.
- Hydrology and Water Quality: The geographic context used for the cumulative assessment of hydrology and water quality impacts includes the areas within Alameda County that discharge stormwater to the same storm drain system as the project site, with ultimate discharge into the San Francisco Bay.

- **Land Use and Planning:** The cumulative setting for land use and planning considers the effects of the proposed project and several concurrent developments in the same area of Alameda County.
- **Noise:** The traffic noise levels are based on cumulative projects and traffic conditions used for the traffic impact analysis, which takes into account cumulative effects of the proposed project.
- **Public Services:** Cumulative impacts are considered in the context of the growth from the proposed project combined with the estimated growth in the service areas of each service provider.
- **Transportation:** The cumulative setting for traffic and circulation applies the regional transportation demand model and incorporates regional growth projections to the transportation network in Alameda County and the proposed project.
- **Tribal Cultural Resources:** Cumulative impacts to tribal cultural resources occur when a series of actions leads to adverse effects on local Native American tribes or tribal lands.
- **Utilities and Service Systems:** Cumulative impacts are considered in the context of the growth from the proposed project combined with the estimated growth in the service areas of each utility's service area.
- **Wildfire:** The analysis of the proposed project includes a discussion of how cumulative development may exacerbate wildfire risk in Alameda County and the surrounding area.

As shown in Table 4-1, there are not any current projects within the vicinity of the proposed project. The nearest project is 1.4 miles away, and other projects are 4 miles away or farther. Table 4-1 does not list every project in Alameda County, but only those within roughly 5 miles of the project site. The Castro Valley Area Plan focuses on long-term preservation as open space or low-intensity uses within Measure D designated areas (which includes the project site).[1]

TABLE 4-1 APPROVED AND PENDING CUMULATIVE PROJECTS WITHIN THE VICINITY OF THE PROPOSED PROJECT

Project Location	Project Name	Distance from the Proposed Project	Description
7825 Crow Canyon Road	Fa YunChan Buddhist Center	1.4 miles	Conditional use permit, site development review, rezoning, boundary adjustment. Application to develop site for worship facilities including conversion of existing building into staff dorms, trail systems, five new buildings, and site improvements.
2889 Kelly Street	Community Housing Development Corporation, SB 35 Ministerial Review	4 miles	Application to allow construction of a four-story, 40-foot tall residential building with 42 affordable housing studio units plus one managers dwelling unit and amenities.
1473 Crescent Avenue	Ruby Street Apartments Project	4.5 miles	Single two- to four-story apartment building with 72 affordable low and very-low income dwelling units with parking and bike/pedestrian trail.

[1] Alameda County, 2012. Castro Valley General Plan, Appendix A, Measure D Text.

TABLE 4-1 APPROVED AND PENDING CUMULATIVE PROJECTS WITHIN THE VICINITY OF THE PROPOSED PROJECT

Project Location	Project Name	Distance from the Proposed Project	Description
24492 Karina Street	HL Fairview Garden Tract Map 8057	4 miles	Subdivision of 4 existing lots into 27 single-family lots and five common lots for open space and stormwater treatment.

Source: Alameda County, 2022, https://www.acgov.org/cda/planning/landuseprojects/currentprojects.htm, accessed May 25, 2022.

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4.1 AGRICULTURE AND FORESTRY RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to agriculture and forestry resources, and the potential impacts of the project on agriculture and forestry resources.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations related to agricultural resources concerning the proposed project. There are no federal regulations pertaining to agricultural resources that directly apply to the proposed project.

State Regulations

Land Conservation Act of 1965 (Williamson Act)

Commonly known as the Williamson Act, the State of California's Land Conservation Act of 1965 enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive reduced a property tax assessment based upon farming and open space uses as opposed to full market value.

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides designations for classifications of farmland throughout the State and produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is classified according to soil quality and irrigation status, with the categories being Prime Farmland, Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land.[1]

Local Regulations

Alameda County General Plan

The Alameda County General Plan includes a countywide Conservation Element, which includes the following goals and objectives specific to agricultural resources and applicable to the proposed project:

- Goal: To protect and maintain soils in Alameda County in such a manner to be beneficial to agricultural and open uses.

[1] California Department of Conservation, Program Overview, https://www.conservation.ca.gov/dlrp/fmmp, accessed October 6, 2021.

Objectives:

1. To conserve soil resources for agricultural productivity.
2. To preserve in agricultural use those areas of prime agricultural lands capable of producing a wide variety of valuable crops.
3. To guide urban development towards less productive land.
4. To join with the USDA Soil Conservation Service and Agricultural Agencies in developing rational criteria for resource management and land development.

- Goal: To protect and maintain the soil resources in Alameda County in such a manner as to be beneficial to all land users.

  Objectives:

  1. To set up rational land use and development guidelines to protect soil resources.
  2. To set up rational land use and development guidelines to protect the soil resources in agricultural areas.
  3. To set up rational guidelines to control non-point source pollution.

- Goal: To protect agriculture and agricultural lands.

  Objectives:

  1. To preserve agricultural lands.
  2. To promote sound land use management on agricultural lands.
  3. To identify lands with little or no agricultural value for urban development provided that they otherwise meet urban development criteria.
  4. To support a concept of multiple use of agricultural and grazing lands as a means of preserving economic and environmental values of the land.

4.1.1.2 EXISTING CONDITIONS

The project site is designated as Resource Management in the Castro Valley General Plan and zoned Agriculture (A) by the Alameda County Municipal Code (ACMC). This zoning district is established for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.[2] Permitted uses include crop, vine, or tree farm, plant nursery, apiary, raising or keeping of poultry or other similar animals, winery microbrewery or olive mill with visitor center, public or private riding or hiking trails, boarding stables and riding academics. Per ACMC Section 17.06.040, *Conditional Uses – Board of Zoning Adjustments*, an outdoor recreation facility is a conditional use that can be permitted in the A district if approved by the Board of Zoning Adjustments.

[2] Alameda County, 2022, Municipal Code, Section 17.06.010 – Agricultural districts – Intent, https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.06ADI_17.06.030PEUS, accessed April 11, 2022.

The project site is subject to Williamson Act Contract No. 2015-56, and is Williamson Act Non-Prime Agricultural Land. This is land which is enrolled under a California Land Conservation Act contract but does not meet any of the criteria for classification as Prime Agricultural Land and is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act. Some Williamson Act Non-Prime Land include agricultural uses such as grazing or non-irrigated crops but may also include other open space uses compatible with agricultural.[3]

Pursuant to the California Department of Conservation, the subject property is designated as both Grazing Land and Other Land; it is not considered Prime Farmland, Unique Farmland, or Farmland of Local Importance.[4]

The project site does not contain land zoned or designated as forestland, timberland, or timberland zoned Timberland Production. However, the majority of the 37-acre site is undeveloped and forest-like where heavily vegetated.

4.1.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant agriculture and forestry resource impact if it would:

1. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
2. Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
3. Result in the loss of forest land or conversion of forest land to non-forest use.
4. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.
5. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to agriculture and forestry resources.

4.1.3 IMPACT DISCUSSION

AG-1 The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

As described in Section 4.1.1.2, Existing Conditions, the project site is zoned A District, for which, according to ACMC Section 17.06.030, permitted uses include one family dwelling or one family mobile home; one secondary dwelling unit; crop, vine or tree farm, truck garden, plant nursery, greenhouse, apiary, aviary, hatchery, horticulture; raising or keeping of poultry, fowl, rabbits, sheep or goats or similar

[3] California Department of Conservation, 2015, *Alameda County Williamson Act FY 2014/2015* map.

[4] California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed January 9, 2022.

animals; grazing, breeding or training of horses or cattle; winery or olive oil mill; fish hatcheries; and public or private hiking trails. Per ACMC Section 17.06.040, *Conditional Uses – Board of Zoning Adjustments*, an outdoor recreation facility is a conditional use that can be permitted in the A district if approved by the Board of Zoning Adjustments.

As described in Chapter 3, *Project Description*, of this Draft EIR, the proposed project would be an outdoor recreation facility with agricultural uses. Farm animals consisting of up to five pigmy goats and forty chickens, would be kept on-site. The animals would be used for natural property maintenance, food, as an educational experience for the campers, and to earn income through selling of goat's milk and eggs and renting out the goats for grazing for vegetation reduction and fire abatement. The proposed project would incorporate an organic garden site, with produce used in student meals and sold to the community.

As described above in Section 4.1.1.2, *Existing Conditions*, the project site is subject to Williamson Act Contract No. 2015-56, and is classified as Williamson Act Non-Prime Agricultural Land. Some Williamson Act Non-Prime Land include agricultural uses such as grazing or non-irrigated crops but may also include other open space uses compatible with agricultural.[5] The proposed project would result in a net increase in developed area of about 1.4 acres; it would not significantly alter the layout of the entire 37-acre site. Most of the site would remain undeveloped, therefore keeping the preservation of open space in line with Non-Prime Agricultural Land. Additionally, uses within the developed area would include keeping of farm animals, gardening, and development to support The Mosaic Project's mission.

The proposed project is allowed under a conditional use permit and is consistent with zoning requirements, and would therefore not conflict with existing zoning. Additionally, it would not conflict with a Williamson Act Contract. Therefore, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

AG-2	**The proposed project would not conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).**

Neither the project site nor the immediately surrounding areas are zoned for forest land, timberland, or timber production. Additionally, there are no lands within Alameda County zoned for or currently featuring timberland or timber production.[6] The proposed project would therefore not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production. Therefore, there would be *no impact*.

Significance without Mitigation: No impact.

[5] California Department of Conservation, 2015, *Alameda County Williamson Act FY 2014/2015* map.
[6] Alameda County Municipal Code, Title 17 Zoning.

AG-3	The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.

There is no designated (i.e., through zoning or land use) forest land on the project site. Most of the project site is, however, heavily vegetated and wooded. As described in Chapter 3, *Project Description*, development under the proposed project would occur on 2 acres of the site that currently has existing development. The rest of the 37-acre site would not be developed, and the wooded areas of the project site would therefore largely be unaffected with the exception of property maintenance, including enhancement of the existing trails and dirt roads, and any vegetation maintenance that might occur under the proposed project. The proposed project would not result in any changes in zoning or land use, as uses under the proposed project would be consistent with the existing designations with the implementation of a Conditional Use Permit to allow an "outdoor recreation facilities" within the Agriculture (A) zoning district pursuant to Alameda County Municipal Code Section 17.06.040, Conditional uses—Board of Zoning Adjustments for A Districts. Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Accordingly, there would be *no impact*.

Significance without Mitigation: No impact.

AG-4	The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As described in the Initial Study included as part of the Notice of Preparation in Appendix A of this Draft EIR, the proposed project is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As discussed under impact discussion AG-2 and AG-3, the proposed project would have no impact on the loss or conversion of forest land to non-forest use. Furthermore, as described under impact discussion AG-1, the proposed project conflict with zoning or a Williamson Act contract. The project would include agricultural uses and outdoor recreation uses consistent with zoning (with the use of a Conditional Use Permit). The majority of the 37-acre site would remain undeveloped (the project site would result in 2 acres of development, a 1.4-acre increase from the current 0.6 acres of development), vegetated land, and the proposed development is primarily within the current footprint of development under existing conditions. As such, the project would not involve other changes that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

AG-5	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to agriculture and forestry resources.

Cumulative impacts would occur when a series of actions leads to a loss of agricultural resources, which occurs when agricultural lands are converted to non-agricultural uses. This generally occurs in newly urbanized areas where development encroaches into agricultural areas through general plan and zoning amendments leading to the long-term conversion of agricultural lands.

The analysis of cumulative impacts to agricultural lands is based on impacts of the proposed project plus development in the vicinity of the subject property. As listed in Table 4-1 in Chapter 4, *Environmental Analysis*, of this Draft EIR, there are not any current projects within the vicinity of the proposed project; the nearest project is the development of worship facilities 1.4 miles away.

As noted above, the proposed project would not involve conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; would not conflict with existing agricultural zoning or a Williamson Act contract; would not involve changes to forest land, timberland, or timberland zoned for Timberland Production; would not result in the loss of forest land or the conversion of forest land to non-forest use; and would not involve other changes that would result in the conversion of farmland to non-agricultural use. As such, it would not contribute to cumulative impacts to agricultural or forestry resources. Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less than significant* cumulative impact with respect to agricultural resources.

Significance without Mitigation: Less than significant.

4.2 AIR QUALITY

This chapter describes the existing air quality in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing air quality setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts.

This chapter is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD or Air District) for project-level review. The analysis focuses on air pollution from regional emissions and localized pollutant concentrations from buildout of the proposed project. In this chapter "emissions" refers to the actual quantity of pollutant, measured in pounds per day or tons per year (tpy) and "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 ($\mu g/m^3$). Construction criteria air pollutant emissions modeling is included in Appendix B, *Air Quality and Greenhouse Gas Modeling,* of this Draft EIR. The construction health risk assessment (HRA) is included in Appendix C, *Health Risk Assessment*, of this Draft EIR.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the federal Clean Air Act and California Clean Air Act, respectively. The pollutants emitted into the ambient air by stationary and mobile sources 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_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Table 4.2-1, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

TABLE 4.2-1 CRITERIA AIR POLLUTANT HEALTH EFFECTS SUMMARY

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	▪ Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	▪ Cough, chest tightness ▪ Difficulty taking a deep breath ▪ Worsened asthma symptoms ▪ Lung inflammation	▪ Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	▪ Increased response to allergens ▪ Aggravation of respiratory illness	▪ Same as carbon monoxide sources
Particulate Matter (PM_{10} & $PM_{2.5}$)	▪ Hospitalizations for worsened heart diseases ▪ Emergency room visits for asthma ▪ Premature death	▪ Cars and trucks (particularly diesels) ▪ Fireplaces and woodstoves ▪ Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	▪ Aggravation of respiratory disease (e.g., asthma and emphysema) ▪ Reduced lung function	▪ Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	▪ Behavioral and learning disabilities in children ▪ Nervous system impairment	▪ Contaminated soil

Sources: California Air Resources Board, 2022, Common Air Pollutants: Air Pollution and Health, https://ww2.arb.ca.gov/resources/common-air-pollutants, accessed January 31, 2022. South Coast Air Quality Management District, 2005, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf, accessed March 2, 2022.

- Carbon Monoxide (CO) is a colorless, odorless 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 to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. 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.[1]
- 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.

[1] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022..

There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District 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 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 NO_X. 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.[5] 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 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm).[5]
- **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.[2]
- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. 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). Diesel particulate matter (DPM) is also classified a carcinogen.

  Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and 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 SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.

[2] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022..

- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 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_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 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_3 can also damage plants and trees and materials such as rubber and fabrics.[3]
- **Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)** 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, the Air District has established a significance threshold for this pollutant.
- **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 phasing 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. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (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 the 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 (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code Section7412[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 determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

[3] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022..

California regulates TACs primarily through Assembly Bill (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 forth a formal procedure for the California Air Resources Board (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, all of which are identified as having no safe threshold.

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, toxic air contaminant 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 and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[4] 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 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. According to the Air District, PM emitted from diesel engines contributes to more than 85 percent of the cancer risk within the SFBAAB and cancer risk from TACs is highest near major diesel PM sources.[5]

4.2.1.2 REGULATORY FRAMEWORK

Federal, State, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the city is subject to the rules and regulations imposed by the United States Environmental Protection Agency (USEPA), CARB, the California Environmental Protection Agency, and the Air District. Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Federal and State Regulations

Ambient air quality standards have been adopted at federal and state levels for criteria air pollutants. In addition, both the federal and State governments regulate the release of TACs. The project site is in

[4] California Air Resources Board. 1999. Final Staff Report: Update to the Toxic Contaminant List.

[5] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013).

unincorporated Alameda County, which is in the SFBAAB and is subject to the rules and regulations imposed by the Air District, the national AAQS adopted by the USEPA, and the California AAQS adopted by CARB.

Ambient Air Quality Standards

The federal Clean Air Act (CAA) was passed in 1963 by the United States Congress and has been amended several times. The 1970 federal 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 4.2-2, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 4.2-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Ozone (O_3)[c]	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_2)	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	

TABLE 4.2-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Sulfur Dioxide (SO_2)	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_{10})	Annual Arithmetic Mean	20 µg/m^3	*	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^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[d]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	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^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[e]	24 hours	25 µg/m^3	*	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_2S) 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.
Vinyl Chloride	24 hours	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.

TABLE 4.2-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources

Notes: ppm: parts per million; µg/m^3; micrograms per cubic meter; *Standard has not been established for this pollutant/duration by this entity.

a. California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, 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 O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 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 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 µg/m^3 is equal to or less than one. For $PM_{2.5}$, 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 $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

e. On June 2, 2010, a new 1-hour 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, https://ww2.arb.ca.gov/resources/documents/ambient-air-quality-standards-0, accessed March 2, 2022.

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

- AB 1493: Pavley Fuel Efficiency Standards. Pavley I is a clean-car standard that reduces emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.
- Heavy-Duty (Tractor-Trailer) GHG Regulation. The tractors and trailers subject to this regulation must either use EPA SmartWay certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low-rolling-resistance tires. Sleeper-cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified low-rolling-resistance tires. This rule has criteria air pollutant co-benefits.
- SB 1078 and SB 107: Renewables Portfolio Standards. A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under this standard, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.
- California Code of Regulations (CCR) Title 20: Appliance Energy Efficiency Standards. The 2006 Appliance Efficiency Regulations (20 CCR secs. 1601–1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. This code reduces natural gas use from appliances.

- 24 CCR, Part 6: Building and Energy Efficiency Standards. Energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977. This code reduces natural gas use from buildings.
- 24 CCR, Part 11: Green Building Standards Code. Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. This code reduces natural gas use from buildings.

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

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 the 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 US Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (CalEPA), 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.

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, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10 Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.
- 13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools. Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.

- 13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate. Regulations established to control emissions associated with diesel-powered TRUs.

Regional Regulations

Bay Area Air Quality Management District

The Air District is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. Air quality conditions in the SFBAAB have improved significantly since the Air District was created in 1955. The Air District prepares air quality management plans (AQMP) to attain ambient air quality standards in the SFBAAB. The Air District prepares ozone attainment plans for the National O3 standard and clean air plans for the California O_3 standard. The Air District prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

Bay Area Air Quality Management District 2017 Clean Air Plan

The Air District adopted the 2017 "Clean Air Plan: Spare the Air, Cool the Climate" (2017 Clean Air Plan) on April 19, 2017, making it the most recently adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. It sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020 and lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following: Construct buildings that are energy efficient and powered by renewable energy.

- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy was developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: (1) stationary (industrial) sources, (2) transportation, (3) energy, (4) agriculture, (5) natural and working lands, (6) waste management, (7) water, (8) super-GHG pollutants, and (9) buildings. The proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
  - Increase efficiency of the energy and transportation systems.
  - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.[6]

Community Air Risk Evaluation Program

The Air District Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. The last update to this program was in 2014.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—DPM, 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). Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.

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. 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 Air District does not conduct health risk screening analysis for acrolein emissions.

Assembly Bill 617 Community Action Plans

AB 617 was signed into law in July 2017 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

[6] Bay Area Air Quality Management District, 2017, Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed March 2, 2022.

On September 27, 2018, CARB approved the Air District's recommended communities for monitoring and emission reduction planning. The State approved communities for year 1 of the program as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas, areas with large sources of air pollution (refineries, seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[7]

- Year 1 Communities:
  - *West Oakland.* The West Oakland community was selected for the Air District's first Community Action Plan. In 2017, cancer risk from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy trucks and cars, port and rail sources, large industries, and to a lesser extent other sources such as residential sources (i.e., wood burning). The majority (over 90 percent) of cancer risk is from DPM.[8]
  - *Richmond.* Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the city of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historical and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact.[9]
- Year 2 to 5 Communities: East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2 to 5 of the AB 617 program.[10]

Air District Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the city. The Air District's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under the Air District Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such

[7] Bay Area Air Quality Management District, 2019, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en, accessed March 2, 2022.

[8] Bay Area Air Quality Management District, 2019, West Oakland Community Action Plan, https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan, accessed March 2, 2022.

[9] Bay Area Air Quality Management District, 2019, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en, accessed March 2, 2022.

[10] Bay Area Air Quality Management District, 2019, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en, accessed March 2, 2022.

persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under the Air District's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other Air District Regulations

In addition to the plans and programs described above, the Air District administers a number of specific regulations on various sources of pollutant emissions that would apply to the proposed project:

- Regulation 2, Rule 2, Permits, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 2, Rule 6, Permits, Major Facility Review
- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing

Local Regulations

Plan Bay Area 2050

MTC and ABAG adopted Plan Bay Area 2050 on October 21, 2021.[11] Plan Bay Area provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of Senate Bill 375. Strategies to reduce GHG emissions include focusing housing and commercial construction in walkable, transit-accessible places; investing in transit and active transportation; and shifting the location of jobs to encourage shorter commutes. To achieve MTC's/ABAG's sustainable vision for the Bay Area, the Plan Bay Area land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions.

Alameda County Transportation Commission

The Alameda County Transportation Commission (Alameda CTC) is the congestion management agency for Alameda County, 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. Alameda CTC's latest congestion management program (CMP) is called the 2019 Alameda County Congestion Management Program. Alameda CTC's countywide transportation model must be consistent

[11] Association of Bay Area Governments and the Metropolitan Transportation Commission, 2021, *Plan Bay Area 2050*. https://www.planbayarea.org/sites/default/files/documents/2021-05/Draft_Plan_Bay_Area_2050_May2021_0.pdf, accessed on August 27, 2021.

with the regional transportation model developed by the MTC with 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, Alameda CTC's updated CMP describes strategies to measure the performance of the county's multimodal transportation system, address roadway congestion and improve the performance of a multimodal system, and connect transportation and land use planning to reduce regional vehicle miles traveled (VMT) in accordance with Senate Bill 375 (SB 375). The 2019 CMP update incorporates several actions identified as next steps in the 2017 CMP and closely aligns the CMP with the 2016 Countywide Transportation Plan, the 2040 Plan Bay Area, and other related efforts and legislative requirements (e.g., AB 32 and SB 375) to better integrate transportation and land use for achieving GHG reductions.

4.2.1.3 EXISTING CONDITIONS

San Francisco Bay Area Air Basin Conditions

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. As described above, the project is in the SFBAAB. The discussion below identifies the natural factors in the SFBAAB that affect air pollution. Air pollutants of concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality.

The Air District is the regional air quality agency for the SFBAAB, 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.[12]

Meteorology

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range[13] 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. 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

[12] 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 Air Quality Guidelines*.

[13] The Coast Range traverses California's west coast from Humboldt County to Santa Barbara County.

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 José 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.

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 and the sea breeze deepens and increases in velocity while spreading inland. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (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 SFBAAB.

Temperature

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

Precipitation

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (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 SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (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

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 SFBAAB. Elevation inversions[14] are more common in the summer and fall, and radiation inversions[15] are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

Attainment Status of the SFBAAB

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme.

- Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- Attainment: A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- Nonattainment: A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- Nonattainment/Transitional: A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

[14] 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.

[15] During the night, the ground cools off, radiating the heat to the sky.

The attainment status for the SFBAAB is shown in Table 4.2-3, *Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin.* The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

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 (marginal)[a]
PM_{10}	Nonattainment	Unclassified/Attainment[b]
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of February 13, 2017.
b. In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ 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.
Source: California Air Resources Board, 2022, Maps of State and Federal Area Designations, https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations, accessed May 27, 2022.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the Air District. The Air District has 24 permanent monitoring stations around the Bay Area. The nearest station is the Hayward La Mesa Monitoring Station, which monitors O_3, NO_2, and $PM_{2.5}$. Data from this monitoring stations is summarized in Table 4.2-4, *Ambient Air Quality Monitoring Summary*. The data show regular violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard.

TABLE 4.2-4 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	2016	2017	2018	2019	2020
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	2	0	2	3
State & Federal 8-hour ≥ 0.07 ppm	0	3	0	2	4
Maximum 1-Hour Conc. (ppm)	0.083	0.139	0.075	0.106	0.116
Maximum 8-Hour Conc. (ppm)	0.064	0.110	0.066	0.085	0.092
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0592	0.0649	0.0729	0.0618	0.0592
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3	0	7	13	0	11
Maximum 24-Hour Conc. (µg/m^3)	15.5	70.2	172.1	24.7	167.7

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data; NA = Not Available
Data for O_3 was obtained from the Hayward La Mesa Monitoring Station. Data for NO_2 and $PM_{2.5}$ was obtained from the Oakland-9925 International Blvd.
Source: California Air Resources Board, 2022, Air Pollution Data Monitoring Cards (2016, 2017, 2018, 2019, and 2020), https://www.arb.ca.gov/adam/topfour/topfourdisplay.php, accessed May 18, 2022.

Existing Emissions

The project site currently houses a mobile home, barn, garage building, and paved areas. Existing uses currently generate criteria air pollutant emissions from propane use for energy, heating and cooking, vehicle trips, and area sources such as landscaping equipment and consumer cleaning products.

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. Sensitive receptors in close proximity to the proposed project include the single-family residences along Cull Canyon Road to the south and east of the project site.

4.2.2 STANDARDS OF SIGNIFICANCE

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the proposed project would result in a significant air quality impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to air quality.

4.2.2.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The Air District CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within 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 greenhouse gas emissions. In June 2010, the Air District's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. These thresholds are designed to establish the level at which the Air District believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated Air District 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, California 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.[16] The Supreme Court also found that CEQA requires the analysis of exposing people to

[16] 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 Air District's CEQA Air Quality Guidelines. The court did not rule on the merits of the thresholds of significance, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the Air District to set aside the thresholds and cease dissemination of them until the Air District complied with CEQA. Following the court's order, the Air District 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 the Air District 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 Air District 2017 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 Air District's CEQA Guidelines.

environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The Supreme Court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, the Air District published a new version of the Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion. This latest version of the Air District CEQA Guidelines was used to prepare the analysis in this EIR.

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

The Air District's regional significance criteria for projects that exceed the screening thresholds are shown in Table 4.2-5, *Air District Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds*. Criteria for both the construction and operational phases of the project are shown.

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

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District, 2017, CEQA Guidelines.

If projects exceed the emissions in Table 4.2-5, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

However, for projects that exceed the emissions in Table 4.2-5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in

(California Building Industry Association versus the Air District, Case Nos. A135335 and A136212 (Court of Appeal, First District, August 13, 2013)).

the air basin would be affected by the health effects cited above. The Air District is the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SFBAAB and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978* (Friant Ranch).

Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, if a project within the Plan Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standards are met in the SFBAAB.

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 are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). 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 Air District 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).

Community Risk and Hazards

The Air District'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 $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby residential, day care, and school-based sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The Air District has adopted screening tables for air toxics evaluation

during construction.[17] Construction-related TAC and $PM_{2.5}$ 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 and on-site receptors, as applicable.[18]

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in a million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.[19]

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 any of the following:

- An excess cancer risk level of more than 100 in a million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[20]

In February 2015, Office of Environmental Health Hazard Assessment (OEHHA) adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rate.[21]

Odors

The Air District's thresholds for odors are qualitative based on the Air District's Regulation 7, *Odorous Substances.* This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under Air District Regulation 1, Rule 1-301, *Public Nuisance*, which states that no person shall discharge from any source whatsoever such quantities

[17] Bay Area Air Quality Management District, 2010, Screening Tables for Air Toxics Evaluations during Construction.

[18] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022.

[19] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022.

[20] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed March 2, 2022.

[21] Office of Environmental Health Hazard Assessment, 2015, Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which cause, or has a natural tendency to cause, injury, or damage to business or property. Under the Air District's Rule 1-301. The Air District has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[22] For a plan-level analysis, the Air District requires:

- Identification of potential existing and planned location of odors sources.
- Policies to reduce odors.

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 are likely to occur with the proposed project. The Air District has published the CEQA Air Quality Guidelines that provides local governments with guidance for analyzing and mitigating air quality impacts and was used in this analysis.

Regional Emissions Modeling

Criteria air pollutant emissions modeling is included in Appendix B, *Air Quality and Greenhouse Gas Modeling*, of this Draft EIR. The proposed project criteria air pollutant emissions inventory was modeled using the California Emissions Estimator Model (CalEEMod) Version 2020.4. and includes the following sectors:

- On-Road Transportation. Transportation emissions are based on trip data provided by W-Trans. The fleet mix in CalEEMod was adjusted to reflect a higher proportion of bus trips and other truck trips associated with water treatment and food deliveries to the project site.
- Area Sources. Area sources generated from use of consumer products and cleaning supplies are based on California Emissions Estimator Model (CalEEMod), Version 2020.4 default emission rates and on the assumed building square footages. However, the project would utilize propane for the camp firepit. Emissions for the firepit are based on the emissions rates for propane hearths in CalEEMod.
- Energy. Criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.) are based on the CalEEMod defaults for natural gas usage for mobile home park and single-family housing land uses as a proxy for the outdoor recreation facility. Additionally, new buildings are assumed to comply with the latest Building Energy Efficiency Standards.[23]

[22] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

[23] California Energy Commission (CEC). 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf.

- Construction. While the start of construction depends upon reaching fundraising goals, the proposed project is anticipated to be constructed over an approximately 18-month period from June 2023 through December 2024. Construction would entail demolition and debris haul, site preparation, grading, building construction, paving, and architectural coating on approximately 2 acres of the 37-acre site. The construction activities are based on information provided by the applicant. Construction equipment mix is based on CalEEMod defaults, as are worker and vendor trips. Vendor trips have been adjusted to account for additional water truck trips.

Localized Emissions Modeling

A construction health risk assessment (HRA) from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the project and is included in Appendix C of this Draft EIR. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck haul route. Modeling is based on the USEPA's AERMOD air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site sensitive receptors and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime.

DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day. The project was assumed to take place over 18 months (393 workdays) from beginning of June 2022 through December 2023. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2022 through 2023). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.36-mile haul route within 1,000 feet of the project site.

Air dispersion modeling using the USEPA's AERMOD program was conducted to assess the impact of emitted compounds on sensitive receptors. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (Oakland International Airport) were used to represent local weather conditions and prevailing winds.

AQ-1 The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

The Air District is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. The Air District's 2017 Clean Air Plan is a regional and multiagency effort to reduce air pollution in the SFBAAB. A consistency determination with the air quality management plan plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality

concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the 2017 Clean Air Plan.

The regional emissions inventory for the SFBAAB is compiled by the Air District. Regional population, housing, and employment projections developed by ABAG are based, in part, on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the 2017 Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the MTC to determine priority transportation projects and vehicle miles traveled in the Bay Area. The 2017 Clean Air Plan strategy is based on projections from local general plans. Projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

Based on the scope and nature of the project, the proposed project would not substantially affect housing, employment, or population projections within the region, which are the basis of the 2017 Clean Air Plan projections. Lastly, the increase in regional emissions generated by the proposed project would not exceed BAAQMD's emissions thresholds (see impact discussion AQ-2 below). These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, and impacts would be considered *less than significant*.

Significance without Mitigation: Less than significant.

AQ-2	**The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standards.**

The Air District has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO, PM_{10}, and $PM_{2.5}$. Development projects below these significant thresholds (listed in Table 4.2-5, *Air District Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds*) 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.

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_{10} and $PM_{2.5}$) 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 ROG, NO_x, CO, PM_{10}, and

$PM_{2.5}$. An estimate of construction emissions associated with the proposed project are shown in Table 4.2-6, *Construction-Related Criteria Air Pollutant Emissions Estimate.*

Construction Exhaust Emissions

Construction emissions are based on the preliminary construction schedule developed for the proposed project, which would involve demolition, site preparation, grading, building construction, paving, and architectural coating. To determine potential construction-related air quality impacts, criteria air pollutants generated by project-related construction activities are compared to BAAQMD's significance thresholds. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 4.2-6, criteria air pollutant emissions from construction equipment exhaust would not exceed BAAQMD's average daily thresholds. Therefore, construction-related criteria pollutant emissions from exhaust would be *less than significant*.

Significance without Mitigation: Less than significant.

TABLE 4.2-6 CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATE

	Criteria Air Pollutants (Tons/Year)[a]					
Year	ROG	NO_x	Fugitive PM_{10}[b]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[b]	Exhaust $PM_{2.5}$
2022 Construction	<1	1	<1	<1	<1	<1
2023 Construction	<1	2	<1	<1	<1	<1
Total Emissions	<1	3	<1	<1	<1	<1
	Criteria Air Pollutants (Average lbs/day)[a]					
	ROG	NO_x	Fugitive PM_{10}[b]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[b]	Exhaust $PM_{2.5}$
Average Daily Construction Emissions at all Construction Phases[c]	2	14	<1	1	<1	1
Air District Average Daily Project-Level Threshold	54	54	Implement BMPs	82	Implement BMPs	54
Exceeds Average Daily Threshold	**No**	**No**	**NA**	**No**	**NA**	**No**

Notes: BMP = Best Management Practices; NA = not applicable; emissions may not total to 100 percent due to rounding; Shading represents the fugitive dust component of the emissions that are mitigated through BAAQMD's BMPs.

a. Construction phasing is based on the preliminary information provided by the project applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.

b. Includes implementation of best management practices for fugitive dust control required by the Bay Area Air Quality Management District. Implementation of BAAQMD construction best management practices is considered to result in construction-related fugitive dust emissions that are acceptable. See Mitigation Measure AQ-1.

c. Average daily emissions are based on the construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 393 days.

Source: CalEEMod 2020.4.

Fugitive Dust

Ground-disturbing activities during project construction could generate fugitive dust (PM_{10} and $PM_{2.5}$) that, if left uncontrolled, could expose the areas downwind of the construction site to air pollution from the construction dust. Fugitive PM_{10} is typically the most significant source of air pollution from the dust

generated from construction. The amount of fugitive 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. As described under Section 4.2.2, *Standards of Significance*, BAAQMD does not provide a quantitative threshold for construction-related fugitive dust emissions, and a project's fugitive dust emissions are considered to be acceptable with implementation of BAAQMD's best management practices. In other words, there could be a significant impact if the best management practices (BMPs) are not enforced. For this reason, the project's fugitive dust emissions with the incorporation of BAAQMD's best management practices are quantified for reference in Table 4.2-6.

As described in Section 4.2.1.1, *Air Pollutants of Concern*, extended exposure to particulate matter can increase the risk of chronic respiratory disease, which would be a *significant* impact. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. Health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing).

Significance without Mitigation: Significant.

Impact AQ-2: Uncontrolled fugitive dust (PM_{10} and $PM_{2.5}$) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of BAAQMD's best management practices.

Mitigation Measure AQ-2: The project construction contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]):

- Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall 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 shall 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, 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.
- 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 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

These measures shall be noted on grading plans. The construction contractor shall implement these measures during ground disturbing activities. The project applicant shall verify compliance that these measures have been implemented during normal construction site inspections.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-2 would ensure that the construction contractor complies with BAAQMD's best management practices to reduce fugitive dust to less than significant levels.

Operational Emissions

The proposed project would generate an increase in criteria air pollutant emissions from mobile sources (on-road vehicles and buses) and area sources (landscape fuels, consumer product use of aerosols, architectural coating, asphalt pavement, and propane from fire pits). As shown in Table 4.2-7, *Operational Criteria Air Pollutant Emissions Estimates*, the operational emissions generated by the project would not exceed the BAAQMD daily pounds per day or annual tons per year project level threshold.[24] Therefore, the proposed project would not cumulatively contribute to the nonattainment designations of the SFBAAB. Project-related operation activities to the regional air quality would be *less than significant*.

TABLE 4.2-7 OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (tons per year)			
Category	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	<1	<1	<1	<1
Energy	<1	<1	<1	<1
On-Road Mobile	<1	<1	<1	<1
Total	<1	<1	<1	<1
BAAQMD Annual Project-Level tons/yr Threshold	**10**	**10**	**15**	**10**
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No
	Criteria Air Pollutants (average pounds per day)			
Category	ROG	NO_x	PM_{10}	$PM_{2.5}$
Proposed Land Use in 2023	1	<1	<1	<1
BAAQMD Average Daily Project-Level lbs/day Threshold	**54**	**54**	**82**	**54**
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

Notes: Emissions may not total to 100 percent due to rounding; Reactive Organic Gases = ROG; Nitrogen Oxides = NO_x; Coarse Inhalable Particulate Matter = PM_{10}; Fine Inhalable Particulate Matter = $PM_{2.5}$
Source: CalEEMod Version 2020.4

[24] Further details are shown in Appendix B, *Air Quality and Greenhouse Gas Emissions*.

Significance without Mitigation: Less than significant.

AQ-3 The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass, so they can be more readily correlated to potential health effects.

Construction

The project would elevate concentrations of TACs and construction exhaust $PM_{2.5}$ in the vicinity of sensitive residential land uses (i.e., receptors) during construction activities. The nearest off-site sensitive receptors proximate to the project site include the residences surrounding the project site to the east and to the south. Construction activities would occur near these sensitive receptor locations. Consequently, a health risk assessment (HRA) of TACs and construction exhaust $PM_{2.5}$ was prepared for the project and is included in Appendix C of this Draft EIR.

Results of the analysis are shown in Table 4.2-8, *Construction Health Risk Assessment Results*.

TABLE 4.2-8 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS

	Project Level Risk[a, b]		
Receptor	Cancer Risk (per million)	Chronic Hazards	Construction Exhaust $PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Off-Site Resident	8.5	0.020	0.05
Threshold	10	1.0	0.3 $\mu g/m^3$
Exceeds Threshold	**No**	**No**	**No**

Notes: Cancer risk calculated using the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Health Risk Assessment guidance.
a. Construction phasing are based on the preliminary information provided by the applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 393 days.
Source: Lakes AERMOD Version 10.2.1, CalEEMod Version 2020.4.

The results of the HRA are based on the maximum sensitive receptor concentration over the approximately 18-month construction exposure period for off-site receptors, assuming 24-hour outdoor exposure, and averaged over a 70-year lifetime. Risk is based on the updated Office of Environmental Health Hazard Assessment (OEHHA) Guidance as follows:

- Cancer risk for the maximum exposed individual resident (MEIR), a single-family residence east of the site along Cull Canyon Road, from construction activities related to the project were calculated to be 8.5 in a million and would not exceed the significance threshold of 10 in a million. The calculated total

cancer risk for the off-site residents incorporates the individual risk for infant and childhood exposures into one risk value.

- For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than 1 for off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards would not exceed acceptable limits.
- The highest construction exhaust $PM_{2.5}$ annual concentration of 0.05 µg/m^3 at the MEIR was calculated to be less than the 0.3 µg/m^3 significance threshold. Therefore, impacts from $PM_{2.5}$ concentrations are less than significant.

Because the project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during construction, cancer risk impacts to off-site residences would be *less than significant*.

Significance without Mitigation: Less than significant.

Operation

Health Risk

Exposure to elevated concentrations of vehicle-generated $PM_{2.5}$ and TACs at sensitive land uses have been identified by CARB, the California Air Pollution Control Officer's Association, and BAAQMD as a potential air quality hazard. Operation of the proposed project would involve campfires that would be fueled by propane rather than wood, which would not generate $PM_{2.5}$. The project would not create new major sources of TACs, which are more commonly associated with industrial manufacturing or warehousing. Therefore, operation-related health risk impacts associated with the project are considered *less than significant*.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO, called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for periods of time and are subject to reduced speeds.

Congestion Management Plans (CMP) must align with *Plan Bay Area 2040*, and an overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle miles traveled and associated GHG emissions reductions under Senate Bill 375. While the proposed project would involve the construction of a new high school, it would be consistent with the overall goals of the *MTC/ABAG's Plan Bay Area 2040* as it would serve the population surrounding the project site. Additionally, the project would not conflict with the CMP because it would not hinder the capital improvements outlined in Alameda County's 2019 CMP

or alter regional travel patterns.[25] Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact.[26] Based on the traffic analysis conducted as part of this environmental analysis, the project would generate 22 peak hour trips during the AM and PM peak hour[27] and would not increase traffic volumes at affected intersections by more than BAAQMD's screening criteria of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, the project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity. Localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

Significance without Mitigation: Less than significant.

AQ-4 The proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Nuisance odors from land uses in the Bay Area are regulated under BAAQMD Regulation 7, Odorous Substances. BAAQMD Regulation 7, Odorous Substances, requires abatement of any nuisance generating an odor complaint. Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance.

Construction

During project-related construction activities on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Such brief exhaust odors generated during construction are less than significant.

Operation

The proposed project would involve the construction and operation of an outdoor recreation facility that would house up to five goats and up to 40 chickens. Farm animals housed at the project site have the potential to generate odors, primarily associated with manure. The manure produced onsite would

[25] Alameda County Transportation Commission. 2017, December. 2017 Congestion Management Program Report. https://www.alamedactc.org/wp-content/uploads/2018/11/2017_Alameda_County_CMP.pdf

[26] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on March 20, 2020.

[27] Based on data from the applicant, in which 3 buses, 5 staff vehicles, 1 food truck, and 2 water treatment trucks would be arriving onsite on Monday morning. During the week, it is assumed that only 5 staff vehicles would be entering or exiting the site per day.

remain onsite and would be composted rather than transported offsite. The primary sources of odors from manure are odorous raw materials, hydrogen sulfide, and ammonia released from materials containing nitrogen and anaerobic (without oxygen) decomposition. Under anaerobic conditions, methane gas, carbon dioxide, and sulfur compounds (e.g., hydrogen sulfide) are produced. The proposed yard for the goats and chickens is approximately 700 feet away from the nearest existing receptor and would be closer than the BAAQMD odor screening distance for a confined animal facility of one mile. As a result, odors from manure generated from the farm animals onsite have the potential to be significant in the absence of implementation of a manure management plan to ensure that odors from manure composting would not become a nuisance to nearby sensitive land uses.

Significance without Mitigation: Significant.

Impact AQ-4: The proposed project could result in odors from manure generated by farm animals onsite.

> Mitigation Measure AQ-4: The project applicant shall prepare and implement an Odor Management Plan (Plan) to ensure compliance with BAAQMD Regulation 1, Rule 1-301, Public Nuisance. The Plan shall control odors generated by manure collection and storage from the farm animals to ensure odors would not constitute a public nuisance. The Plan shall be prepared to the satisfaction of the Alameda County Community Development Director or their designee prior to occupancy permits. At minimum, the Plan shall include the following:
>
> - A sufficient buffer zone shall be implemented between the sensitive receptors and sources of odors
> - Soiled bedding shall be removed and replaced with new bedding (e.g., straw, wood shavings, wood pellets, etc.) on a daily basis.
> - Manure spills shall be cleaned upon occurrence.
> - The moisture content of stockpiled manure shall be minimized to reduce the potential for release of odorous compounds during storage (e.g., use of a tarp to cover stockpiled manure).
> - Dust suppression measures shall be implemented to prevent the release of odorous compound-carrying fugitive dust

Significance with Mitigation: Less than significant. Mitigation Measure AQ-3 would reduce odor impacts by requiring the project applicant to prepare an odor management plan to ensure odors would not constitute a public nuisance.

AQ-5 Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, could cumulatively contribute to air quality impacts in the Air Basin.

A project that exceeds BAAQMD's significance criteria in the context of emissions from all other development projected within the entire SFBAAB would cumulatively contribute to impacts. Project-related construction activities would not generate exhaust emissions that exceed BAAQMD's regional significance thresholds for criteria air pollutants but would generate fugitive dust during ground-

disturbing activities and could expose sensitive receptors to substantial pollutant concentrations of TACs. Furthermore, construction of the proposed project would exceed the Air District's cancer risk threshold of 10 in a million. Because the project operation would house five goats and 40 chickens, proposed project would generate odors from manure management. Therefore, in combination with past, present, and reasonably foreseeable projects, the project would result in a *significant* cumulative impact with respect to air quality.

Significance without Mitigation: Significant.

Mitigation Measure AQ-5: Implement Mitigation Measures AQ-2 and AQ-4.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-2 would reduce fugitive dust generated during ground-disturbing activities. Mitigation Measure AQ-4 would reduce odor impacts by requiring the project applicant to prepare an odor control/manure management plan. With these mitigation measures, regional and localized construction emissions would not exceed BAAQMD significance thresholds. Consequently, the project would not cumulatively contribute to the nonattainment designations of the SFBAAB and impacts would be less than significant with implementation of mitigation.

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4.3 BIOLOGICAL RESOURCES

This chapter describes existing biological resources at the project site and evaluates the potential impacts on biological resources associated with future development of the proposed project. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of the proposed project impacts, including cumulative impacts. Available background information used for this study included: records on occurrences of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW), designated critical habitat mapped by the U.S. Fish and Wildlife Service (USFWS), wetlands mapped as part of the National Wetlands Inventory (NWI) maintained by the USFWS, and the electronic inventory of rare and endangered plants maintained by the California Native Plant Society (CNPS), among other information sources.

An initial survey of the project site was conducted by the EIR biologist on March 16, 2021. The initial field survey effort was performed to determine existing conditions and potential for presence of sensitive biological resources. This was followed up by a second survey with the EIR biologist and botanist on April 18, 2022, to confirm field conditions and conduct systematic surveys for special-status plant species in the proposed development area of the project site. A third survey by the EIR botanist was conducted on May 31, 2022, to complete the systematic surveys for special-status plants in accordance with CDFW.[1] During the systematic surveys for special-status plants, all plant species encountered were identified to the degree necessary to determine rarity and a list of all species encountered species encountered. A list of all plant species observed during the systematic plant surveys is contained in Appendix D, *Biological Resources Information*, of this Draft EIR.

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) is responsible for implementation of the Federal Species Act (FESA) (16 United States Code 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.

[1] California Natural Resources Agency, California Department of Fish and Wildlife, 2018, *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities,* March 18.

If a listed species or its habitat is found to be affected by a project, then according to Section 7 of the FESA, all federal agencies are required to consult with USFWS and NOAA Fisheries when a federal nexus exists. The purpose of consultation with USFWS and NOAA Fisheries is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. A Section 10(a) incidental take permit applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under FESA, which typically requires preparation of an agency-approved habitat conservation plan to allow for the anticipated take.

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 taking 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 non-federal areas in knowing violation of any State law or in the course of criminal trespass. Section 9 does not provide any protection for candidate species and species that are proposed or under petition for listing.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MTBA) (16 US Code 703 et seq.) governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Moreover, the MBTA prohibits the take, possession, import, exports, transport, selling, purchase, barter—or offering for sale, purchase, or barter—any migratory bird, their eggs, parts, or nests, except as authorized under a valid permit.[2]

Federal Clean Water Act

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into "waters of the United States,"[3] including wetlands and non-wetland bodies of water that meet specific criteria. Pursuant to Section 404 of the federal Clean Water Act (CWA), a permit is required for any filling or dredging within waters of the United States. The permit review process entails an assessment of potential adverse impacts to USACE wetlands and jurisdictional waters, wherein the USACE may require mitigation measures. Where a federally listed species may be affected, a Section 7 consultation with the

[2] Code of Federal Regulations Title 50 Section 21.11.

[3] "Waters of the United States," as it applies to the jurisdictional limits of the authority of the USACE under the CWA, includes: all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; and wetlands adjacent to waters. The terminology used by Section 404 of the CWA includes "navigable waters" which is defined at Section 502(7) of the Act as "waters of the United States including the territorial seas."

USFWS may be required in instances where a federal nexus exists such as a potential impact on regulated waters. Where a Section 404 permit is required, a Section 401 Water Quality Certification would also be required from the Regional Water Quality Control Board (RWQCB).

Section 401(a)(1) of the CWA specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters shall provide the federal permitting agency with certification, issued by the state in which the discharge originates, that any such discharge will comply with the applicable provisions of the CWA. In California, the applicable RWQCB must certify that the project will comply with water quality standards. Permits requiring Section 401 Certification include USACE Section 404 permits and National Pollutant Discharge Elimination System (NPDES) permits issued by the Environmental Protection Agency under Section 402 of the CWA. NPDES permits are issued by the applicable RWQCB; the City of San Carlos is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

State Regulations

California Fish and Game Code

Section 1600 of the California Fish and Game Code requires that a project proponent notify the California Department of Fish and Wildlife (CDFW) of any proposed alteration of streambeds, rivers, and lakes. The intent is to protect habitats that are important to fish and wildlife. The CDFW may review a project and place conditions on the project as part of a Streambed Alteration Agreement. The conditions are intended to address potentially significant adverse impacts within the CDFW's jurisdictional limits.

California Fish and Game Code Section 3503.5 prohibits take, possession, or destruction of any raptor (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.

In addition, the Native Plan Protection Act of 1977 prohibits the taking, possessing, or sale within the State of any plants with a state designation of rare, threatened, or dangerous in the California Fish and Game Code Section 1900, et seq. Under specific circumstances, an exception to this prohibition allows landowners to take listed plant species when the owners first notify the CDFW and allot the agency at least 10 days to retrieve the plants before they are otherwise destroyed. Project impacts to these species are not considered significant unless the species are known to have a high potential of occurring within the area of disturbance on the project site.

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the CDFW. Its intent is to prohibit take and protect State-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, the CESA also applies the take prohibitions to species petitioned for listing (State candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, the CESA does not include listing provisions for

invertebrate species. Under certain conditions, the CESA has provisions for take through a 2081 permit or Memorandum of Understanding. In addition, some sensitive mammals and birds are protected by the State as Fully Protected Species. California Species of Special Concern (SSC) are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's California Natural Diversity Data Base (CNDDB), a database of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se but warrant consideration in the preparation of biological resources assessments.

California Porter-Cologne Water Quality Control Act

The RWQCB has regulatory authority over wetlands and waterways under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the RWQCB has regulatory authority over actions in waters of the U.S., through the issuance of water quality certifications under Section 401 of the CWA in conjunction with permits issued by the USACE under Section 404 of the CWA. When the RWQCB issues Section 401 certifications, it simultaneously issues general Waste Discharge Requirements for the project under the Porter-Cologne Water Quality Control Act. Activities in areas that are outside of the jurisdiction of the USACE (e.g., isolated wetlands, vernal pools, seasonal streams, intermittent streams, channels that lack a nexus to navigable waters, or stream banks above the ordinary high-water mark) are regulated by the RWQCB under the authority of the Porter-Cologne Water Quality Control Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

Other Statutes, Codes and Policies Affording Species Protection

The CDFW maintains an administrative list of California Species of Special Concern (SSC), defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as federally, but not State threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for State threatened or endangered status."

The CDFW's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. Section 15380 of the CEQA Guidelines clearly indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein. In contrast to species listed under the federal ESA or CESA, however, SSC have no formal legal status.

The CNPS is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the state, as listed in the *Inventory of Rare and Endangered Plants of California* (inventory). CNPS has recently updated its rating system for the rarity of special-status plants, and now includes both a California Rare Plant Rank and a Threat Rank. CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. Under Section 15380, CEQA provides protection for both State-listed species and for any other species which can be shown to meet the criteria for State listing. The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A (Presumed extinct in California), 1B (Rare, threatened, or endangered in California and elsewhere), and 2 (Rare and endangered in California, but are more common elsewhere) in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 (Plant species for which additional data is needed – a review list) and 4 (Plant species of limited distribution – a watch list).

Local Regulations

Alameda County General Plan and Castro Valley General Plan

The project site is located within the Castro Valley General Plan planning area. The Castro Valley General Plan sets forth the vision for the next 20 years of Castro Valley's evolution. Alameda County does not have a countywide Land Use or Circulation Element but has adopted area plans that meet the Government Code's requirements for these elements for Castro Valley and other unincorporated areas. As such, the General Plan for Castro Valley is part of the Alameda County General Plan serving as the Land Use and Circulation elements for the urbanized area of Castro Valley and establishing policies for other topics specific to Castro Valley. The Alameda County General Plan's countywide Housing, Resource Conservation, Open Space, Noise, Seismic Safety, and Safety Elements are also applicable to Castro Valley. The Castro Valley General Plan has been written to be consistent with all of their policies and provisions.

TABLE 4.3-1 CASTRO VALLEY GENERAL PLAN POLICIES RELEVANT TO BIOLOGICAL RESOURCES

Goal/Policy/Action Number	Text
Goal 5.1-1	Protect and enhance the hillsides, canyons, and creeks that are the foundation of Castro Valley's natural setting and visual character as well as the views of these resources from public streets, parks, trails, and other community facilities.
Goal 7.1-1	Protect Castro Valley's native wildlife through conservation and restoration of natural habitat.
Policy 7.1-1	Major Wildlife Corridors Protection. Protect the major wildlife corridors that run through or are adjacent to Castro Valley (1) the corridor along the East Bay Hills in the forest and chaparral between major interstate highways; and (2) along creeks
Policy 7.1-2	Comprehensive Habitat Preservation. Preserve a continuous band of open space consisting of a variety of plant communities and wildlife habitat to provide comprehensive rather than piecemeal habitat conservation.
Policy 7.1-5	Riparian Habitat. New development shall not disturb any riparian habitat.
Action 7.1-6	Riparian Woodlands and Wetlands Mitigation - Discourage loss of riparian woodlands and seasonal and perennial wetlands, including ponds, by requiring replacement mitigation at a ratio to be determined by the value of the habitat to be lost. To facilitate replacement

TABLE 4.3-1 CASTRO VALLEY GENERAL PLAN POLICIES RELEVANT TO BIOLOGICAL RESOURCES

Goal/Policy/Action Number	Text
	mitigation, the County shall support the creation of wetland or other habitat mitigation banks.
Action 7.1-7	Preservation and Protection of Riparian Vegetation. Consider adopting an ordinance to preserve and protect riparian vegetation, with exceptions for clearing hazards, clearing blocked channels, and other activities necessary for public safety.
Action 7.1-9	Connect Open Space to Large Habitat Areas. In the review of new subdivisions and other new development, require the preservation of adequately wide strips of undisturbed land to connect larger tracts of natural habitat or areas with biological resources.
GOAL 7.2-1	Preserve and restore creek channels, and riparian habitat to protect and enhance wildlife and aquatic-life corridors, flood protection, and the quality of surface water and groundwater.
Policy 7.2-2	Creek Setbacks. Establish adequate creek setbacks to maintain and where appropriate enhance important stream functions.
Policy 7.2-3	Creek Uses. Manage creeks for multiple uses including: scenic quality, recreation, water quality, soil conservation, groundwater recharge, and wildlife habitats.
Policy 7.2-4	Natural/Nonstructural Creek Drainage Systems. Use and reclaim or fully restore natural or nonengineered creek drainage systems to the maximum extent feasible and look for opportunities to convert structural stormwater drainage systems to natural or semi-natural creeks.
Action 7.2-1	Alameda County's Watercourse Protection Ordinance. Revise the County's Watercourse Protection Ordinance to ensure maximum protection of creeks and adjacent riparian habitat by requiring new development to provide sufficient setbacks and rights-of-way to meet the County's objectives for storm drainage, flood control, habitat protection, recreation, and other appropriate uses. Include the following provisions: ▪ Do not allow grading or structures within a creek bed, unless they are required to prevent flooding and erosion that pose an imminent hazard to public health and safety, or to prevent serious property damage; ▪ Require the preservation and/or restoration of natural drainage and habitat to the ▪ maximum extent feasible, without causing further acceleration of water flow or erosion ▪ further downstream; ▪ Increase the setback for habitable structures to ensure adequate distance between structures and an open creek channel. ▪ Require construction methods that minimize flooding and erosion; ▪ Consider limiting the amount of impervious surface within 100 feet of the top of the creek bed channel to limit erosion and acceleration of water flow into the creek channel; ▪ Establish basic standards for development in or near creekside areas, in order to clarify and expedite the permitting process; ▪ Require preparation of a creek protection plan for new construction or significant expansion on creekside properties. The creek protection plan shall: be prepared by qualified professionals; establish areas most suitable for construction; and identify construction procedures that will minimize impacts n creek channels and riparian vegetation.
GOAL 7.3-1	Maintain, preserve, and enhance trees and vegetation to provide environmental and aesthetic benefits.
Policy 7.3-2	Native Environment. Maintain and enhance the existing environment by preserving existing native trees and plants whenever feasible, replacing trees on-site, and adding trees and other vegetation in the public right-of-way.
Action 7.3-1	Enforcement of Alameda County Tree Ordinance. Ensure that there is sufficient funding to enforce the Alameda County Tree Ordinance. Require permits for planning, pruning, or removing trees in the public right-of-way
Action 7.3-2	Heritage Trees. Consider amending the Tree Ordinance to preserve and protect heritage trees

TABLE 4.3-1 CASTRO VALLEY GENERAL PLAN POLICIES RELEVANT TO BIOLOGICAL RESOURCES

Goal/Policy/Action Number	Text
	including native oaks and other significant native trees on private property.

Source: Alameda County 2012, *Castro Valley General Plan.*

Alameda County Municipal Code

The Alameda County Municipal Code (ACMC) contains all ordinances for the unincorporated areas of the county. The ACMC is organized by Title, Chapter, and Section.

The Tree Ordinance (Chapter 12.11 of the ACMC) provides protection for any tree in a public right-of-way that is at least ten feet in height and has a trunk that is at least two inches in diameter. The Tree Ordinance does not address protection of trees on private property.

The Watercourse Protection Ordinance (Chapter 13.12 of the ACMC) applies across the unincorporated area of Alameda County. Its purpose is to safeguard and preserve watercourses, protect lives and property, prevent damage due to flooding, protect drainage facilities, control erosion and sedimentation, and enhance the recreational and beneficial uses of watercourses. The Ordinance requires that property owners with watercourses obtain a watercourse permit by the Alameda County director of public works.

4.3.1.2 EXISTING CONDITIONS

As shown on Figure 3-2 in Chapter 3, *Project Description*, of this EIR, the majority of the 37-acre property consists of oak-bay woodland and scrub on the steep slopes adjacent to the proposed development area, dominated by coast live oak (*Quercus agrifolia*) and California bay (*Umbellularia californica*). The understory in the woodland varies, with some locations supporting grassland and scrub species. Where the tree cover is dense, understory species are typically sparse, consisting of poison oak (*Toxicodendron diversilobum*), twinberry honeysuckle (*Lonicera involucrata*), snowberry (*Symphoricarpos albus* var. *laevigatus*), toyon (*Heteromeles arbutifolia*), California blackberry (*Rubus ursinus*), false Solomon's seal (*Maianthemum stellatum*), and bedstraw (*Galium* spp.).

Vegetation and wildlife habitat within the proposed two-acre development area reflects a history of past disturbance associated with past land use on 0.6 acres of the property. Most of the proposed development area supports a cover of non-native ruderal (weedy) cover, ornamental trees, shrubs, and turf, and remnant scattered oaks and other native trees. The Cull Creek riparian corridor bisects the developed area of the site, supporting a cover of native trees and shrubs. The following provides a summary of the characteristic vegetation and wildlife habitat conditions found within the proposed development area.

The majority of the proposed development area is occupied by roadways and structures, or supports a cover of ruderal grassland and ornamental plantings. Where the tree canopy is open or sparse, non-native grasses and forbs form the dominant vegetative cover over the portions of the project site proposed for development. Common species include slender wild oats (*Avena barbata*), bromes (*Bromus* spp.), red stemmed filaree (*Erodium cicuturium*), common vetch (*Vicia sativa* ssp. *sativa*), thistles (*Sonchus* spp.),

clovers (*Trifoium* spp.), bristly ox-tongue (*Helminthotheca echioides*), forget-me-not (*Myosotis latifolia*), and dock (*Rumex* spp.), among others. Native grasses and forbs are scattered along the margins of disturbed areas, such as purple needle grass (*Stipa pulchra*), foothill needlegrass (*Stipa lepida*), miner's lettuce (*Claytonia perfoliata*), and fireweed (*Epilobium* spp), among others. However, the native component is not high enough or cover an area large enough to be considered a sensitive natural community type recognized by the CDFW, which typically calls for a native component of 10 percent or more of grasses and forbs.

Trees in the proposed development area include scattered native coast live oaks, bays, and California buckeye (*Aesculus californica*). Non-native pines (*Pinus ponderosa*), English walnut (*Juglans regia*), coast redwood (Sequoia sempervirens), area also scattered throughout the proposed development area as part of previous landscape improvements, together with smaller fruit trees, ornamental shrubs, groundcovers, and areas of turf. Native trees along the Cull Creek riparian corridor include white alder (*Alnus rhombifolia*), sycamore (*Platanus racemose*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), coast live oak, and buckeye. The mature trees and other ornamental landscaping provide foraging, roosting and possibly nesting locations for birds associated with the native woodlands and grasslands, as well as suitable habitat for species commonly associated with suburban habitats, such as American robin, northern mockingbird, mourning dove, and brown towhee, among others. The developed areas also support common non-native pest species such as house mouse, Norway rat, and opossum.

The surrounding woodlands and riparian habitat along Cull Creek provide denning, nesting and foraging opportunities for numerous species of small mammals, reptiles, and birds. Mammals and reptiles found in the project site vicinity likely include deer mouse, California vole, Botta's pocket gopher, stripped skunk, racoon, blue-bellied lizard, western skink, newts, ensatina, ring-necked snake, gopher snake, and western rattlesnake, among others. Larger mammals such as black-tailed deer and predatory species such as grey fox, red fox, coyote, and possibly occasionally mountain lion most likely forage throughout the woodlands and grasslands in the site vicinity. The trees provide nesting cavities, perching and foraging opportunities, and nesting substrate for numerous species of birds, including jays, woodpeckers, kinglets, and bushtits. Although no large stick nests were observed during the site surveys, several species of raptors likely utilize the mature trees for roosting and possibly nesting with foraging in the understory and open grasslands to the east of the project site. These include red-tailed hawk, Cooper's hawk, white-tailed kite, turkey vulture, great-horned owl, American kestrel, and barn owl, among others.

Special-Status Species

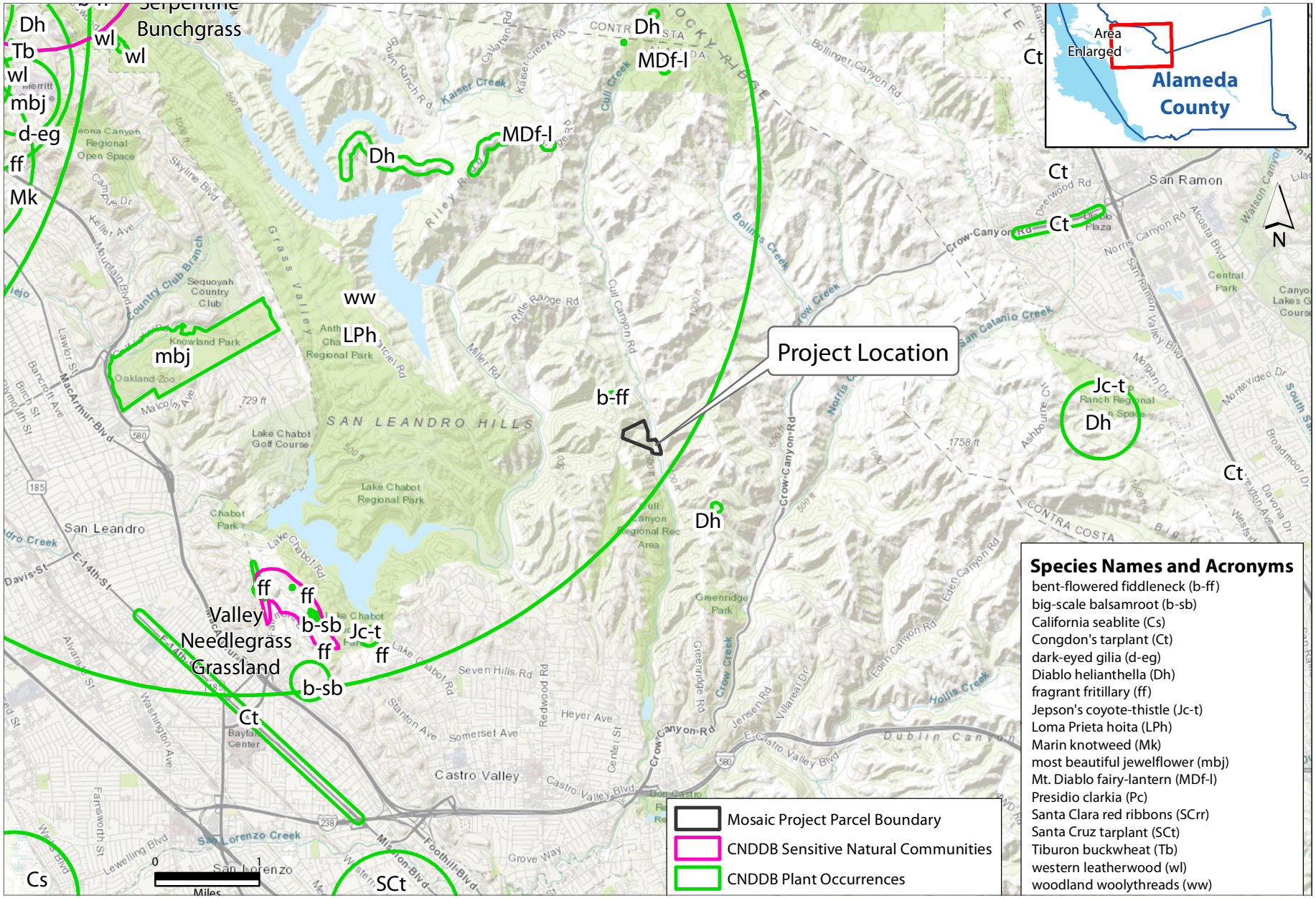
Special-status species[4] are plants and animals that are legally protected under CESA and/or FESA or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species protected by the CESA and FESA often represent major constraints to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[5] of these species.

Based on data from the CNDDB and other information sources, numerous special-status plant and animal species have been reported from the surrounding area of Castro Valley and Cull Canyon watershed. Figure 4.3-1, *Special-Status Plants and Sensitive Natural Communities,* and Figure 4.3-2, *Special-Status Animals and Critical Habitat*, show the known occurrences of special-status plant and animal species respectively in the Castro Valley area based on the CNDDB inventor, which indicates that there are no known occurrences from the project site or immediate vicinity. Very broad occurrences for two special-status plant species—woodland woollythreads (*Monolopia gracilens*) and Loma Prieta hoita (*Hoita strobilina*) extend over the watershed lands of the San Leandro Hills and upper Cull Canyon watershed, however these are occurrences are based on very general records as no special-status plant species were detected within the proposed development area during systematic field surveys as discussed below. As indicated in Figure 4.3-2, the western edge of the project site is located within a few hundred feet of designated critical habitat for the State and federally-threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*). Critical habitat is a term in the Endangered Species Act for areas designated by the USFWS that have features essential for the conservation of a threatened or endangered species and which may require special management considerations.

[4] Special-status species include:

- Officially designated (rare, threatened, or endangered) and candidate species for listing identified by the CDFW;
- Officially designated (threatened or endangered) and candidate species for listing identified by the USFWS;
- Species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those with a rank of 1 or 2 in the *Inventory of Rare and Endangered Plants of California* maintained by the California Native Plant Society (CNPS); and
- Possibly other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those with a rank of 3 and 4 in the CNPS *Inventory* or identified as animal "Species of Special Concern" (SSC) by the CDFW which have no legal protective status under CESA but are of concern to the CDFW because of severe decline in breeding populations in California.

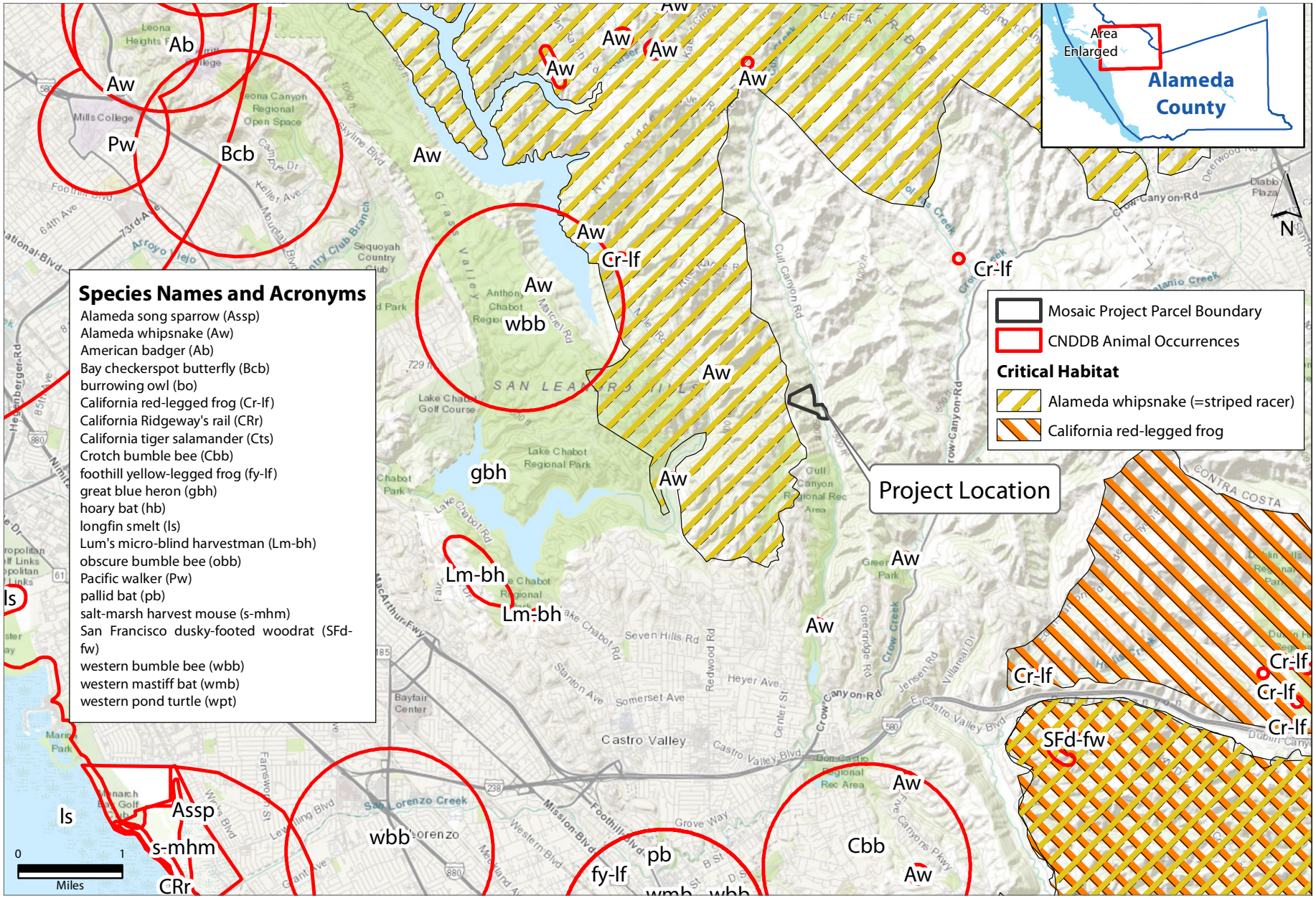
[5] "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.



Source: California Natural Diversity Database release date 5/1/2022 accessed on 6/6/2022;
Basemap by: ESRI. Map produced by www.digitalmappingsolutions.com on 6/7/2022.

Figure 4.3-1

Special-Status Plants and Sensitive Natural Communities



Source: California California Natural Diversity Database release date 5/1/2022 accessed on 6/6/2022; USFWS critical habitat data release date 6/3/2022 accessed on 6/6/2022. Basemap by: ESRI.
Map produced by www.digitalmappingsolutions.com on 6/7/2022.

Figure 4.3-2
Special-Status Animals and Critical Habitat

A habitat assessment was conducted by the EIR biologist as part of the field surveys of the proposed development area. Suitable habitat for most special-status species known from the surrounding area is generally absent from the proposed development area on the site, with the possible exception of nesting raptors and other native birds protected under the Migratory Bird Treaty Act and California Fish and Game Code, roosting bat species, and potential for dispersal by Alameda whipsnake, San Francisco dusky footed woodrat (*Neotomes fuscipes annectens*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), and mountain lion (*Puma concolor*). Perennial stream corridors like Cull Creek in the Castro Valley area were once used by the federally listed threatened steelhead (*Oncorhynchus mykiss*) for migration and spawning, but the downstream dam to the Cull Canyon Reservoir prevents movement of fish into the upper reaches. Below is a summary of the special-status plant and animal species known from the Castro Valley vicinity, which includes conclusions regarding presence or absence from the proposed development area.

Special-Status Plants. A number of plant species with special status have been reported in the CNDDB from the Castro Valley area, and based on recorded geographic range and preferred habitat, numerous other species may potentially occur in the project site vicinity. As indicated in Figure 4.3-1, 18 species have been reported by the CNDDB within about 5 miles of the project site. These consist of bent-flowered fiddleneck (*Amsinckia lunaris*), big scale balsamroot (*Balsamorhiza macrolepis*), California seablite (*Suaeda californica*), Congdon's tarplant (*Centromadia parryi* var. *congdonii*), dark-eyed gilia (*Gilia millefoliata*), Diablo helianthella (*Helianthella castanea*), fragrant fritilary (*Fritillaria liliacea*), Jepson's coyote-thistle (*Eryngium jepsonii*), Loma Prieta hoita (*Hoita strobilina*), Marin knotweed (*Polygonum marinense*), most beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), Presidio clarkia (*Clarkia franciscana*),Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), Santa Cruz tarplant (*Holocarpha macradenia*), Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*), western leatherwood (*Dirca occidentalis*), and woodland woolythreads. Information on status and occurrence distribution from the CNDDB on each of these species is provided in Appendix D.

As described above, systematic surveys were conducted to determine whether any special-status plant species are present on the proposed development area of the project site. A field reconnaissance survey was performed on March 16, 2021, followed by detailed surveys on April 18 and May 31, 2022, during which all plants encountered within the proposed development area were identified to the degree necessary to determine possible rarity. A list of plant species encountered within the proposed development area on the project site is contained in Appendix D. No special-status plant species were encountered during the surveys or are believed to be present within the proposed development area on the project site.

Special-Status Animals. A number of bird, mammal, reptile, fish, and invertebrate species with special status are known or suspected to possibly occur in the central Contra Costa County vicinity. Figure 4.3-2 shows the distribution of the 16 special-status species animal species within about 5 miles of the project site, based on records maintained by the CNDDB. These include Alameda whipsnake (*Masticophis lateralis euryxanthus*), American badger (*Taxidea taxus*), Bay checkerspot butterfly (*Euphydryas editha bayensis*), burrowing owl (*Athene cunicularia*), California red-legged frog, California tiger salamander (*Ambystoma californiense*), Crotch bumblebee (*Bombus crotchii*), foothill yellow-legged frog (*Rana boylii*). great blue heron (*Ardea herodias*), hoary bat (*Aeorestes cinereus*), obscure bumble bee (*Bombus caliginosus*), pallid bat (*Antrozous pallidus*), San Francisco dusky-footed woodrat (*Neotomes fuscipes annectens*), western

bumble bee (*Bombus occidentalis*), western mastiff bat (*Eumops perotis*), and western pond turtle. Six species associated with salt marsh habitat and other habitat conditions are listed in the CNDDB, but not found anywhere near the project site, such as Alameda song sparrow (*Melospiza melodia pusillula*), California Ridgeway's rail (*Rallus obsoletus*) longfin smelt (*Spirinchus thaleichthys*), and salt marsh harvest mouse (*Reithrodontomys raviventris*). The following provides a summary of special-status animal species considered to have the highest potential for occurrence in the project site vicinity and conclusion with regard to presence or absence within the proposed development area on the project site.

Amphibians and Reptiles

Most of the special-status amphibian and reptile species known from the surrounding region are dependent on aquatic habitat not found within the project site or surrounding area, including California tiger salamander, California red-legged frog, western pond turtle, and foothill yellow-legged frog. None of these four species has been reported or observed within the Cull Canyon watershed, and suitable pond or pool habitat necessary for successful breeding and refugia for western pond turtle and California red-legged frog is absent on the project site. Similarly, suitable cobble substrate with aquatic vegetation necessary to support foothill-yellow legged frog is absent along the project reach of Cull Creek. However, there remains a remote possibility that California red-legged frog, western pond turtle, or foothill yellow-legged frog could disperse along the Cull Creek corridor at some point in the future in search of suitable breeding and foraging habitat.

The range of the federally and State-threatened Alameda whipsnake is restricted to the inner Coast Range in western and central Contra Costa and Alameda Counties. Typical habitat characteristics for Alameda whipsnake consists of stands of chaparral and scrub habitat that contain abundant prey species such as western fence lizard, with abundant areas for sunning and other behaviors. This subspecies is known to utilize adjacent areas of grassland, woodland and riparian habitats, but chaparral and scrub habitats are essential for occupation in an area. The portion of the project site proposed for development is separated from the designated critical habitat for Alameda whipsnake by the dense oak-bay woodlands that occupy most of the east-facing slopes on the upper elevations of the property. The open grasslands that dominate the rolling hills to the east of the project site are unsuitable for permanent occupation by Alameda whipsnake, as are the disturbed conditions of the proposed development area, however, the potential remains for individuals to occasionally disperse through the woodlands and areas of scrub habitat at the upper elevations of the project site.

Birds

Most of the special-status animal species known or suspected to occur in the site vicinity are bird species which may forage and possibly nest where suitable nesting substrate is present. These include Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), western burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus caeruleus*), California horned lark (*Eremophila alpestris actia*), prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and yellow warbler (*Dendroica petechia*). Golden eagle, northern harrier,

yellow warbler, California horned lark, and loggerhead shrike are considered California SSC by the CDFW.[6] White-tailed kite and golden eagle are fully protected species, and golden eagle is also protected under the federal Bald Eagle Protection Act. The other species are monitored to varying degrees by the CNDDB, focusing on nest locations. Some were previously considered California SSC by the CDFW but have been removed from this list as new data indicates they are more abundant than previously believed.
Suitable nesting habitat is generally absent for American peregrine falcon, golden eagle, and prairie falcon on the project site, due to the absence of cliffs and other nesting substrate and the intensity of human activity in the area, but these species may occasionally forage in the grasslands and open woodlands in the site vicinity. Similarly, the absence of ground squirrels in the proposed development area limits its suitability for nesting by western burrowing owl. Potentially suitable habitat for the remaining species, and other more common bird species is present in the areas of woodland vegetation, scattered trees, and dense brush. More common raptors such as the great-horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) may nest in mature trees on the project site and vicinity, as well as the potential for nesting by more common bird species. A nesting colony of great blue heron was reported by the CNDDB from the eastern shoreline of Lake Chabot, but suitable communal roosting habitat for this species is absent on the project site.

Nests of native bird species are protected under the MBTA when in active use, and nests of raptors (birds-of-prey) are also protected under State Fish and Game Code when in active use. No nesting locations have been identified by the CNDDB for special-status bird species in the project site vicinity or were observed during the field surveys of the proposed development area on the project site. No evidence of any nesting activity was detected and none of these species were observed during field surveys of the project site. However, there remains a potential for new nests to be established in the future. Preconstruction surveys are typically preformed to avoid disturbance or inadvertent abandonment of nests in active use when vegetation removal or construction is to be initiated during the nesting season (typically from February 1 through August 31).

Mammals

A number of special-status animal species are known or suspected from the region, including San Francisco dusky-footed woodrat, several bat species, American badger, and mountain lion. As indicated in Figure 4.3-2, occurrences of pallid bat, hoary bat, and western mastiff bat have been reported from the Castro Valley vicinity by the CNDDB, and other bat species such as Townsend's western big eared bat (*Corynorhinus townsendii*) are known from the region. Pallid and Townsend's western big-eared bat are considered California SSC by the CDFW. Roost locations of hoary bat and other bat species on the *Special Animals List*[7] maintained by the CDFW are infrequently monitored by the CNDDB. Suitable habitat varies for each species, but roosting locations can include trees, tree cavities, abandoned or little used buildings, caves, mines, and cliff faces. No bats or evidence of bat occupation was observed during field surveys of

[6] "California Species of Special Concern" (SSC) have no legal protective status under the California Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations and other factors.

[7] California Department of Fish and Wildlife, California Natural Diversity Data Base, 2022, *Special Animals List*, April.

the proposed development area on the project site, but individuals could occupy cavities in some of the larger trees or could establish roosts in advance of construction.

The San Francisco dusky-footed woodrat is considered a California SSC by the CDFW. It is a year-round resident in the San Francisco Bay area, preferring scrub and wooded areas, and feeds primarily on nuts, fruits, fungi, foliage, and forbs. It typically builds large terrestrial stick nests that range from 2 to 5 feet in height and can be up to 8 feet in basal diameter. These nests are usually placed on the ground or against a log or tree and are often within dense brush. A number of characteristic stick nests of this species were observed along the fringe of the proposed development area at the southern edge of the site and along the Cull Creek corridor. Suitable scrub and woodland required by this species is generally absent in the proposed development area, which has been highly disturbed.

Several other special-status mammal species have varying potentials for occurrence on the project site. Mountain lion is fully protected under State Fish and Game code and the evolutionarily significant unit (ESU) encompassing Southern California and the central coast is currently designated as a candidate species by the CDFW. The Fish and Game Commission is currently conducting a status review of mountain lions within the proposed ESU. At the end of the review, CDFW will make its recommendation on listing to the Commission. Under CESA, species classified as a candidate species are afforded the same protection as listed species. Mountain lions have large home ranges that may include heterogenous habitats including riparian, chaparral, oak woodlands, coniferous forests, grasslands, and occasionally rocky desert uplands. Individuals are known to forage and disperse through the open space and undeveloped lands to the north of Castro Valley. The project site and adjacent undeveloped land lacks suitable denning locations for this species and the proposed development area is not considered essential habitat for mountain lions given the extent of past disturbance and proximity of existing development. However, it most likely forages and moves across the project site and surrounding areas.

Similarly, American badger is also recognized as a California SSC by CDFW and may occasionally forage through the grasslands and open woodlands in the vicinity, but suitable grassland foraging habitat is absent from the proposed development area on the site and no evidence of dens or diggings by this species were observed during the field surveys. The Cull Creek corridor provides suitable foraging habitat for ringtail (*Bassaricus astutus*), which is recognized by the CDFW as a California SSC. But no suitable denning habitat was observed for ringtail within the proposed development area on the site.

Other mammal species known or suspected from the region are not believed to occur on the project site because of the absence of suitable habitat and distance from known occupied habitat. These species include San Joaquin kit fox (*Vulpes macrotis mutica*), which occurs in grassland and alkali scrub habitat to the east of Livermore and Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), which is now presumed to be extinct.

Fish and Invertebrates

Suitable habitat for the fish and invertebrate species reported in the CNDDB from the Castro Valley vicinity is generally low to absent from the project site. Suitable aquatic habitat for special-status fish such as steelhead (*Oncorhynchus mykiss*) is absent from the reach of Cull Creek on the project site due to downstream barriers at Cull Canyon Reservoir. Crotch bumblebee, western bumblebee, and obscure

bumblebee, which have been reported from the Castro Valley vicinity and are found in a variety of habitats, technically do not have any legal protective status under the State or federal Endangered Species Acts, but records on their distribution in the western United States are now being more closely monitored by the CNDDB and other data bases because of a dramatic decline in numbers and distribution over the past two decades. Due to declines, the western bumblebee has experienced a considerable range contraction and is now considered to be confined to higher elevations in the Sierra Nevada range and portions of the Northern California coast and is no longer suspected to occur in the Castro Valley vicinity. Crotch bumblebee and obscure bumblebee are typically known from grassland and scrub habitat, making their possible presence within the proposed development area on the project site highly unlikely given the extent of past and on-going disturbance to the remaining areas of ruderal grassland cover and the dominance of woodland habitat. The presence of any of these three bumblebee species on the project site, either foraging or nesting, is highly unlikely.

Sensitive Natural Communities

Sensitive natural communities are community types recognized by CDFW and other agencies because of their rarity. In the Castro Valley area, sensitive natural community types include riparian woodlands, freshwater marshlands, and native grasslands, among other community types. Figure 4.3-1 shows the distribution of known occurrences of native grasslands reported by the CNDDB in the surrounding area of Castro Valley, none of which have been mapped on or near the project site.

Based on the findings of the field surveys of the EIR biologist, the riparian woodlands associated with Cull Creek qualify as a sensitive natural community type. The riparian woodlands are dominated by deciduous native trees and shrubs which form a near continuous canopy along the creek corridor. The bank and bed of the Cull Creek reach on the project site have been extensively modified by past flood control and bank stabilization efforts, but mature native trees remain or have become re-established and continue to dominate the corridor, providing important shade to the aquatic habitat of the creek. No areas of native grassland remain in the proposed development area on the project site. The surrounding oak woodlands, while considered important for their wildlife habitat value, are dominated by coast live oak and California bay, which are widespread and common species. The 0.6 acres of disturbed area on the project site are now dominated by non-native ruderal species and ornamental landscaping.

Jurisdictional Waters

The CDFW, Corps, and RWQCB have jurisdiction over modifications to riverbanks, lakes, stream channels and other regulated waters as discussed above under Section 4.3.1.1, *Regulatory Framework*. 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. Where wetland vegetation is absent, federally regulated waters occur along stream channels below the Ordinary High Water Mark (OHWM). State waters regulated by the RWQCB and CDFW extend to the top of bank or limits of riparian vegetation beyond the top of bank along natural drainage channels, whichever is greater.

Based on the results of the preliminary wetland assessment performed as part of the surveys of the proposed development area of the project site, jurisdictional waters are limited to the Cull Creek corridor and segments of an ephemeral drainage that is partially culverted along the southern boundary of the property. Cull Creek is a perennial stream with a well-defined bed and steeply incised banks. As noted above, the banks of Cull Creek have undergone extensive modifications as part of past erosion control efforts by a previous property owner. Much of the western creek bank is armored by a post and open cable system that was presumably installed to help prevent severe erosion. Concrete rubble has been installed along the creek bed in some locations, particularly near the existing bridge crossing. The partially culverted southern drainage doesn't have an actively eroded bed and bank downstream of the culverted reach, and wetland vegetation is generally absent along the natural reach of this feature.

Cull Creek is a regulated federal water below the OHWM and a regulated State waters to the top of bank or limits of woody riparian vegetation, whichever is greater. The remaining uncovered segment of the southern ephemeral drainage likely qualify as a State Waters regulated by the CDFW and RWQCB, which extends to the top of bank where woody riparian vegetation is absent. Recent changes and litigation regarding federal waters make it unclear whether the remaining un-culverted reach of the southern ephemeral drainage is regulated by the Corps under Section 404 of the Clean Water Act. Authorization is typically required from regulatory agencies before any modifications to jurisdictional waters is allowed.

Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by impassible barriers, large bodies of water, distinct changes in cover, and intensive human activity, among other factors. Urbanization and the resulting fragmentation of undeveloped open space areas can create isolated "islands" of wildlife habitat, separating populations that can lead to genetic isolation and sometimes extirpation. Corridors act as an effective link between populations, allowing for genetic exchange and recruitment of dispersing individual animals where the local carrying capacity, competition and other influences allow.

The project site is part of the largely undeveloped watershed lands of Cull Canyon, which remains permeable to wildlife movement opportunities. Cull Creek likely serves as an important corridor for wildlife movement, as does the undeveloped ridgeline and woodlands of the upper elevations of the project site. An existing cyclone fence along the Cull Canyon Road frontage of the project site limits opportunities for wildlife movement near the entrance onto the property, but larger terrestrial species have likely learned to navigate around this and other fencing in the area. Deer, grey fox, coyote and other terrestrial species currently have relatively unrestricted access to the undeveloped surrounding lands.

Habitat Conservation Plans

The project site is not located within the planning area of an adopted Natural Community Conservation Plan or Habitat Conservation Plan and none are located in the surrounding area of Castro Valley. The project would therefore not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

4.3.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact to biological resources if it would:

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

4.3.3 IMPACT DISCUSSION

BIO-1	**The proposed project could 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 US Fish and Wildlife Service.**

In general, the proposed project is not expected to have any substantial adverse impacts on special-status species known or suspected from the Castro Valley area. The systematic field surveys conducted in spring of 2022 confirmed absence of any special-status plant species within the proposed development area on the project site and no adverse impacts are therefore anticipated.

As discussed above in Section 4.3.1.2, *Existing Conditions*, the habitat suitability analysis conducted as part of the field surveys by the EIR biologist determined that suitable habitat for most special-status animal species is absent from the proposed 2-acre development area on the project site. However, the potential for disturbance of suitable habitat for the San Francisco dusky-footed woodrat, roosting habitat for several special-status bats, and active bird nests protected under federal and State regulations tree removal, building demolition and other disturbance could affect suitable habitat for San Francisco dusky-footed woodrat, roosting habitat for several special-status bats, and active bird nests protected under federal and State regulations, if present within the proposed development area during construction. In

addition, there is a remote possibility that Alameda whipsnake could disperse across the proposed development area or that California red-legged frog or western point turtle could disperse along the Cull Creek corridor and could be inadvertently harassed or injured. The following section provides an assessment of the potential impacts on these special-status species, together with recommended measures where potentially significant impacts could occur.

Nesting Raptors and other Native Birds

Grading and other construction activities would require the removal of an estimated 44 trees, other vegetation and existing structures which provide suitable nesting habitat for numerous species of raptors and well as more common native bird species. Destruction of an active nest would be a violation of the Migratory Bird Treaty Act and State Fish and Game Code, and appropriate avoidance measures would be required to ensure compliance with these regulations. Vegetation removal and other construction activities in close proximity of nests in active use could lead to nest abandonment, unless appropriate seasonal restrictions are implemented. Destruction of bird nests in active use or activities that could lead to nest abandonment would also be a violation of the federal and State regulations.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in the Castro Valley area is typically from September 1 to January 31, or to conduct a nesting survey within 7 days prior to initial tree removal and construction to determine whether any active nests are present that must be protected until any young have fledged and are no longer dependent on the nest. Protection of the nest(s), if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, vegetation removal and other construction activities associated with the proposed project could adversely affect nesting birds which would be a potentially *significant* effect.

Significance without Mitigation: Significant.

Impact BIO-1.1: Removal of vegetative cover during project construction may result in the inadvertent destruction of active nests of raptors and other native birds unless appropriate precautions are followed.

> Mitigation Measure BIO-1.1: Adequate measures shall be taken to avoid inadvertent take of bird nests of native species protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use. This shall be accomplished by taking the following steps:
>
> - If tree removal and initial construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction. The proposed development area of the project site shall be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or curtailed for more than 7 days during the nesting season.

- If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), tree and vegetation removal, building demolition, and project construction may proceed with no restrictions.
- If bird nests are found, an adequate setback shall be established around the nest location and vegetation removal, grading, and other construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on nest location, species, and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the proposed development area on the project site.
- A report of findings shall be prepared by the qualified biologist and submitted for review and approval by the County prior to initiation of vegetation removal, building demolition, grading and other construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. Following approval by the County, tree removal, building demolition, and construction within the nest buffer zone may proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season (September 1 to January 31) and continues uninterrupted according to the above criteria.

Significance with Mitigation: Less than significant.

Roosting Bats

Tree removal, building demolition, and construction disturbance as part of grading and construction in the immediate vicinity of an active bat roost could affect special-status bats and other more common bats, if present. Direct impacts on bats could occur if construction activities resulted in direct mortality or the disruption or abandonment of an active bat roost(s). While no evidence of any active bat roots was observed during the field surveys of the proposed development area on the project site, the oak woodlands, dense ornamental tree plantings, and existing structures provide suitable roosting habitat.

A standard method to address the potential for roosting bats is to conduct a roosting survey within 7 days prior to initial tree or building removal and construction to determine whether any active roosts are present that must be protected until any young have fledged and are no longer dependent on the roost. Protection of the roost, if present, would require that construction setbacks be provided, with the setback depending on the type of bat species, degree to which the individuals have acclimated to ongoing disturbance, and other factors. Without these controls, the tree removal, building demolition, and other construction activities could adversely affect roosting bats would be a potentially *significant* impact.

Significance without Mitigation: Significant.

Impact BIO-1.2: Removal of trees and existing structures during project construction may result in the inadvertent destruction of active bat roots unless appropriate precautions are followed. This impact does

not pertain to the off-site EVA alignment on the Vista Del Grande Terraces site because of a lack of mature trees and absence of potential bat roosting habitat along the EVA alignment.

Mitigation Measure BIO-1.2: Adequate measures shall be taken to avoid inadvertent take of special-status bat species if present in trees within the proposed development area on the project site. This shall be accomplished by taking the following steps.

- A qualified biologist shall visually inspect trees to be removed and buildings to be demolished for bat roosts within 7 days prior to their removal. The biologist shall look for signs of bats including sightings of live or dead bats, bat calls or squeaking, the smell of bats, bat droppings, grease stains or urine stains around openings in trees, or flies around such openings. Trees with multiple hollows, crevices, forked branches, woodpecker holes, or loose and flaking bark have the highest chance of occupation and shall be inspected the most carefully.
- If signs of bats are detected, confirmation on presence or absence shall be determined by the qualified biologist, which may include night emergency or acoustic surveys.
- Due to restrictions of the California Health Department, direct contact by workers with any bat is not allowed. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction.
- If an active maternity roost is encountered during the maternity season (April 15 to August 31), the CDFW shall be contacted for direction on how to proceed and an appropriate exclusion zone established around the occupied tree or structure until young bats are old enough to leave the roost without jeopardy. The size of the buffer would take into account:
  - Proximity and noise level of project activities;
  - Distance and amount of vegetation or screening between the roost and construction activities; and
  - Species-specific needs, if known, such as sensitivity to disturbance.

Significance with Mitigation: Less than significant.

San Francisco Dusky-footed Woodrat

The riparian woodland along the Cull Creek corridor and the dense oak-bay woodlands that surround the proposed development area provide suitable habitat for San Francisco dusky-footed woodrat. If nests are present within the limits of proposed development, they could be inadvertently destroyed as a result of vegetation clearing and grading, resulting in a loss of active nests and individual woodrats. Preconstruction surveys would be necessary to confirm no previously undetected or new nests have been built by woodrats in advance of initial vegetation removal and construction. Without these controls, this would be a potentially *significant* impact on San Francisco dusky-footed woodrat.

Significance without Mitigation: Significant.

Impact BIO-1.3: Removal of trees and dense vegetative cover during project construction may result in the inadvertent destruction of active nests of San Francisco dusky-footed woodrat unless appropriate precautions are followed.

Mitigation Measure BIO-1.3: Adequate measures shall be taken to avoid inadvertent take of San Francisco dusky-footed woodrats on the project site. This shall be accomplished by taking the following steps:

- A qualified biologist shall be retained to conduct a preconstruction survey for San Francisco dusky-footed woodrats, to determine whether any stick nests are present in the vicinity of proposed vegetation removal and development. The survey shall be performed within 30 days prior to initiation of vegetation removal and grading.
- If any nests are encountered within the limits of proposed grading and development, a trapping and relocation effort shall be conducted outside the breeding season (March 1 through August 31) to ensure any young are not inadvertently lost due to the destruction of the protective nest.
- Any nests within the construction zone shall be relocated to locations retained as undeveloped open space and individual woodrats released into their relocated nests. The trapping and relocation effort shall preferably be conducted within 7 days prior to grubbing and vegetation removal to prevent individual woodrats from moving back into the construction zone.

Significance with Mitigation: Less than significant.

Alameda Whipsnake, California Red-legged Frog, and Western Pond Turtle

The potential for presence of Alameda whipsnake, California red-legged frog, and western pond turtle within the proposed development area on the site is considered remote for a number of reasons, including absence of suitable habitat conditions, past and on-going disturbance as part of vegetation maintenance, and distance from known occupied habitat. However, there are currently no barriers that would prevent an individual(s) from dispersing from suitable scrub and woodland habitat to the west or from upstream or downstream locations along the Cull Creek corridor. In the remote instance that an individual was dispersing through the proposed development area during construction, vegetation removal, grading, and other construction activities may result in harassment, injury, or mortality unless careful controls are taken to prevent inadvertent take of these species. Standard construction avoidance practices to prevent take include conducting preconstruction surveys, training workers over the potential presence of this species, excluding the construction area, and monitoring the construction zone. The potential for short-term inadvertent take of Alameda whipsnake, California red-legged frog, and western pond turtle during construction is considered a *potentially significant* impact requiring implementation of standard protection and avoidance measures as recommended below.

Significance without Mitigation: Significant.

Impact BIO-1.4: Removal of vegetative cover and other construction activities could result in the inadvertent take of Alameda whipsnake, California red-legged frog or western pond turtle in the remote instance that an individual were to disperse into the proposed development area unless appropriate precautions are followed.

Mitigation Measure BIO-1.4: Adequate measures shall be taken to avoid inadvertent take of Alameda whipsnake, California red-legged frog, and western pond turtle during construction. This shall be accomplished by taking the following steps:

- A qualified biologist shall be retained by the applicant to oversee construction and ensure that no inadvertent take of Alameda whipsnake, California red-legged frog, or western pond turtle occurs as a result of grading and other habitat modifications to the proposed development area on the project site.
- Prior to any grading or grubbing, the qualified biologist shall conduct a preconstruction survey to confirm absence of any Alameda whipsnake, California red-legged frog, or western pond turtle in the vicinity of construction and areas to be graded.
- The qualified biologist shall train the on-site monitor (such as the construction foreman) in how to identify Alameda whipsnake, California red-legged frog, and western pond turtle, and procedures to follow as part of construction monitoring. The qualified biologist shall visit the site at least once a week during initial construction and confer with the trained on-site monitor for at least one month until the construction area is stabilized and to confirm that the exclusionary fencing installed to prevent access into areas of disturbance has been properly maintained.
- All construction workers shall be trained regarding the potential presence of Alameda whipsnake, California red-legged frog, and western pond turtle prior to initiating any construction, and instructed that these species are to be avoided, that the foreman must be notified if any individuals are encountered, and that construction shall be halted until the qualified biologist arrives and makes a determination on possible presence.
- The qualified biologist shall oversee initial vegetation clearing and installation of wildlife exclusionary fencing to prevent Alameda whipsnake, California red-legged frog or western pond turtle from entering the construction area. The wildlife exclusionary fencing material and design shall meet with latest standards called for by the USFWS and CDFW, and shall include one-way funnels to allow for snakes and other small wildlife to exit the fenced construction zone. The exclusionary fencing shall be maintained and remain in place for the duration of construction until the qualified biologist has determined that it is no longer needed.
- Vegetation clearing shall be performed by hand and all slash shall be removed from the construction zone to remove any protective cover that could attract snakes and other wildlife. Operation of grading equipment shall not occur until vegetative cover has been completely removed from the fenced construction zone and the qualified biologist has performed a pre-grading survey to confirm absence of any Alameda whipsnake, California red-legged frog, or western pond turtle in the vicinity of construction and areas to be graded.
- During the construction phase of the project, the qualified biologist or trained on-site monitor shall check to ensure that the exclusionary fencing is intact. The fenced construction area shall be inspected by the qualified biologist or trained on-site monitor each morning and evening of construction activities for possible presence of Alameda whipsnake, California red-legged frog, or western pond turtle. This includes checking holes, under vehicles and under boards left on the ground.
- During construction, any holes or trenches greater than 6-inches shall be covered with plywood or similar non-heat conductive materials and ramp larger trenches that cannot be readily covered at end of each work day to allow escape of any animals.

- Use of monofilament plastic for erosion control or other practices shall be prohibited on the site to prevent possible entrainment.
- All food waste shall be removed daily from the site to avoid attracting predators.
- If any western pond turtle is encountered within the proposed development area, construction shall be halted until the qualified biologist relocates the individual to secure habitat along Cull Creek.
- If any Alameda whipsnake or California red-legged frog are found within the proposed development area, construction shall be halted until they disperse naturally, and the monitor shall immediately notify the qualified biologist in charge and representatives of the USFWS and CDFW. Construction shall not proceed until adequate measures are taken to prevent dispersal of any individuals into the construction zone, as directed by the USFWS and CDFW.
- Subsequent recommendations made by the USFWS and CDFW necessary to avoid take of Alameda whipsnake and/or California red-legged frog shall be followed. Only an agency-approved biologist is allowed to handle or otherwise direct movement of Alameda whipsnake or California red-legged frog, and all others shall not handle or otherwise harass the animal(s). The qualified biologist and the on-site monitor shall be aware of all terms and conditions set by USFWS and CDFW on the project, if that becomes necessary.

Significance with Mitigation: Less than significant.

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 Wildlife or US Fish and Wildlife Service.**

The proposed project would not have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. No direct disturbance to the riparian woodlands along the Cull Creek corridor is proposed as part of the project. The natural habitat along the creek corridor would be retained and enhanced through native plantings and improvements would be restricted away from the top of bank or limits of woody riparian vegetation. The existing bridge crossing of Cull Creek would remain in its current condition and any new drainage outfalls would require review and approval by regulatory agencies that would require that existing native trees be avoided and disturbance to natural habitat minimized. No native grasslands or other sensitive natural community types are present in the proposed development area. Potential impacts on the riparian woodlands associated with the Cull Creek corridor would be *less than significant* and no mitigation is considered necessary.

Significance without Mitigation: Less than significant.

BIO-3 The proposed project would not have a substantial or adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

The proposed project would generally avoid regulated waters associated with Cull Creek and the un-culverted segment of the ephemeral drainage along the southern edge of the site. No direct disturbance to the riparian woodlands along the Cull Creek corridor is proposed as part of the project. The natural habitat along the Cull Creek corridor would be retained and enhanced through native plantings and improvements would be restricted away from the top of bank or limits of woody riparian vegetation. The existing bridge crossing of Cull Creek would remain in its current condition and any new drainage outfalls would require review and approval by regulatory agencies that would require that existing native trees be avoided and disturbance to natural habitat minimized.

Appropriate controls would be implemented during construction to avoid any degradation to downgradient waters, as discussed in Chapter 4.8, *Hydrology and Water Quality,* of this Draft EIR. Given implementation of the required best management practices (BMPs) to control erosion and sedimentation, no direct or indirect impacts to off-site wetlands and waters are anticipated as part of project implementation. This would include installation of silt fencing to prevent disturbance to the regulated waters of the Cull Creek and southern ephemeral drainage channels. Potential impacts on the regulated waters associated with the Cull Creek corridor and southern ephemeral drainage would be *less than significant* and no mitigation is considered necessary.

Significance without Mitigation: Less than significant.

BIO-4 The proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

In general, the proposed project would not have any substantial adverse impacts on wildlife movement opportunities or adversely affect native wildlife nursery sites. During construction, smaller, less mobile wildlife species could be lost as a result of vegetation grubbing and grading, and larger, more mobile wildlife would be displaced to surrounding areas. However, implementation of preconstruction clearance surveys, installation of temporary exclusionary fencing around the proposed development area, and worker training by a qualified biologist would serve to avoid loss of any special-status wildlife species, nesting birds, or roosting bats as discussed under Impact BIO-1. Grading and construction would temporarily disrupt wildlife use of the immediate vicinity, but this would be a relatively short-term effect on common wildlife species which could continue to use the surrounding undeveloped hillside areas and even the Cull Creek riparian corridor that bisects the proposed development area for foraging and other activities. The construction-related disturbance would affect common wildlife species, affecting a relatively small portion of the project site that is already largely disturbed, and would be a *less than significant* impact.

The new development would remain permeable to wildlife once construction is completed, and replacement tree plantings and other landscaping would eventually provide habitat that could be used for dispersal, foraging, roosting, and nesting by common wildlife species associated with the proposed development area on the project site. While some new fencing is proposed along portions of the Cull Canyon Road frontage and the southern boundary of the site, it would not disrupt movement along Cull Creek or create impenetrable barriers to terrestrial wildlife movement. No substantial disruption of movement corridors or access to native wildlife nursery sites is anticipated.

Some aspects of the proposed project could have adverse effects on wildlife habitat values if careful controls are not implemented, which could be disruptive to wildlife movement and occupation. In particular is the potential for new night-time lighting, which could adversely affect the wildlife use of the riparian habitat along the Cull Creek corridor and the surrounding woodlands by nocturnal species. Some wildlife species will avoid areas that are illuminated at night, and others are attracted to moths and other prey that are drawn to night-time lighting, possibly disrupting their behavior in pursuit of new foraging opportunities. Garbage and possible feeding of wildlife by humans could attract problematic species such as raccoon, opossum, jays, and crows, which in turn could reduce the value of the proposed development area and surrounding natural habitat to more sensitive species which are often times harassed or predated upon by the more aggressive species. These potential changes in future conditions on the project site could result in substantial changes to some wildlife movement opportunities or native wildlife breeding habitat, which would be a *potentially significant* impact.

Significance without Mitigation: Significant.

Impact BIO-4: Proposed night-time lighting and increased human activity could disrupt native wildlife movement and use of native nursery habitat unless careful controls are implemented as part of the proposed project.

Mitigation Measure BIO-4: Measures shall be taken to prevent disruption of native wildlife movement opportunities and potential native wildlife nursery habitat. These shall include the following:

- Fencing which obstruct wildlife movement shall not cross the Cull Creek channel or form a barrier between the creek and the woodlands to the west of the proposed development area on the project site.
- Fencing to control and protect livestock shall be restricted outside the Cull Creek corridor away from the top of bank and shall allow for passage of wildlife around at least one side of the enclosed perimeter.
- New lighting shall be carefully designed and controlled to prevent unnecessary illumination of natural habitat on the site, particularly the Cull Creek corridor and undeveloped woodlands to the west of the proposed development area. Lighting shall be restricted to building envelopes and the minimum level necessary to illuminate pathways, parking areas, and other outdoor areas. Lighting shall generally be kept low to the ground, directed downward, and shielded to prevent illumination into adjacent natural areas. Lighting from the Cafeteria/Mess Hall building shall be turned off after staff/employees leave the structure at the end of the day or evening, except the minimum necessary for security purposes.

- Dogs and cats shall be confined to the proposed development area or leashed and under voice control at all times to minimize harassment and loss of wildlife along the Cull Creek corridor and undeveloped woodlands to the west.
- All garbage, recycling, and composting shall be kept in closed containers and latched or locked to prevent wildlife from using the waste as a food source.

Significance with Mitigation: Less than significant.

BIO-5 The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The proposed project would not conflict with any local ordinances or the intent of the Castro Valley General Plan. Goals and policies in the Castro Valley General Plan call for protection of native wildlife, riparian habitat, creeks and natural watercourses, trees and native vegetation. As discussed above under Impact BIO-2 and BIO-3, no substantial adverse impacts on the riparian habitat and regulated waters of Cull Creek are anticipated. As discussed above under Impact BIO-4, wildlife movement opportunities would be maintained, and controls provided under Mitigation Measure BIO-4 would ensure that night-time lighting and other project-related changes would be less than significant.

Implementation of the proposed project would require the removal of an estimated 44 trees as indicated in Figure 3-3, *Existing Site Plan*, in Chapter 3, *Project Description*, of this Draft EIR. These consist of 25 coast live oaks, 7 coast redwoods, 11 English walnut and other planted ornamentals, and 1 pine. The trees range in size from mature specimens with trunks in excess of 24 inches diameter at breast height (DBH), some with multiple trunks to saplings under 10 inches DBH. In addition, trees not directly removed by grading or other improvements could be damaged or adversely affected during construction or as a result of long-term changes to drainage patterns, irrigation, exposure and other factors. Mature oaks and other trees are sensitive to changes in canopy structure, drainage patterns, soil compaction, trenching, landscape irrigation, and other modifications within the root zone. Considerable care is necessary to protect trees in the vicinity of grading, building and roadway construction, and landscape improvements. Wounding of trunks and major roots during construction is a common problem, which results in the invasion of harmful organisms and can contribute to structural decay of the tree. Root loss, and a reduction in potential rooting area, often contributes to long-term tree decline. In general, any disturbance within the dripline of a mature tree should be avoided to prevent adverse changes which may affect the long-term health and condition of trees to be preserved.

The current County Tree Ordinance (Chapter 12.11 of the ACMC) pertains solely to street trees. No trees within the Cull Canyon Road right-of-way are proposed for removal as part of the project. None of the trees proposed for removal on the site are regulated under the ordinance. While the proposed number of trees to be removed is considerable, the loss of an estimated 44 trees is a small percentage of the hundreds of trees on the entire 37-acre project site. The proposed Landscape Plan includes considerable tree, shrub, and groundcover plantings throughout the proposed development area, concentrated along the Cull Canyon Road frontage, along the southern boundary, and around proposed buildings. As proposed, the landscape planting pallet consist of 59 trees plantings, consisting largely of native Oregon ash (*Fraxinus latifolia*), coast redwood, vine maple (*Acer circinatum*), Pacific madrone (*Arbutus menziesii*),

big leaf maple (*Acer macrophyllum*), and California sycamore trees These landscape plantings would serve to replace the trees proposed for removal at a greater than 1:1 ratio. (Per Mitigation Measure WF-2 in Chapter 4.15, *Wildfire*, of the Draft EIR, the final landscape plan will require review and approval from the Alameda County Fire Department for provision of defensible space, which could result in potential changes to the locations of plantings and planting types, however the final landscape plan would maintain the same planting ratio, resulting in the same benefits as described below.)Together with the preservation of all of the riparian woodland and most of the oak woodland on the site, the replacement plantings would serve to address any adverse impacts on tree resources and the intent of the relevant General Plan Policy 7.3-2 to "maintain and enhance the existing environment by preserving existing native trees and plants wherever feasible, replacing trees on-site…" No substantial conflicts with local plans and policies related to biological resources are anticipated and potential impacts of the proposed project would be less than significant.

Significance without Mitigation: Less than significant.

BIO-6	**The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.**

The proposed project would not conflict with any approved habitat conservation plans as none encompass the project site or surrounding area. *No impacts* are anticipated, and no mitigation is considered necessary.

Significance without Mitigation: No impact.

BIO-7	**The proposed project, in combination with past, present, or reasonably foreseeable projects, would not have a cumulative significant impact in regard to biological resources.**

Implementation of the proposed project in conjunction with the projects listed in Table 4-1, *Approved and Pending Cumulative Projects within the Vicinity of the Proposed Project*, in Chapter 4.0, *Environmental Analysis*, of this Draft EIR, would result in continued development in the Castro Valley vicinity. The potential impacts of proposed development on biological resources tends to be site specific, and the overall cumulative effect would be dependent on the degree to which significant vegetation and wildlife resources are protected on each property. This includes preservation of regulated trees, well-developed native vegetation (native grasslands, riparian woodland, and mature oaks), populations of special-status plant or wildlife species, and wetland features (including seasonal wetlands and stream channels). Further environmental review of specific development proposals in the vicinity of the project site would serve to ensure that important biological resources are identified, protected and properly managed, and to prevent any significant adverse development-related impacts.

To some degree, cumulative development contributes to an incremental reduction in the amount of existing wildlife habitat, particularly for birds and larger mammals. Habitat for species intolerant of human

disturbance would be lost as development encroaches into previously undeveloped areas, disrupting or eliminating movement corridors and fragmenting the remaining suitable habitat retained within parks, private open space, or undeveloped properties. Additional development may also contribute to degradation of the aquatic habitat in creeks in the area. Grading associated with construction activities generally increases erosion and sedimentation, and urban pollutants from new development would reduce water quality. Preparation of a SWPPP required for development sites encompassing more than an acre would serve to reduce potential indirect impacts on the quality of surface water and sensitive wetland and riparian areas. Recommendations to control erosion and sedimentation after grading should serve to minimize the potential for water quality degradation associated with the proposed development of the project site and would adequately address any possible cumulative contribution to water quality degradation.

With regard to development of the project site and its relationship to surrounding habitat, the proposed project would contribute to a cumulative loss of ruderal grasslands and small areas of oak woodland cover in the north Castro Valley vicinity. Mitigation Measures BIO-1.1 through BIO-1.4 would serve to address the potential for nesting birds, roosting bats, nests of San Francisco dusky-footed woodrat, and the potential dispersal of Alameda whipsnake, California red-legged frog and western pond turtle through the proposed development area and would ensure that any new nests, roots, or individual special-status species are adequately avoided. Given the limited potential for presence of special-status species or other highly sensitive biological resources, and measures recommended to avoid nests and roots in active use, the project's contribution to cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.4 CULTURAL RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to cultural resources, and the potential impacts of the project on cultural resources.

The information and analysis in this section is based primarily on the *Phase I Cultural Resource Assessment Report for the Mosaic Project Property at 17015 Cull Canyon Road* prepared by Archeo-Tec in March 2021.[1]

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

This section summarizes existing federal, State, and local policies and regulations that apply to cultural resources in Alameda County.

Federal Regulations

National Historic Preservation Act

The National Register of Historic Places (National Register), established by the National Historic Preservation Act of 1966, as amended, recognizes properties that are significant at local, State, and national levels. Designated historical resources include districts, sites, buildings, structures, and objects.

For a property to be eligible for listing in the National Register, it must be significant in American history, architecture, archaeology, engineering, or culture, and must retain integrity in terms of location, design, setting, materials, workmanship, feeling, and association.[2] Resources less than 50 years in age, unless of exceptional importance, are not eligible for the National Register. Though a listing in the National Register does not prohibit demolition or alteration of a property, CEQA requires the evaluation of project effects on properties that are listed in the California Register of Historic Resources, which includes properties listed in the National Register.[3,4]

[1] Archeo-Tec, March 2021. Phase I Cultural Resource Assessment Report for the Mosaic Project Property at 17015 Cull Canyon Road

[2] United States Department of the Interior, 1997, National Register Bulletin, How to Apply the National Register Criteria for Evaluation. https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf, accessed April 8, 2021.

[3] CEQA Guidelines Section 15064.5, Determining the Significance of Impacts to Archaeological and Historical Resources.

[4] Office of Historic Preservation, 2002, California Office of Historic Preservation Technical Assistance Series #3. https://ohp.parks.ca.gov/pages/1069/files/03%20cal_%20reg_%20q_and_a.pdf, accessed April 8, 2021.

State Regulations

California Register of Historical Resources

The California State Historic Preservation Office maintains the California Register of Historical Resources (California Register). Historic properties listed or formally designated as eligible to be listed on the National Register, and State Landmarks and Points of Interest, are automatically listed on the California Register. Properties designated under local preservation ordinances or through local historical resource surveys may also be listed.

Eligibility for the California Register requires that a resource retain sufficient integrity to convey significance and importance. Location, design, setting, materials, workmanship, feeling, and association are key elements in considering a property's integrity. In addition, an important archaeological, historical, or tribal cultural resource is one that meets one or more of the below criteria:

- Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Is associated with the lives of persons important to local, California, or national history.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
- It has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

California Historical Building Code

The California Historical Building Code (California Code of Regulations, Title 24, Part 8) provides regulations for permitting repairs, alterations, and additions for the preservation, rehabilitation, relocation, reconstruction, change of use, or continued use of historical buildings, structures, and properties determined by any level of government as qualifying as a historical resource. A historical resource is defined in Sections 18950 to 18961 of Division 13, Part 2.7 of the Health and Safety Code and subject to rules and regulations in the California Historical Building Code.

California Environmental Quality Act

California law provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared consistent with CEQA. The CEQA Statute is in Public Resources Code (PRC) 21000 to 21177, and the CEQA Guidelines are in California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

Under CEQA, a cultural resource is considered a "historical resource" if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Under CEQA, the lead agency determines whether projects may have a significant effect on archaeological and historical resources. CEQA Guidelines Section 15064.5 defines what constitutes a historical resource, including: (1) a resource determined by the State Historical Resources Commission to be eligible for the California Register of Historical Resources (including all properties on the National Register); (2) a resource included in a local register of historical resources, as

defined in PRC Section 5020.1(k); (3) a resource identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) any object, building, structure, site, area, place, record, or manuscript that the City determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the City's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered historically significant if it meets the criteria for listing on the California Register.

If the lead agency determines that a project may have a significant effect on a historical resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. However, no further environmental review needs to be completed if, under the qualifying criteria, a cultural resource is not found to be a historical resource or unique archaeological resource.

In addition, PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines specify lead agency responsibilities to determine whether a project may have a significant effect on archaeological resources. If it can be demonstrated that a project would damage a unique archaeological resource, the lead agency may require reasonable efforts for the resources to be preserved in place or left in an undisturbed state. Preservation in place is the preferred approach to mitigation. The PRC also details required mitigation if unique archaeological resources are not preserved in place.

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on nonfederal land. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to identify the most likely descendant and mediate any disputes regarding disposition of such remains.

California Health and Safety Code

California Health and Safety Code Section 7052 states that it is a felony to disturb Native American cemeteries. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

Public Resources Code Section 5097.5

PRC Section 5097.5 prohibits "knowing and willful" excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof.

State Laws Pertaining to Human Remains

Any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Code of Regulations Section 15064.5(e) (CEQA), PRC Section 5097.98, and the California Health and Safety Code Section 7050.5. California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Specifically, Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are determined to be of Native American origin, the county coroner must contact the California NAHC within 24 hours of this identification. An NAHC representative will then identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, CEQA Guidelines Section 15064.5 specifies the procedures to be followed in case of the discovery of human remains on nonfederal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

Local Regulations

Castro Valley General Plan

The Alameda County General Plan consists of three area plans, which contain goals, policies, and actions for circulation, land use, open space, conservation, safety, and noise for their respective geographic areas. The proposed project is located within the planning area for the Castro Valley General Plan. Table 4.4-1 lists policies from the Community Character and Design chapter of the Castro Valley General Plan regarding cultural resources that are relevant to the proposed project.[5]

[5] Alameda County Community Development Agency Planning Department, March 2012. Castro Valley General Plan, Chapter 4, Land Use and Development, https://www.acgov.org/cda/planning/generalplans/documents/Chapter-4-Land-Use-and-Development.pdf, accessed January 5, 2022.

TABLE 4.4-1 RELEVANT CASTRO VALLEY GENERAL PLAN CULTURAL RESOURCES POLICIES

Policy No.	Text
Goal 5.6-1	Protect historic sites and structures and other cultural resources that help to maintain the special character and identity of Castro Valley and represent important physical connections to the community's past.
Policy 5.6-1	Preserve Designated Historic Sites. Protect and preserve Federal and State-designated historic sites, structures, and properties that are deemed eligible for designation to the maximum extent feasible.
Policy 5.6-2	Cultural Resources Protection Strategies. Establish appropriate strategies to protect local cultural resources that do not qualify for designation as historic resources but reflect Castro Valley's history and traditions.
Policy 5.6-3	Consider Cultural Resources in Development Review Process. Integrate consideration of historical and cultural resources into the development review process to promote early resolution of conflicts between cultural resources preservation and other community goals and objectives.

Source: Alameda County Community Development Agency Planning Department, March 2012. Castro Valley General Plan, Chapter 5, *Community Character and Design*, https://www.acgov.org/cda/planning/generalplans/documents/Chapter-5-Community-Character-and-Design.pdf, accessed January 5, 2022.

Alameda County Code of Ordinances

The Alameda County Municipal Code (ACMC) contains all ordinances for the County. Chapter 16.62 of the ACMC, the Historic Preservation Ordinance, identifies, protects, and ensures the preservation of significant architectural, historic, prehistoric, and cultural structures, sites, resources, and properties in the county. The ordinance also qualifies the County as a Certified Local Government under the National Historic Preservation Act. This recognition would allow the Commission to review and comment on projects subject to Section 106 of the Federal act.

4.4.1.2 EXISTING CONDITIONS

Historical Context

Cull Creek is an upper drainage of San Lorenzo Creek, which flows through the City of Hayward to its outlet at San Francisco Bay. At the time of European contact, the project site was situated within the territory of the Jalquin/Irgin (Yrgin) people.

In March 1772, a small Spanish expedition camped along San Lorenzo Creek, in what is present-day Hayward, California. According to the diarist Fray Juan Crespi, the natives were friendly and lived in villages along the waterways, where trees provided wood resources. However, the surrounding plain was bare of trees. In response to perceived strategic challenges presented by 18th Century Russian exploration along the northern Pacific coastline, the Spanish crown prioritized the establishment of permanent settlement in Alta California. In 1776, Juan Bautista de Anza led a group of over 200 settlers to what is now San Francisco. Thereafter, de Anza and a small entourage traveled by land to explore the East Bay as far north as the Carquinez Straight. Despite passing within about 5 miles of the crossing of San Lorenzo Creek, there is no evidence that any Spanish parties ventured upstream toward Cull Canyon and the proposed project site.

During the Spanish Era, Cull Canyon was part of the landholding of the Spanish Mission System. The area fell right along the boundary line between the lands of Mission San Francisco and San Jose. From 1801 to 1804, the Jalquin went to Mission San Francisco. From 1799 to 1805, the Irgins (Yrgins) went to Mission San Jose, where they were baptized as late as 1808.

In 1841, the 26 thousand-acre Rancho San Lorenzo was granted Don Guillermo Castro by Mexican Governor Juan Alvarado. The land included present day Castro Valley, San Lorenzo and Hayward as well as Cull, Crow, Eden, and Palomares canyons.

During the Early American Era, Faxon Dean Atherton, a wealthy American businessman, came to California to capitalize on the Gold Rush and purchased 640 acres along the San Francisco Peninsula. He accumulated a great fortune through the shipping industry, focusing on the import and export of goods, as well as purchasing land and commodities to sell to new settlers coming into California during the Gold Rush Era. In 1864, Atherton purchased land at a sheriff's sale that included the present-day proposed project site location.

Historic Resources

In the past, as today, the topography and location of the project site made it a generally undesirable area for intensive development. The canyon is steep and narrow, with only occasional flat areas for development. Maps from 1878 show no development in the vicinity of the project site.

By 1947, a road that ran from Cull Canyon Road west across the stream through southeastern portions of the project parcel, and up into the hills. At the location of the current garage stood a building whose use and purpose is not known. The current garage and the caretaker's house were constructed sometime after 1993 and are therefore not of potential cultural significance.

Archeological Resources

Prior to the commencement of the archaeological field reconnaissance, maps and other archival documents concerning previous archaeological sites and studies were consulted.

On July 23, 1985, an extensive field survey of approximately 6.1 miles of Cull Creek was performed in anticipation of a planned land-stabilization project designed to limit landslides and heavy erosion occurring along the banks of Cull Creek. The crew was divided into two teams that surveyed from the north and south sides of the proposed project area, meeting in the middle. Although 1.5 miles of the survey area could not be examined due access issues, the area that was not accessible was also eroded and disturbed, thus not archaeologically sensitive. There were no prehistoric or historic archaeological sites identified. Isolated historic finds were present but not culturally significant. The report author attributed the absence of archaeological sites to "extreme recent modifications" to the land.

In September of 1979, five bedrock mortars were identified on the Willow Park Golf Course (now named Redwood Canyon Golf Course). Two modified cobblestones were also collected. By 1982, a site revisit found that the bedrock mortar groupings had been highly disturbed and potentially destroyed by golf course construction. The site lies along a tributary of the San Leandro Creek on what was once Rancho San Lorenzo and, at almost 2 miles southwest, is the closest resource to the current project site.

On February 19, 2021, staff members of the Northwest Information Center (NWIC) conducted a search of the California Historical Resources Information System for all resources and records within the project parcel and within a 1/2-mile study area. No archeological sites and only one cultural study was found

within the study area. The search area was then expanded to identify the closest known archaeological site at the Redwood Canyon Golf Course.

4.4.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant cultural resources impact if it would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.
4. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to cultural resource.

4.4.3 IMPACT DISCUSSION

CULT-1 The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

The types of cultural resources that meet the definition of historical resources under CEQA Section 21084.1 generally consist of districts, sites, buildings, structures, and objects that are significant for their traditional, cultural, and/or historical associations. Under CEQA, both prehistoric and historic-period archaeological sites may qualify based on historical associations. As such, the two main historical resources that are subject to impact, and that may be impacted by implementation of the proposed project, are historical archaeological deposits and historical architectural resources. Impacts to archaeological resources are discussed under CULT-2.

Existing structures within the 37-acre parcel include a residential home, a barn, a bridge, several wells, a septic system, an outdoor barbeque and spit, and a large concrete building with a slab foundation. The large concrete building and residential home were constructed sometime after 1993 and are therefore not of potential cultural significance. The construction date of the barn is indeterminant, although it was likely constructed in the late 19th or early- to mid-20th century, similar to other barns nearby. Alameda County retains a list of Landmarks and Contributing Buildings, with two buildings on the list being located along Cull Canyon Road. These are a red barn at Cull's ranch located at 14563 Cull Canyon Road, built in 1855, and a farmhouse and barn located at 16874 Cull Canyon Road. The project site is not identified on the County list even though two nearby properties are. Therefore, it can be inferred that the barn located on site is not considered a historical resource, nor is the project site recognized as a historic landmark.[6] With no historical resources available on the project site, there would be *no impact.*

[6] Alameda County Landmarks & Contributing Buildings, Identified in 2005-2008 Comprehensive Survey, https://www.acgov.org/cda/planning/landuseprojects/documents/phrcList.pdf, accessed on January 5, 2022.

Significance Without Mitigation: No impact.

CULT-2 The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

As mentioned in Section 4.4.1.2, *Existing Conditions*, staff at the Northwest Information Center conducted a search of the California Historical Resources Information System for all resources and records for the proposed project, which encompassed lands within a half mile of the study area. No archeological sites and only one cultural study was found. Furthermore, due to the steep slopes, much of the project parcel would not have been favorable for habitation.

Since the project site has been developed in the past, associated ground disturbing activities are likely to have already disturbed or resulted in the discovery of any archeological resources that may exist on the site. However, although no known archaeological resources have been recorded at the project site, ground-disturbing activities may result in unanticipated discoveries of cultural resources and could be damaged or destroyed by ground-disturbing construction activities (e.g., site preparation, grading, excavation, and trenching for utilities) associated with the proposed project. Therefore, earth-disturbing activities conducted for the proposed project would have the potential to expose previously undiscovered subsurface archaeological resources. As such, the impact to archaeological resources has potential to be *significant*.

Significance Without Mitigation: Significant.

Impact CULT-2: Implementation of the proposed project would have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

Mitigation Measure CULT-2: If archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and the County, and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the County for review and approval prior to the continuation of any on-site construction activity.

Significance With Mitigation: Less than significant.

CULT-3 The proposed project would not disturb any human remains, including those interred outside of dedicated cemeteries.

Previously undiscovered human remains associated with pre-contact archaeological deposits may exist within the project site, as ground-disturbing activities sometimes uncover such previously unrecorded remains. As discussed under impact discussion CULT-2, ground-disturbing activities and excavation for the project would have the potential to uncover buried resources. It is possible that human remains may be present on the project site. Descendant communities may ascribe religious or cultural significance to such remains, making any such disturbances a *significant* impact.

Significance Without Mitigation: Significant.

Impact CULT-3: Construction activities may result in unanticipated discovery of human remains interred outside of dedicated cemeteries.

> Mitigation Measure CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The County and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.
>
> Significance With Mitigation: Less than significant.

CULT-4 The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to cultural resource.

Cumulative cultural resource impacts would occur when a series of actions leads to the loss of a substantial type of site, building, or resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such resources on a project-by-project basis could constitute a significant cumulative effect. This is most obvious in historic districts, where destruction or alteration of a percentage of the contributing elements may lead to a loss of integrity for the district overall. For example, changes to the setting or atmosphere of an area by adding modern structures on all sides of a historically significant building, thus altering the aesthetics of the streetscape, would create a significant impact. Destruction or relocation of historic buildings would also significantly impact the setting.

The project site does not contain any designated historic resources. As there are no significant historic structures and no known archaeological resources, paleontological resources, or human remains on the project site, development of the proposed project would not create or contribute to a cumulative impact to cultural resources. Mitigation Measure CULT-2 would ensure that any buried archaeological resources,

if encountered, would be properly handled. Mitigation Measure CULT-3 would ensure that any potential human remains encountered during site excavation would be properly handled. Additionally, the existing federal, State, and local regulations and policies described throughout this chapter serve to protect any as-yet-undiscovered cultural resources. Continued compliance with these regulations and implementation of existing County policies and requirements would preclude impacts to the maximum extent practicable.

Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less-than-significant* cumulative impact with respect to all cultural resources.

Significance Without Mitigation: Less than significant.

4.5 GEOLOGY AND SOILS

This subchapter describes the regulatory framework and existing conditions on the project site related to geology and soils and contains an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to geology and soils.

The information in this section is based in part on the following technical study, referenced throughout this chapter as the Geotechnical Engineering Investigation Report (GEI):

> *Geotechnical Engineering Investigation Report (GEI), The Mosaic Project, 17015 Cull Canyon Road, Castro Valley, California. Prepared by NV5.*

A complete copy of this report is included in Appendix E to this Draft EIR.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 REGULATORY FRAMEWORK

Federal Regulations

International Building Code

The International Building Code (IBC) has been adopted throughout the United States and has been in use since 2007. The purpose of the IBC is to establish minimum regulations for building systems, including fire safety, building safety, foundation, wall and roof constructions, materials used in construction, elevators and escalators, and existing structures.

National Pollutant Discharge Elimination System

The State Water Resources Control Board has implemented a National Pollutant Discharge Elimination System (NPDES) general construction permit for Alameda County. For properties of one or more acres, a Notice of Intent and a stormwater pollution prevention plan (SWPPP) must be prepared prior to commencement of construction. Construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation. The San Francisco Bay Regional Water Quality Control Board issued a Municipal Storm Water NPDES Permit to the San Francisco Bay Region, including the counties of Alameda, Contra Costa, Santa Clara, and San Mateo, and the cities of Fairfield, Suisun City and Vallejo (Permit Number CAS612008).

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and other researchers. The Paleontological Resources Preservation Act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands*, issued by the Secretary of Interior in 2000, which

establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.[1]

State Regulations

California Building Code

The State of California provides a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations (CCR). The CBC is based on the International Building Code (IBC), but has been modified for California conditions. The CBC is updated every three years. Chapter 16 of the CBC contains specific requirements for structural design, including seismic loads. Chapter 18 of the CBC includes requirements for soil testing, excavation and grading, and foundation design.

Alquist-Priolo Earthquake Fault Zoning Act

Surface rupture is the most easily avoided seismic hazard. The Alquist-Priolo Earthquake Fault Zoning Act was passed in December 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, which was passed by the California Legislature in 1990, addresses earthquake hazards related to liquefaction and seismically induced landslides. Pursuant to requirements under this act, seismic hazard zones are mapped by the State Geologist in order to assist local governments in land use planning. The Seismic Hazards Mapping Act states that "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety."[2] Section 2697(a) of the Act states that "cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard."[3]

Statewide General Construction Permit

Construction projects of one acre or more are regulated under the General Construction Permit, Order No. 2012-0006-DWQ, issued by the State Water Resources Control Board in 2012. Projects obtain coverage by developing and implementing a Stormwater Pollution Prevention Plan (SWPPP) estimating sediment risk from construction activities to receiving waters, and specifying Best Management Practices (BMPs) that would be used by the project to minimize pollution of stormwater.

[1] U.S. Department of the Interior, 2000. *Fossils on Federal & Indian Lands, Report of the Secretary of the Interior*. https://www.blm.gov/sites/blm.gov/files/programs_paleontology_quick%20links_Assessment%20of%20Fossil%20Management%20on%20Federal%20&%20Indian%20Lands,%20May%202000.pdf, accessed March 9, 2021.

[2] California Public Resources Code, Division 2, Chapter 7.8, Section 2691(c).

[3] California Public Resources Code, Division 2, Chapter 7.8, Section 2697(a).

Local Regulations

Castro Valley General Plan

The Natural Hazards and Public Safety Element of the Castro Valley General Plan provides information about risks in Castro Valley from natural and human-made hazards and contains and goals, policies, and actions designed to protect the community and its property from these hazards.

The Castro Valley General Plan goal, policies and actions relevant to geology and seismic hazards are listed in Table 4.5-1, *Castro Valley General Plan Goal, Policies, and Actions Relevant to Geology and Soils*.

TABLE 4.5-1 CASTRO VALLEY GENERAL PLAN GOAL, POLICIES, AND ACTIONS RELEVANT TO GEOLOGY AND SOILS

Goal/Policy/Action Number	Goal/Policy/Action Text
Goal 10.3-1	Minimize risks of property damage and personal injury posed by geologic and seismic hazards.
Policy 10.3-1	Consideration of Ground Shaking Forces During Design Process. Design and construct structures to withstand ground shaking forces of a minor earthquake without damage, of a moderate earthquake without structural damage, and of a major earthquake without collapse. Design and construct critical and essential structures and facilities to remain standing and functional following a major earthquake.
Policy 10.3-2	Erosion and Landslides. Reduce damage to properties caused by erosion and landslides.
Action 10.3-1	Geotechnical Study Requirements. Require geotechnical studies prior to development approval in geologic and/or seismic hazard areas identified in Figure 10-4, *Soils and Seismic Hazards*, or as identified by future studies by federal, state, and regional agencies. Require or undertake comprehensive geologic and engineering studies for critical structures regardless of location. Critical structures are those most needed following a disaster or those that could pose hazards of their own if damaged. They include utility centers and substations, water reservoirs, hospitals, fire stations, police and emergency communications facilities, and bridges and overpasses.
Action 10.3-2	Adoption of and Amendments to California Building Code. Adopt and amend as needed the most current version of the California Building Code (CBC) to ensure that new construction and renovation projects incorporate Earthquake-resistant design and materials that meet or exceed the current seismic engineering standards of the CBC Seismic Zone 4 requirements.
Action 10.3-3	Seismic Retrofit Program. Establish a seismic retrofit program that would encourage property owners to, on a voluntary basis, seismically retrofit residential properties containing four or more units by waiving building permit fees.
Action 10.3-4	Use of Soils and Seismic Hazards Map at County's Planning Counter. Place a copy of Figure 10-4, *Soils and Seismic Hazards*, at the County's Planning Counter to advise project applicants in Castro Valley that the property is in an area at risk for liquefaction, landslides or ground-shaking.
Action 10.3-5	Adoption of Natural Hazards Mitigation Plan. Adopt and amend as needed a Natural Hazards Mitigation Plan in order to maintain eligibility for full federal assistance in the event of a natural disaster, per the requirements of the federal Disaster Mitigation Act of 2000.
Action 10.3-6	Steep Slopes. On sites with slopes with an existing grade greater than 30 percent, require all development to be located outside of the 30 percent slope area. Establish a seismic retrofit program that would encourage property owners, on a voluntary basis, to seismically retrofit residential properties containing four or more units by waiving building permit fees.
Action 10.3-7	Re-vegetation. Aspects of all development in hillside areas, including grading, vegetation removal and drainage, should be carefully controlled in order to minimize erosion, disruption to natural slope stability, and landslide hazards: ▪ Ensure immediate revegetation of cut-and-fill slopes to control erosion.

Goal/Policy/Action Number	Goal/Policy/Action Text
	▪ Plant materials for revegetation should not be limited to hydro-seeding and mulching with annual grasses. Trees add structure to the soil and take up moisture while adding color and diversity. ▪ Ensure blending of cut-and-fill slopes within existing contours, and provision of horizontal variation, in order to mitigate the artificial appearance of engineered slopes. ▪ Ensure structural integrity of sites previously filled before approving redevelopment.
Action 10.3-8	Alquist-Priolo. Require all development within the Alquist-Priolo areas to conform to retrofitting requirements.

Source: Castro Valley General Plan, 2012

Alameda County Municipal Code

Regarding geology and soils, the Alameda County Municipal Code contains standards and directions pertaining to building codes, grading regulations, solid waste management, wells, and underground utilities. These serve to regulate development and minimize hazards relating to geology, soils, and structural integrity. Development projects, prior to permitting, are reviewed and approved by the County for verification of compliance with Code regulations, among other regulations.

4.5.1.2 EXISTING CONDITIONS

Regional Geology

The project site is located within the Diablo Range within the Coast Ranges geomorphic province, west of the Great Valley geomorphic province. This province is geologically complex and a seismically active region consisting of sub-parallel northwest-trending faults, mountain ranges, and valleys. The Jurassic-Cretaceous Franciscan Complex and Great Valley sequence are the oldest geologic units which consist of sediments originally deposited in a marine environment. Other subsequent, younger rocks such as Tertiary-age volcanic and sedimentary rocks were also deposited within the region. Throughout the late Cretaceous through early Tertiary period, complex geologic conditions were created across the region through extensive folding and thrust. Within the valleys, bedrock is covered by thick alluvial soils and floodplain deposits that are incised by meandering river channels. Within the nearby mountains, colluvial soils and landslides largely cover a highly variable and discontinuous in conjecture with regional faulting.

The regional watershed for the area is the San Lorenzo Creek Watershed, which at 48 square miles, is one of the largest draining from the east to San Francisco Bay. The lower and middle watershed areas are highly urbanized, and the natural drainage has been altered. The upper watershed of the San Lorenzo Creek Watershed includes the sub-watersheds of Cull Creek, Crow Creek, and Palomares Creek; these are in a less urbanized area and comprise an area of approximately 105 miles of open creek. The principal drainage course in the area containing the project site is the Cull Creek sub-watershed. Cull Creek runs through the project site north to south, parallel to Cull Canyon Road bordering the east of the project site,

and drains into the Cull Canyon Lagoon at the Cull Canyon Regional Recreation Area, and the Don Castro Reservoir at the Don Castro Regional Recreation Area.[4]

Project Site

The site elevation ranges from approximately 72 feet above mean sea level (msl) along Cull Creek to approximately 150 feet above msl in the southwestern portion of the site, as shown on Figure 4.5-1, *Site Topographic Map*.

The project GEI report details a site investigation that was conducted on June 9, 2019, by a qualified geotechnical engineer/geologist to characterize the existing soil, rock, and groundwater site conditions using the procedures cited in the ASTM International (ASTM), Volume 04.08, Soil and Rock; Dimension Stone; and Geosynthetics as general guidelines. The site investigation also included a review of historical aerial photographs, a literature review of published and unpublished geologic documents and maps, a surface reconnaissance investigation, and a subsurface exploratory investigation using seismic refraction survey equipment and a track-mounted excavator to excavate exploratory trenches.

The geology underlying the project site is comprised of Quaternary Holocene alluvial deposits, east of Cull Creek and the Monterey Formation west of Cull Creek.[5] Holocene alluvial deposits typically consist of un-weathered gravel, sand, and silt deposited by present-day stream channels. These alluvial deposits occurred during the Holocene Epoch approximately 11,700 years before present to present-day. Meanwhile, the Monterey Formation is characterized as marine clastic and biogenic sedimentary rock This rock generally consists of clay shale or claystone and siltstone and siliceous shale that is thin bedded to bedded formed during the middle to late Miocene Epoch, approximately 16 to 5 million years before present (mybp).

During the field investigation detailed in the GEI Report, the geologist described the soil color using the procedures outlined in the Munsell Soil Color Chart. The soil, rock, and groundwater conditions encountered at a maximum excavated depth of seven feet for the project site includes:

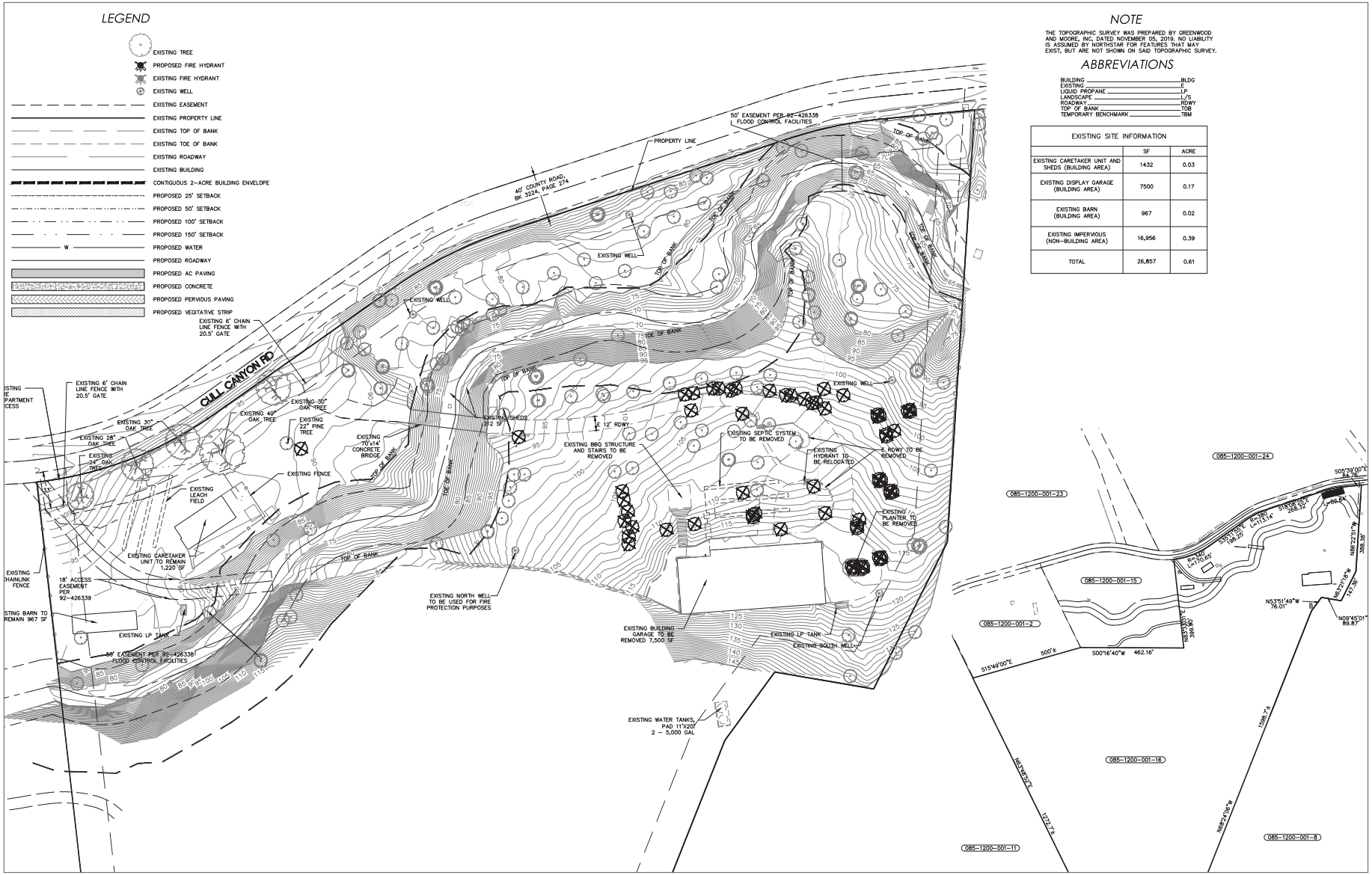
- CL, Low Plasticity Clay Soil: This native soil consists of the following field estimated particle size percentages: 65 percent low plasticity silt and clay fines and 35 percent fine sand. This soil is predominantly dark brown with a Munsell Soil Color Chart designation of 7.5YR 3/2. The soil was characterized as medium stiff to hard and slightly moist to moist during the subsurface investigation.
- CL, High Plasticity Clay Soil: This native soil consists of the following field estimates particle size percentages: 85 percent high plasticity silt and clay fines and 15 percent fine sand. This soil is predominantly very dark greyish brown with a Munsell Soil Color Chart designation of 2.5Y 3/2. This soil was stiff to hard and slightly moist to moist during the subsurface investigation.

[4] Alameda County Flood Control and Water Conservation District, 2021, San Lorenzo Creek Watershed, available online at https://acfloodcontrol.org/the-work-we-do/resources/san-lorenzo-creek-watershed/#:~:text=Overview-,Overview,shore%20of%20San%20Francisco%20Bay, accessed March 10, 2021.

[5] *Geologic Map of the Hayward Quadrangle, Contra Costa and Alameda Counties, California*, published by the Dibblee Geological Foundation, Dibblee, T.W. and Minch, J.A., 2005.

The Seismic Refraction Microtremor Survey (SRMS) performed at the site was used to determine the in-situ shear-wave (S-wave) velocity profile (VsModel) of the uppermost 100 feet of soil beneath the site. The S-wave profile is used to determine the 2016 California Building Code (CBC) Site Class in accordance with Chapter 16, Section 1613.3.2 and Chapter 20 of ASCE 7-10. The results founds that the shear wave velocity corresponds to the upper range of the CBC Site Class D, Stiff Soil Profile.

During the field investigation, the groundwater table was not encountered within the excavated exploratory trenches. Based on previous experience, the GEI Report stated that seasonal saturation of near-surface soil should be expected, especially during and immediately after seasonal prolonged rainstorms. Based on a review of available groundwater data from the Department of Water Resources Sustainable Groundwater Management Program's database, and previous well completion reports for well located on the project site and within approximately two miles of the project site, the approximate depth to groundwater is 30 to 40 feet below ground surface (bgs). Therefore, it is not anticipated that a permanent groundwater table would be encountered at the minimum elevations excavated for the project site. Seasonally, infiltration into the shallow subsurface may create perched water conditions at contact points between soil and less weathered or competent rock. This perched groundwater may cause moisture intrusion into the foundation crawl spaces or through concrete slab-on-grade floors, degradation of asphalt concrete (AC) pavements, and other adverse conditions. Therefore, mitigation measures including gravel underdrains, vertical water barriers, trench drains, elevated building pads, and other methods may be required to intercept shallow groundwater or reduce potentially adverse effects on project components.



Source: NorthStar Designing Solutions, 2020.

0 120
Scale (Feet)

Figure 4.5-1
Site Topographic Map

Seismic Hazards

Faults

Castro Valley is located within the San Francisco Bay Area, one of the most seismically active regions within the United States that has generated many moderate to strong earthquakes within the surrounding region. The Hayward Fault is located approximately 4 miles west of the project site generally running north to south. According to the United States Geological Survey, the fault system that includes the Hayward Fault has a 27 percent probability of generating an earthquake with a greater or equal to 6.7 magnitude on the Mercalli Richter Scale within the next 30 years. Additionally, although considered inactive, the Chabot Fault located 3.5 miles west of the project site may also someday generate a major earthquake.[6] The Calaveras Fault, another active fault, lies within the Calaveras Fault Zone and is located approximately 5 miles to the east of the project site running north to south. The Hayward and Calaveras Faults are the closest known active faults which have surface displacement within Holocene time, occurring within the last 11,000 years. These Fault Zones are mapped within the Fault Activity Map of California by the California Geological Survey. According to the map, the southern extent of the Miller Creek Fault Zone, identified as an undifferentiated Quaternary age fault (ruptured within the last 1.6 million years), is mapped within the vicinity of Cull Creek. The largely inactive Miller Creek fault crosses directly through the southwest corner of the project site from northwest to southeast.[7] Nevertheless, according to the Earthquake Zones of Required Investigation map, the project site is not located within an Earthquake Fault Zone.[8]

Although the Miller Creek Fault was identified on the southwest portion of the site, it is not considered a known active fault and no evidence of late Pleistocene to Holocene rupture has been documented.[9] Therefore, impacts from fault rupture are unlikely.

Ground Shaking

The San Francisco Bay region is a seismically active region. Impacts from ground shaking could occur many miles from an earthquake epicenter. As with other areas in the San Francisco Bay region and throughout northern California, it is anticipated that the project site will likely be subject to strong ground shaking due to earthquakes on nearby faults, especially from the nearby Hayward and Calaveras Faults. A moderate to

[6] Castro Valley General Plan, 2008, Chapter 10 Natural Hazards and Public Safety, available online at https://www.acgov.org/cda/planning/generalplans/documents/Chapter-10-Natural-Hazards-and-Public-Safety.pdf, accessed March 11, 2021.

[7] California Department of Conservation – California Geological Survey, 2015, Fault Activity Map of California, available online at https://maps.conservation.ca.gov/cgs/fam/, accessed March 11, 2021.

[8] California Department of Conservation – California Geological Survey, 2016, Earthquake Zones of Required Investigation, available online at https://maps.conservation.ca.gov/cgs/EQZApp/, accessed March 11, 2021.

[9] Phelps, G. A., R. W. Graymer, R. C. Jachens, D. A. Ponce, R. W. Simpson, and C. M. Wentworth, 2008, Three-Dimensional Geologic Map of the Hayward Fault Zone, San Francisco Bay Region, California, U. S. Geological Survey Scientific Investigations Map 3045, https://pubs.usgs.gov/sim/3045/sim3045_text.pdf, accessed on April 20, 2022.

major earthquake on these faults could disrupt infrastructure, topple buildings, cripple the transportation system, and trigger landslides.

The potential severity of ground shaking depends on many factors, including the distance from the originating fault, the earthquake magnitude, the nature of the underlying soils beneath the project site, and the focus of the earthquake energy. The composition of underlying soils, even when located at a distance from faults, can intensify ground shaking. Areas underlain by unconsolidated sediments such as artificial fill or unconsolidated alluvial fill tend to experience more ground shaking than those underlain by bedrock.[10]

Liquefaction

Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. The lateral movement of soils when this occurs is referred to as lateral spreading. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may suddenly subside and suffer major structural damage.

As described in the project GEI Report, the geology located within the project site consists of Monterey Formation formed during the middle to late Miocene Epoch (16 to 5 mybp). This formation type is characterized as marine clastic and biogenic sedimentary rock generally consisting of clay shale or claystone and siltstone and siliceous shale that is thin bedded to bedded. The Monterey Formation generates soil characterized as predominantly clay that varies from low to high plasticity. Typically, soils with clay and silt contents greater than 30 percent are not prone to liquefaction.

During the GEI site investigation, groundwater was not encountered in the trenches to a maximum explored depth of seven feet below ground surface (bgs). However, groundwater data from nearby wells indicate that historically high groundwater levels are roughly 30 to 40 feet bgs and located within fractured rock of the Monterey Formation. Because the soil on site is predominantly clayey and due to the weathered to slightly weathered rock of the Monterey Formation, the site subsurface conditions below the proposed structural footprint make the probability of liquefaction occurring during ground shaking caused by a maximum considered earthquake (MC) to be very low. The GEI Report concluded that due to the age of the site geology, the groundwater conditions, and the slightly to moderately weathered rock overlayed by high clay content soil make the probability of liquefaction occurring during a nearby earthquake to be very low.

The SRMS conducted across the proposed building footprint during the site investigation was conducted to profile the first 100 feet of soil beneath the site to determine the density and shear strength of the soil deposits, with results given as a shear-wave (S-wave) velocity profile (VSModel). The shear-wave velocity profile of the subsurface indicates that the subsurface conditions of the site consist of still to dense soil and soft rock. These conditions are not typically prone to liquefaction under strong ground shaking conditions.

[10] Castro Valley General Plan EIR, 2007, Chapter 3: Settings, Impacts, and Mitigation Measures, available online at https://www.acgov.org/cda/planning/landuseprojects/documents/CVDEIR.pdf, accessed March 11, 2021.

Although the California Geological Survey identifies the area encompassing the project site as one within an area at risk of liquefaction on the Earthquake Zones of Required Investigation map,[11] the GEI Report concludes that the subsurface conditions at the project site lacks the characteristics that would promote liquefaction based on the peak ground acceleration, seismic shear-wave velocity values for the subsurface, the age of the underlying geology, and the very deep underlying groundwater.

Landslides

Landslides are the downslope movement of geologic materials. Slope failures in the form of landslides are common during strong seismic shaking in areas of steep hills. The project site and adjacent areas are in an area with topography consisting of moderate to steep sloping terrain. The project site itself is located within a region of known historical landslides; however, there were no mapped or observed indication of historic landslides, including debris flows, rock falls, or deep and shallow failure on the project site. Therefore, the GEI Report concluded that the potential for the occurrence or reoccurrence of a landslide hazard within the proposed building areas is low.

Other Geologic Hazards

Collapsible Soils

Collapsible soils shrink upon being wetted and/or being subject to a load. Cohesionless soils, such as sand and gravel, are susceptible to collapse. The GEI indicates that native soils within the project site are not conducive to hydrocollapse, as they exhibit medium to hard stiffness, low void-ratio, and moderate penetration resistance. However, any loose fill material, or soils in areas found during ground disturbance activities to contain a higher concentration of cohesionless soils, could be vulnerable to hydrocollapse.

Subsidence

Land subsidence refers to the lowering of the ground surface due to extraction or lowering of water levels or other stored fluids within the subsurface soil pores, or due to seismic activity that can cause alluvial sediments to compact.

Known current and historical instances of land subsidence in California have been recorded by the United States Geological Survey (USGS).[12] The project site is not included in the USGS's areas of known land subsidence. In addition, the project site is located nearby a populous area where local water districts regularly monitor groundwater levels, and because of this the project site is not likely to be subject to significant groundwater changes that can lead to subsidence.

[11] California Department of Conservation – California Geological Survey, 2016, Earthquake Zones of Required Investigation, available online at https://maps.conservation.ca.gov/cgs/EQZApp/, accessed March 11, 2021.

[12] United States Geological Survey, Areas of Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html, Accessed October 25, 2019.

Dynamic Settlement

Dynamic settlement refers to the compacting of loose soils as a result of strong vibratory motion, such as those associated with an earthquake. Dynamic settlement can occur at multiple levels beneath the ground surface. Cohesionless soils are prone to dynamic settlement.

The GEI Report found that because the potential for liquefaction of the soil beneath the site is considered low, and due to the relatively shallow depth to bedrock, the project site has a low probability for post-liquefaction settlement and lateral spreading that would be detrimental to the components of the proposed project.

Expansive Soils

Expansive soils expand when wet and shrink when dry, resulting in the potential for minor to severe damage to building foundations and structures. Clayey soils are considered to be moderately to highly expansive. The soils observed on-site consist of predominantly silty clays which may be prone to expansion. The project GEI Report outlines mitigation measures to reduce the potential problems associated with expansive soils. Therefore, expansive soils would not present a significant geologic hazard to the site provided that the recommendations of the GEI are followed.

Erosion

Erosion is the movement of soil from place to place and is a natural process. The main natural agents of erosion in the region are wind and flowing water. Erosion can be accelerated dramatically by ground-disturbing activities if effective erosion control measures are not used. Soil can be carried off construction sites or bare land by wind and water and tracked off construction sites by vehicles. According to the project GEI Report, the general soil profile at the site consists of silty clay that exhibits medium to hard stiffness. As recommended in the GEI Report, the removal and recompacting of any loose surface soil and fill material on the site would leave the geologic subgrade of the site as “stiff soil”. Due to the relatively firm to very stiff soil conditions, as well as the supporting Engineered Fill for the proposed project, the site would have a low susceptibility to erosion.

Paleontological Resources

Paleontological resources (fossils) are the remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in the geologic deposits (rock formations) in which they were originally buried. Paleontological resources represent a limited, non-renewable, sensitive scientific and educational resource.

The potential for fossil remains at a location can be predicted through previous correlations that have been established between the fossil occurrence and the geologic formations within which they are buried. For this reason, knowledge of the geology of a particular area and the paleontological resource sensitivity of rock formations make it possible to predict where fossils will or will not be encountered.

As discussed in the project GEI Report, the subsurface conditions encountered on-site appear typical of those found within the geologic region of the area. The project site is underlain by soils derived from the

Miocene-age Monterey Formation. To identify any known paleontological resources within or in the vicinity of the project site, a record search of the online database maintained by the University of California Museum of Paleontology (UCMP), was conducted on April 21, 2022. The UCMP online locality user records search indicated the presence of paleontological resources in Miocene mudstone in the Cull Creek area.[13] A *Pliohippus teonensis* fossil (horse family) was discovered in 1967. Although no paleontological resources are currently known to exist within the project site, it is possible that undiscovered paleontological resources could be buried within the soil types found within its boundaries.

4.5.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in significant geology and soils impacts if it would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides, mudslides, or other similar hazards.
2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
4. Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
7. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to geology and soils.

[13] University of California Museum of Paleontology, 2022, Specimen Search, https://ucmpdb.berkeley.edu/, accessed April 21, 2022.

4.5.3 IMPACT DISCUSSION

GEO-1 **The proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides, mudslides, or other similar hazards.**

The San Francisco Bay Area is a seismically active region. Impacts from ground shaking could occur many miles from an earthquake epicenter. The potential severity of ground shaking depends on many factors, including the distance from the originating fault, the earthquake magnitude, and the nature of the earth materials beneath a given site.

There is no identified fault-rupture hazard zone as defined by the Alquist-Priolo Special Studies Zones Act within the project site.[14] Although the Miller Creek Fault was identified on the southwest portion of the site, it is not considered a known active fault and no evidence of late Pleistocene to Holocene rupture has been documented.[15] Therefore, impacts from fault rupture are unlikely.

Development of the project site is required to be designed in compliance with seismic requirements of the CBC and Title 24 CCR criteria for seismic safety. Any development conducted as part of the proposed project is required to comply with established Alameda County Municipal Code and CBC standards regulating grading and building construction for seismic safety. Recommendations provided within the Project Geotechnical Report to ensure compliance with the Alameda County Municipal Code and CBC standards would be implemented during project construction and design. Compliance with established standards would ensure impacts related to structural collapse or other shaking related hazards are less than significant.

The project site is within the Hayward 7.5 Minute Quadrangle Seismic Hazard Zone map and is partially in an area designated as susceptible to liquefaction.[16] However, the GEI Report states that the subsurface lacks the conditions required to promote liquefaction. Therefore, the proposed project would not subject people or structures to liquefaction hazards, and impacts would be less than significant.

[14] California Geological Survey, 2019, Earthquake Zones of Required Investigation, https://maps.conservation.ca.gov/cgs/EQZApp/, accessed April 20, 2022.

[15] Phelps, G. A., R. W. Graymer, R. C. Jachens, D. A. Ponce, R. W. Simpson, and C. M. Wentworth, 2008, Three-Dimensional Geologic Map of the Hayward Fault Zone, San Francisco Bay Region, California, U. S. Geological Survey Scientific Investigations Map 3045, https://pubs.usgs.gov/sim/3045/sim3045_text.pdf, accessed on April 20, 2022.

[16] California Geological Survey, 2019, Earthquake Zones of Required Investigation, https://maps.conservation.ca.gov/cgs/EQZApp/, accessed April 20, 2022.

Landslides are a type of erosion in which masses of earth and rock move down slope as a single unit. Susceptibility of slopes to landslides and lurching (earth movement at right angles to a cliff or steep slope during ground shaking) depend on several factors that are usually present in combination—steep slopes, condition of rock and soil materials, presence of water, formational contacts, geologic shear zones, and seismic activity. Although the site is located within a Zone of Required Investigation for earthquake-induced landslides, the GEI Report states that there are no mapped or observed indications of historic landslides, including rock falls, debris flows, deep or shallow failure on the site.[17] Based on the conclusions of the GEI Report, the potential for landslides is considered low.

Overall, impacts based on rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, and landslides as a result of the proposed project would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-2 The proposed project would not result in substantial soil erosion or the loss of topsoil.

Soils are particularly prone to erosion during the grading phase of development, especially during heavy rains. Construction projects of one acre or more are regulated under the General Construction Permit, Order No. 2012-0006-DWQ, issued by the State Water Resources Control Board in 2012. Projects obtain coverage by developing and implementing a Stormwater Pollution Prevention Plan estimating sediment risk from construction activities to receiving waters and specifying BMPs that would be used by the project to minimize pollution of stormwater. The use of a Storm Water Pollution Prevention Plan (SWPPP), which specifies BMPs for temporary erosion controls, reduces the potential for erosion during construction period activities. Standard erosion control measures would be implemented as part of a SWPPP for proposed development within the project site to minimize the risk of erosion or sedimentation during construction. The SWPPP must include an erosion control plan that prescribes measures such as phasing grading, limiting areas of disturbance, designating restricted-entry zones, diverting runoff from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for revegetation or mulching.

Development of the proposed project is required to be designed in compliance with existing regulations, including the preparation and submittal of a SWPPP and the GEI Report, would identify project- and site-specific requirements to ensure compliance with established Alameda County Code of Ordinances and CBC standards regulating grading, building construction, and erosion. Grading and construction would be in compliance with the erosion controls in Section 6.1.8 of the GEI Report. A comprehensive discussion of erosion and water quality from rain events can be found in Section 4.8, *Hydrology and Water Quality*. As such, the proposed project would not result in substantial soil erosion or loss of topsoil, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

[17] California Geological Survey, 2019, Earthquake Zones of Required Investigation, https://maps.conservation.ca.gov/cgs/EQZApp/, accessed April 20, 2022.

GEO-3 The proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Susceptibility of slopes to landslides and lurching (earth movement at right angles to a cliff or steep slope during ground shaking) depend on several factors that are usually present in combination—steep slopes, condition of rock and soil materials, presence of water, formational contacts, geologic shear zones, and seismic activity. As stated in impact discussion GEO-1, although the site is located within a Zone of Required Investigation for earthquake-induced landslides, the GEI Report states that there are no mapped or observed indications of historic landslides, including rock falls, debris flows, deep or shallow failure on the site.[18] Based on the conclusions of the GEI Report, the potential for landslides is considered low.

As stated in impact discussion GEO-1, the GEI Report states that the subsurface lacks the conditions required to promote liquefaction. Therefore, the proposed project would not subject people or structures to liquefaction hazards, and impacts would be less than significant.

The GEI Report indicates that the soils on-site have a Plasticity Index (PI) as high as 34, indicating highly plastic, which is indicative of clay. Collapsible soils are associated with dry sandy soils, which were not observed on-site. Therefore, based on the observations of the GEI Report, collapsible soils are not likely to be encountered on-site.

As discussed in Section 4.5.1.2 under *Subsidence*, the project site is not included in the USGS's areas of known land subsidence. In addition, the project site is located nearby a populous area where local water districts regularly monitor groundwater levels, and because of this the project site is not likely to be subject to significant groundwater changes that can lead to subsidence.

Overall, impacts related to unstable soils as a result of the project would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-4 The proposed project could be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), however would not create substantial direct or indirect risks to life or property.

Expansive soils swell when they become wet and shrink when they dry out, resulting in the potential for cracked building foundations and, in some cases, structural distress of the buildings themselves. As described in the GEI Report, onsite soils had a Plasticity Index as high as 34, which indicates highly plastic soils, indicative of clay. Clay soils with high plasticity could also be expansive. The GEI Report has a comprehensive list of options on how to mitigate expansive soils. Title 15 of the Alameda County Municipal Code requires that site preparations follow the recommendations of the geotechnical report.

[18] California Geological Survey, 2019, Earthquake Zones of Required Investigation, https://maps.conservation.ca.gov/cgs/EQZApp/, accessed April 20, 2022.

No significant impacts are anticipated to occur as a result of project development based on the recommendations of the GEI report, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-5 The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The project would involve the use of septic tanks. The existing septic system would be removed and replaced by a new septic system. The septic tanks would be constructed and permitted in accordance with Title 15 of the Alameda County Municipal Code. In addition, the soils onsite have been proven to be capable of supporting the existing septic system, therefore, issues with inadequate soils for septic tank usage is not likely or anticipated. As such, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-6 The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

A paleontological resource is a natural resource characterized as faunal or floral fossilized remains but may also include specimens of non-fossil material dating to any period preceding human occupation. These resources are valued for the information they yield about the history of the earth and its past ecological settings. The resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Often, they appear as simply small outcroppings visible on the surface; other times they are below the ground surface and may be encountered during grading.

Although paleontological resources have been identified on a nearby project, they have not been identified on the project site. Because the proposed project requires ground disturbing activities, there could be fossils of potential scientific significance and other unique geologic features that are not recorded. Such ground-disturbing construction associated with development permitted under the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features. This represents a potentially *significant* impact.

Significance without Mitigation: Significant.

Mitigation Measure GEO-6: In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the

paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.

Significance with Mitigation: Less than significant.

GEO-7	**The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.**

Risk from fault rupture, ground shaking, and landslides are considered less than significant. Risks from liquefaction, expansive soil, and erosion would be mitigated with mandatory compliance with the recommendations of the GEI Report and any subsequent geotechnical reports as required by Title 15 of the Alameda County Code of Ordinances. The proposed project would also be required to comply with regulations set forth in the CBC pertaining to structural safety and the minimizing of geologic hazards to the extent feasible. In addition, geologic hazards described above are specific to the project site. As landslides do not pose a significant impact, movement of soils on-site would not be expected to impact the project site and/or immediate area. Finally, potential impacts to paleontological resources would be mitigated to less-than-significant through Mitigation Measure GEO-1. Thus, the proposed project would not contribute to a cumulative impact regarding geologic hazards when taken into consideration with other projects. Therefore, cumulative impacts associated with the proposed project would be considered *less than significant*.

Significance Without Mitigation: Less than significant.

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4.6 GREENHOUSE GAS EMISSIONS

This chapter describes the existing greenhouse gas (GHG) emissions in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed project. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing GHG setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts. This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD or Air District). GHG emissions modeling was conducted using the California Emissions Estimator Model (CalEEMod), Version 2020.4, and model outputs are in Appendix B, *Air Quality and Greenhouse Gas Modeling,* of this Draft EIR.

4.6.1 TERMINOLOGY

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e)**. The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

4.6.2 ENVIRONMENTAL SETTING

4.6.2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC

that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[1,2,3]

The major GHGs are briefly described as follows:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of applicable GHG emissions are shown in Table 4.6-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for methane (CH_4), a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.

[1] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

[2] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop of changing radiative forcing rather than a primary cause of change.

[3] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. The share of black carbon emissions from transportation is dropping rapidly and is expected to continue to do so between now and 2030 as a result of California's air quality programs. The remaining black carbon emissions will come largely from woodstoves/fireplaces, off-road applications, and industrial/commercial combustion (CARB. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf However, state, State and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

TABLE 4.6-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[a]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[a]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[a]
Carbon Dioxide (CO_2)	1	1	1
Methane[b] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Notes: GWP values identified in AR4 are used by BAAQMD to maintain consistency in statewide GHG emissions modeling.
a. Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
Sources: Intergovernmental Panel on Climate Change, 1995, Second Assessment Report: Climate Change 1995; Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press; Intergovernmental Panel on Climate Change. 2014. Fifth Assessment Report: Climate Change 2014. New York: Cambridge University Press.

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The recent Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) summarizes the latest scientific consensus on climate change. It finds that atmospheric concentrations of CO_2 have increased by 50 percent since the industrial revolution and continue to increase at a rate of two parts per million each year. By the 2030s, and no later than 2040, the world will exceed 1.5°C warming.[4] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[5] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[6]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather

[4] California Air Resources Board. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

[5] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[6] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.

events. Climate-change scenarios are affected by varying degrees of uncertainty—for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

There is at least a greater than 50 percent likelihood that global warming will reach or exceed 1.5°C in the near-term, even for the very low GHG emissions scenario.[7] Climate change is already impacting California and will continue to affect it for the foreseeable future. For example, the average temperature in most areas of California is already 1°F higher than historical levels, and some areas have seen average increases in excess of 2°F.[8] The California Fourth Climate Change Assessment identifies the following climate change impacts under a business-as-usual scenario:

- Annual average daily high temperatures in California are expected to rise by 2.7°F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages. Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier seasonal conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter rainy season.
- High heat increases the risk of death from cardiovascular, respiratory, cerebrovascular, and other diseases.
- Droughts are likely to become more frequent and persistent through 2100[9].

[7] Intergovernmental Panel on Climate Change. 2022, February 2022. Sixth Assessment Report: Climate Change 2022. Impacts, Adaptation and Vulnerability, Summary for Policymakers. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

[8] California Office of Emergency Services (CalOES). 2020, June. California Adaptation Planning Guide. https://www.caloes.ca.gov/HazardMitigationSite/Documents/CA-Adaptation-Planning-Guide-FINAL-June-2020-Accessible.pdf

[9] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and with unprecedented dry years in 2014 and 2015. Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015 (OEHHA. 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf).

- Climate change is projected to increase the strength of the most intense precipitation and storm events affecting California.
- Mountain ranges in California are already seeing a reduction in the percentage of precipitation falling as snow. Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt.
- Marine layer clouds are projected to decrease, though more research is needed to better understand their sensitivity to climate change.
- Extreme wildfires (i.e., fires larger than 10,000 hectares or 24,710 acres) would occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century.
- Exposure to wildfire smoke is linked to increased incidence of respiratory illness.
- Sea level rise is expected to continue to increase erosion of beaches, cliffs, and bluffs.[10]

Global climate change risks to California are described below and shown in Table 4.6-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

TABLE 4.6-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Poor air quality made worse Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure

[10] California Office of Emergency Services (CalOES). . 2020, June. California Adaptation Planning Guide. https://www.caloes.ca.gov/HazardMitigationSite/Documents/CA-Adaptation-Planning-Guide-FINAL-June-2020-Accessible.pdf

TABLE 4.6-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Forest and Biological Resource Impacts	Increased risk and severity of wildfires
	Lengthening of the wildfire season
	Movement of forest areas
	Conversion of forest to grassland
	Declining forest productivity
	Increasing threats from pest and pathogens
	Shifting vegetation and species distribution
	Altered timing of migration and mating habits
	Loss of sensitive or slow-moving species

Sources: California Climate Change Center, 2012, Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. California Energy Commission, 2006. Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, CEC-500-2006-077. California Energy Commission, 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077. California Natural Resources Agency, 2014. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy. CalOES. 2020, June. California Adaptation Planning Guide. https://www.caloes.ca.gov/HazardMitigationSite/Documents/CA-Adaptation-Planning-Guide-FINAL-June-2020-Accessible.pdf.

- Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months.[11]
- Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[12]
- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[13]

[11] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed May 25, 2022.

[12] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed May 25, 2022.

[13] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed May 25, 2022.

- Increase Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[14]

4.6.2.2 REGULATORY FRAMEWORK

This section summarizes key federal, State, regional, and County regulations and programs related to GHG emissions resulting from the proposed project.

Federal Regulations

The United States Environmental Protection Agency (USEPA) announced on December 7, 2009 that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[15]

To regulate GHGs from passenger vehicles, the USEPA issued an endangerment finding.[16] The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, HCFCs, PFCs, and SF_6— that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, per BAAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

- US Mandatory Report Rule for Greenhouse Gases (2009). In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ per year are required to submit an annual report.

[14]California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed May 25, 2022.

[15] U.S. Environmental Protection Agency, 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html, accessed May 25, 2022.

[16] U.S. Environmental Protection Agency, 2009. EPA: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act. https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean, accessed May 25, 2022.

- Update to Corporate Average Fuel Economy Standards (2021 to 2026). The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the USEPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as The Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet these standards.[17]
- USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing). Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19,2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive (EO) S-03-05, EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375. These are summarized as follows:

- Executive Order S-03-05. EO S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:
  - 2000 levels by 2010.
  - 1990 levels by 2020.
  - 80 percent below 1990 levels by 2050.
- Assembly Bill 32. Also known as the Global Warming Solutions Act (2006), AB 32 was signed August 31, 2006, in order to reduce California's contribution of GHG emissions. AB 32 follows the

[17] California Air Resources Board. California and major automakers reach groundbreaking framework agreement on clean emission standards. Accessed March 29, 2020. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission

2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

- Executive Order B-30-15. EO B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, *Safeguarding California*, in order to ensure climate change is accounted for in state planning and investment decisions.
- Senate Bill 32 and Assembly Bill 197. In September 2016, SB 32 and AB 197 were signed into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.
  - 2017 Climate Change Scoping Plan Update. EO B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) to address the 2030 target for the State. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[18]

    California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (i.e., methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants (TACs) emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

    - Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE vehicle buses and trucks.
    - Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
    - Implementation of SB 350, which expands the Renewables Portfolios Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.

[18] California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed November 21, 2019.

- California Sustainable Freight Action Plan, which improves freight system efficiency, and utilizes near-zero emissions technology, and deployment of ZE vehicle trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute to potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits. [19]

- Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.
  - Draft 2022 Climate Change Scoping Plan Update. CARB released the Draft 2022 Scoping Plan on May 10, 2022. The Scoping Plan was updated to address the carbon neutrality goals of EO B-55-18. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time. The measures in the Scoping Plan would achieve 80 percent below 1990 levels by 2050. Final adoption of the 2022 Scoping Plan is anticipated in late fall 2022.[20] CARB's 2022 Scoping Plan identifies strategies that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals (see Table 4.6-3, *Priority Strategies for Local Government Climate Action Plans*).

[19] California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed November 21, 2019.

[20] CARB. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

TABLE 4.6-3 PRIORITY STRATEGIES FOR LOCAL GOVERNMENT CLIMATE ACTION PLANS

Priority Area	Priority Strategies
Transportation Electrification	▪ Convert local government fleets to zero-emission vehicles (ZEV). ▪ Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as permit streamlining, infrastructure siting, consumer education, or preferential parking policies).
VMT Reduction	▪ Reduce or eliminate minimum parking standards in new developments, ▪ Adopt and implement Complete Streets policies and investments, consistent with general plan circulation element requirements, ▪ Increase public access to shared clean mobility options (such as planning for and investing in electric shuttles, bike share, car share, transit). ▪ Implement parking pricing or transportation demand management pricing strategies. ▪ Amend zoning or development codes to enable mixed-use, walkable, and compact infill development (such as increasing allowable density of the neighborhood). ▪ Preserve natural and working lands.
Building Decarbonization	▪ Adopt policies and incentive programs to implement energy efficiency retrofits (such as weatherization, lighting upgrades, replacing energy intensive appliances and equipment with more efficient systems, etc.). ▪ Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings. ▪ Adopt policies and incentive programs to reduce electrical loads from equipment plugged into outlets (such as purchasing Energy Star equipment for municipal buildings, occupancy sensors, smart power strips, equipment controllers, etc.). ▪ Facilitate deployment of renewable energy production and distribution and energy storage.

Source: CARB. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

For CEQA projects for proposed land use developments, CARB recommends demonstrating that they are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- At least 20 percent of the units are affordable to lower-income residents;
- Result in no net loss of existing affordable units;
- Utilize existing infill sites that are surrounded by urban uses, and reuse or redevelop previously developed, underutilized land presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer);
- Include transit-supportive densities (minimum of 20 residential dwelling units/acre), or are in proximity to existing transit (within ½ mile), or satisfy more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS), for "SCS consistency" that would go further to reduce emissions;
- Do not result in the loss or conversion of the State's natural and working lands;

- Use all electric appliances, without any natural gas connections, and would not use propane or other fossil fuels for space heating, water heating, or indoor cooking;
- Provide EV charging infrastructure at least in accordance with the California Green Building Standards Code (CAlGreen) Tier 2 standards; and
- Relax parking requirements by:
- Eliminating parking requirements or including maximum allowable parking ratios.
- Providing residential parking supply at a ratio of <1 parking space per unit;
- Unbundling residential parking costs from costs to rent or lease.[21]

The second approach to project-level alignment with State climate goals is net zero GHG emissions. The third approach to demonstrating project-level alignment with State climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted.[22]

- Senate Bill 375. In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.
    - 2017 Update to the SB 375 Targets. CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.[23] The updated targets become effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing.

[21] CARB. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

[22] CARB. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

[23] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For next SCS update, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent). CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies.[24]

- Transportation Sector Regulations – Assembly Bill 1493. Also known as Pavley I, AB 1493 is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under the heading for Federal Regulations, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.[25]
- Transportation Sector Regulations – Executive Order S-01-07. On January 18, 2007, the state set a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.
- Transportation Sector Regulations – Executive Order B-16-2012. Signed on March 23, 2012, the State required CARB, the California Energy Commission, the Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are

[24] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

[25] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

zero-emission by 2015 and at least 25 percent by 2020. The executive order also stabled a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

- Transportation Sector Regulations – Executive Order N-79-20. On September 23, 2020, Governor Newsom signed EO N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The EO's goal for the state is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.
- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bills 1078, 107, and X1-2, and Executive Order S-14-08. A major component of California's Renewable Energy Program is the renewable portfolios standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.
- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 350. Signed in September 2015, SB 350 establishes tiered increases the RPS to 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.
- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.
- Energy Efficiency Regulations – California Building Code: Building Energy Efficiency Standards. Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018, and went into effect on January 1, 2020. The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require the installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa); 3) residential and nonresidential ventilation

requirements; 4) and nonresidential lighting requirements.[26] Under the 2019 standards, nonresidential buildings are 30 percent more energy efficient than under the 2016 standards, and single-family homes are 7 percent more energy efficient.[27] When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.[28] Furthermore, on August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards become effective and replace the existing 2019 standards on January 1, 2023. The 2022 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.[29]

- Energy Efficiency Regulations – California Building Code: CALGreen. On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[30] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen standards became effective on January 1, 2020.
- Energy Efficiency Regulations – 2006 Appliance Efficiency Regulations. Adopted by the California Energy Commission on October 11, 2006, the 2006 Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1608) were approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.
- Solid Waste Regulations – Assembly Bill 939. California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 *et seq.*) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county

[26] California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html.

[27] California Energy Commission (CEC). 2018b. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

[28] California Energy Commission. 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

[29] California Energy Commission. 2021, May 19. Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D.

[30] The green building standards became mandatory in the 2010 edition of the code.

prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

- Solid Waste Regulations – Assembly Bill 341. AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.
- Solid Waste Regulations – Assembly Bill 1327. The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Sections 42900 *et seq.*) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.
- Solid Waste Regulations – Assembly Bill 1826. AB 1826, signed on October 2014, requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.
- Water Efficiency Regulations – SBX7-7. The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009 to 2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.
- Water Efficiency Regulations –Assembly Bill 1881. The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.
- Short-Lived Climate Pollutants – Senate Bill 1383. On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the State board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent

below 2013 levels by 2030. The bill also establishes targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Strategy," which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[31] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Regional Plans and Regulations

Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2050 blueprint to Plan Bay Area was adopted jointly by the ABAG and MTC in October 2021.[32] The Plan Bay Area 2050 serves as a 30-year plan with 35 new strategies to provide a more equitable and resilient future for residents in the Bay Area. This regional plan aims for more affordable and accessible transportation, which will significantly decrease greenhouse gas emissions to meet the state mandate of a 19 percent reduction in per-capita emissions by 2035.[33] The proposed project site is not within a PDA.[34]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* on April 19, 2017. The 2017 *Clean Air Plan* also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.

[31] California Air Resources Board, 2017. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed November 21, 2019.

[32] Metropolitan Transportation Commission and Association of Bay Area Governments. 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/finalplan2050

[33] Metropolitan Transportation Commission and Association of Bay Area Governments. 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/finalplan2050

[34] Metropolitan Transportation Commission and Association of Bay Area Governments, 2020. Priority Development Areas (Plan Bay Area 2050) ArcGIS. https://opendata.mtc.ca.gov/datasets/priority-development-areas-plan-bay-area-2050/explore?location=37.718429%2C-122.059406%2C11.63, accessed May 21, 2022.

- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[35]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the Air District are required to register and offer commuter benefits to employees. In partnership with the Air District and the Metropolitan Transportation Commission (MTC), the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

[35] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed May 25, 2022.

Regional Plans and Regulations

Alameda County (Unincorporated Areas) Community Climate Action Plan

The Community Climate Action Plan was approved and adopted as an Element of the Alameda County General Plan by the Alameda County Board of Supervisors in 2014.[36] The CAP outlines a course of action to reduce community wide GHG emissions generated within the unincorporated areas of Alameda County to 15 percent below 2005 levels by 2020 and to set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The strategies outlined in the CAP provide clear guidance to County staff regarding when and how to implement key provisions of the plan. The strategies and measures established by the CAP aim to reduce GHG emissions in six areas: transportation, land use, building energy, water, waste, and green infrastructure. The measures applicable to the proposed project are as follows:

- Building Energy
  - E-9: Provide incentives for buildings that exceed the California Title-24 standards for energy efficiency by 30 percent (Tier 2).
  - E-10: Require new construction to use building materials containing recycled content.
- Water
  - WT-3: Adopt an ordinance that allows the installation and use of greywater (recycled) systems for subsurface irrigation
- Waste
  - WS-3: Develop a food waste collection program and an ordinance that requires all household and commercial food wastes and food soiled paper to be placed in organics carts

4.6.2.3 EXISTING CONDITIONS

California's GHG Sources and Relative Contribution

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4.[37] Based on these GWPs, California produced 418.2 $MMTCO_2e$ GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent).[38]

[36]Alameda County. 2014, February 4. Alameda County (Unincorporated Areas) Community Climate Action Plan. http://www.acgov.org/cda/planning/generalplans/documents/110603_Alameda_CCAP_Final.pdf.

[37] Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

[38] California Air Resources Board. 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 $MMTCO_2e$ and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 $MMTCO_2e$ lower than the AB 32 target for year 2020. Per capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.5 $MTCO_2e$ per person in 2019, a 25 percent decrease.

Transportation emissions continued to decline in 2019 statewide as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases comprised 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 45 percent since the 2001 peak, though the state's gross domestic product grew 63 percent during this period.[39]

Project Site

The project site currently houses a mobile home, barn, garage building, and paved areas. Existing emissions associated with the project site includes mobile-source emissions from vehicle trips, water use, wastewater and solid waste generation, propane use, and electricity demands required by the existing buildings.

4.6.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant greenhouse gas emission impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.
3. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to greenhouse gas emissions.

[39] 2022, April 20. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf.

4.6.3.1 BAAQMD STANDARDS OF SIGNIFICANCE

In April 2022, BAAQMD adopted the *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans* (Justification Report).[40] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD identified in their Justification Report that projects that implement the following Best Management Practices (BMPs) would contribute a proportionate share of what will be required to achieve the state's long-term climate goals, as described below:

A. Projects must include, at a minimum, the following project design elements:
    1. Buildings
        a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
        b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    2. Transportation
        a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
        b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

B. OR, projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

BAAQMD does not have thresholds of significance for construction related GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project.[41]

[40] Bay Area Air Quality Management District. 2022, April. Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

[41] Bay Area Air Quality Management District. 2022, April. Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

4.6.4 IMPACT DISCUSSION

GHG-1 The proposed project would generate greenhouse gas emissions, either directly or indirectly, that result in a significant impact on the environment.

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this Section measures the proposed project's contribution to the cumulative environmental impact associated with GHG emissions. For projects where there is no applicable GHG reduction plan, cumulative GHG emissions impacts are based BAAQMD's *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (Justification Report) adopted in April 2022.[42]

Development of the proposed project would contribute to climate change through direct and indirect emissions of GHG emissions. BAAQMD identified in their Justification Report that projects that implement the following Best Management Practices (BMPs) would contribute their fair share of what will be required to achieve the state's long-term climate goals, as shown in Table 4.6-4, *Consistency Analysis with BAAQMD's GHG Best Management Practices*. As shown in this table additional mitigation is necessary to ensure that the proposed project implements the voluntary Tier 2 standards of CALGreen and provides sufficient electric vehicle (EV) capable for the proposed project.

TABLE 4.6-4 CONSISTENCY ANALYSIS WITH BAAQMD'S GHG BEST MANAGEMENT PRACTICES

Sector	Consistency Analysis
Buildings	
a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).	**Not Consistent.** The proposed project would use propane for the proposed multi-use building and shower buildings.
b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.	**Consistent.** The proposed buildings would be built to comply with the most current CALGreen Building Code requirements and building efficiency standards to reduce unnecessary energy consumption. See also Appendix A, Notice of Preparation, Section VI, Energy).
Transportation	
a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	**Not Consistent.** The proposed project would not provide the number of EV charging stations identified under CALGreen Voluntary Tier 2 requirements.

[42] Bay Area Air Quality Management District. 2022, April. Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

TABLE 4.6-4 CONSISTENCY ANALYSIS WITH BAAQMD'S GHG BEST MANAGEMENT PRACTICES

b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:	**Consistent.** As identified in the Section XV, *Transportation*, the proposed project would not have a significant impact on VMT under SB 743. The proposed project would generate fewer than 110 trips per day, which is the screening threshold guidance provided by California Governor's Office of Planning and Research (OPR).

Source: BAAQMD. 2022, April 20. The Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en.

Significance without Mitigation: Potentially significant.

Impact GHG-1.1: The proposed project would use propane for the proposed structures and fire pit and therefore may generate GHG emissions that may have a significant impact on the environment.

Mitigation Measure GHG-1.1a: The project applicant shall design and construct all new buildings to use all electric energy systems, meaning that electricity is the primary source of energy for water heating; mechanical; heating, ventilation, and air conditioning (HVAC) (i.e., space-heating); cooking; and clothes-drying. Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the County of Alameda Planning Director or their designee, to verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the County shall verify implementation of the design requirements specified above.[43]

Mitigation Measure GHG-1.1b: The project applicant shall purchase 450[44] voluntary carbon credits. The project applicant shall provide proof of offset credit retirement on the relevant registry – including certificate numbers or a transaction ID that match the quantity purchased – along with a clearly identified purpose and the beneficiary of the retirement- prior to issuance of an occupancy permit for each development phase to the County.

Local Prioritization. The project applicant shall prioritize local (within the Northern California region) and in-state credits over national credits. Credits shall be third-party verified by a major registry recognized by the California Air Resources Board (CARB) such as Climate Action Reserve (CAR). If sufficient local and in-state credits are not available, the project applicant shall purchase CARB-conforming national credits registered with an approved registry

Purchase of Voluntary Carbon Offsets. The project applicant shall purchase CARB-verified GHG credits to achieve the measure performance standards for each development phase.

The project applicant may purchase GHG credits from a voluntary GHG credit provider that has an established protocol that requires projects generating GHG credits to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and

[43] The caretaker's unit would remain without alteration or expansion, including its ongoing use of propane.
[44] The proposed project is assumed to generate 15 $MTCO_2e$/year from propane use over 30 years.

additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). Definitions for these terms are as follows.

- Real: Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").[1]
- Additional: GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration.
- Permanent: To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.
- Quantifiable: The ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage.
- Verified: GHG reductions must result from activities that have been verified. Verification requires third-party review of monitoring data for a project to ensure the data are complete and accurate.
- Enforceable: The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and the legal instrument can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means. Please note that per this mitigation measure, only credits originating within the United States are allowed.

GHG credits may be in the form of GHG offsets for prior reductions of GHG emissions verified through protocols or forecasted mitigation units for future committed GHG emissions meeting protocols. All credits shall be documented per protocols functionally equivalent in terms of stringency to CARB's protocol for offsets in the cap-and-trade program.

Prioritization of Emissions Reduction Commitments. The project applicant shall identify GHG credits in geographies closest to the project site first and only go to larger geographies (i.e., California, United States) if adequate credits cannot be found in closer geographies, or the procurement of such credits would create an undue financial burden.

The project applicant shall provide the following justification for not using credits in closer geographies in terms of either availability or cost prohibition.

- Lack of enough credits available in closer geographies (i.e., Northern California).

- Prohibitively costly credits in closer geographies defined as credits costing more than 300 percent the amount of the current costs of credits in the regulated CARB offset market.
- Documentation submitted supporting GHG credit proposals shall be prepared by individuals qualified in GHG credit development and verification and such individuals shall certify the following.
- Proposed credits meet the criteria in California Health and Safety Code Section 38562(d)(1) and (d)(2).
- Proposed credits meet the definitions for the criteria provided in this measure.
- The protocols used for the credits meet or exceed the standards for stringency used in CARB protocols for offsets under the California cap-and-trade system.

Impact GHG-1.2: The proposed project does not meet the CALGreen Tier 2 requirement for number of EV charging stations and therefore may generate GHG emissions that may have a significant impact on the environment.

Mitigation Measure GHG-1.2: Site plans submitted to the County shall identify parking stalls with electric vehicle (EV) capable charging stations consistent with the 2019 California Green Building Standards Code (CALGreen) voluntary Tier 2 nonresidential measures to provide four electric vehicle (EV) charging stations for the 15 proposed parking spaces, as seen on Table A5.106.5.3.2 of the 2019 CALGreen. Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the County of Alameda Community Development Director or their designee, to verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the County shall verify implementation of the design requirements specified above.

Significance with Mitigation: Less than Significant with Mitigation Incorporated. With implementation of Mitigation Measures GHG-1.1a and GHG-1.2, the proposed buildings would use all electric energy systems and voluntary carbon offsets would be purchased to offset propane use. Implementation of Mitigation Measure GHG-1.2 would provide the required four EV charging stations; and therefore, the proposed project would implement the BMPs identified in the Justification Report. Impacts would be *less than significant with mitigation incorporated.*

GHG -2 The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The following discusses project consistency with applicable plans adopted for the purpose of reducing GHG emissions, which include CARB's Scoping Plan and MTC/ABAG's *Plan Bay Area 2050*.

CARB Scoping Plan

CARB's Climate Change Scoping Plan outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, EO S-03-05, and EO B-55-18. The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include: implementing SB 350, which expands the RPS to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32, SB 32, EO S-05-03, and EO B-55-18. In addition, new buildings are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. The project's GHG emissions would be reduced from compliance with statewide measures that have been adopted since AB 32, SB 32, EO S-03-05, and EO B-55-18 were adopted. Therefore, impacts would be *less than significant*.

Plan Bay Area

Plan Bay Area 2050, the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS) that identifies the sustainable vision for the Bay Area.[45] To achieve MTC's/ABAG's sustainable vision for the Bay Area, the *Plan Bay Area 2050* land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. The project is not within a PDA.[46] The proposed project would

[45] Association of Bay Area Governments/Metropolitan Transportation Commission. October 21, 2021. https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf.

[46] Metropolitan Transportation Commission and Association of Bay Area Governments, 2020. Priority Development Areas (Plan Bay Area 2050) ArcGIS. https://opendata.mtc.ca.gov/datasets/priority-development-areas-plan-bay-area-2050/explore?location=37.718429%2C-122.059406%2C11.63, accessed May 21, 2022.

involve the construction of a new outdoor recreation facility and would not directly affect the regional population and employment projects. Therefore, the proposed project would not conflict with the land use concept plan in *Plan Bay Area 2050* and impacts would be *less than significant*.

Alameda County (Unincorporated Areas) Community Climate Action Plan

The Community Climate Action Plan was approved and adopted as an Element of the Alameda County General Plan by the Alameda County Board of Supervisors in 2014.[47] The CAP provides GHG reduction measures to achieve the statewide AB 32 target of a 15 percent reduction below baseline emissions by 2020 and to set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The strategies and measures established by the CAP aim to reduce GHG emissions in the following six areas: transportation, land use, building energy, water, waste, and green infrastructure.

Based on the scope and nature of the proposed project in that it would involve construction and operation of an outdoor recreation facility, the transportation, land use, and green infrastructure measures would not be applicable. The proposed buildings would comply with the current Building Energy Efficiency Standards and CALGreen and would comply with the Building Energy measures associated with new construction. In addition, as seen in Section 4.14, *Utilities and Service Systems*, landscaping and gardening activities at the site would be supplied with a combination of collected rainwater and greywater and would comply with the measures associated with GHG reductions from water use. Furthermore, over 59 percent of the waste generated by outdoor recreation facilities is food waste that can be recycled and composted. The project would incorporate solid waste reduction features, including a composting program and a food waste program. Overall, the proposed project would be consistent with the strategies and measures identified in the County CAP. Therefore, the impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

GHG-3	**The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to greenhouse gas emissions.**

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact GHG-1 and Impact GHG-2 are not project-specific impacts to global warming, but the proposed project's contribution to this cumulative impact. As discussed under Impacts GHG-1 and GHG-2, implementation of the project would be potentially significant prior to mitigation as the proposed project would not meet the CALGreen Tier 2 requirement for number of EV charging stations and because the proposed buildings would use propane for the multi-use building, shower building, and fire pit.

Significance without Mitigation: Significant.

[47] Alameda County. 2014, February 4. Alameda County (Unincorporated Areas) Community Climate Action Plan. http://www.acgov.org/cda/planning/generalplans/documents/110603_Alameda_CCAP_Final.pdf.

Mitigation Measure GHG-3: Implement Mitigation Measures GHG-1.1a, GHG-1.1b, and GHG-1.2.

Significance with Mitigation: Less than significant. Implementation of Mitigation Measure GHG-1.1a and GHG-1.1b would reduce GHG emissions by requiring that the proposed buildings would use all electric energy systems and purchasing of voluntary carbon offsets. Mitigation Measure GHG-1.2 would reduce GHG emissions by providing four EV charging stations on the project site. Therefore, the project related GHG emissions and their contribution to global climate change would not be cumulatively considerable, and GHG emissions impacts less than significant with implementation of mitigation measures.

4.7 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the regulatory framework and existing conditions on the project site related to hazards and hazardous materials, and an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to the release of hazardous materials into the environment. The analysis in this section is based, in part, upon the following documents:

Draft Fire Safety & Emergency Response Plan, The Mosaic Project, 2022.

A complete copy of this document is included as Appendix F to this Draft EIR.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 REGULATORY FRAMEWORK

Federal

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substances Control is responsible for implementing the Resource Conservation and Recovery Act program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, a CUPA is a local agency that has been certified by CalEPA to enforce hazardous waste laws. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA, but is the responsible local agency that would implement the six Unified Programs until they are certified.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), also known as Title III of the Superfund Amendments and Reauthorization Act, was enacted in October 1986. This law requires any infrastructure at the State and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by United States Environmental Protection Agency's (USEPA) Office of Emergency Management. The USEPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, Superfund Amendments and Reauthorization Act Title III is implemented through California Accidental Release Prevention program.

The State of California has delegated local oversight authority of the California Accidental Release Prevention program to the Alameda County Department of Environmental Health, Hazardous Materials Division.

Hazardous Materials Transportation Act

The United States Department of Transportation regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. The California State Fire Marshal's Office has oversight authority for hazardous materials liquid pipelines. The California Public Utilities Commission has oversight authority for natural gas pipelines in California. These agencies also govern permitting for hazardous materials transportation.

Federal Response Plan and National Response Framework

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and other resource providers, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency. The Federal Response Plan is part of the National Response Framework, which was most recently updated in 2019.[1]

The National Response Framework, published by the Department of Homeland Security, is a guide to how the nation responds to all types of disasters and emergencies. The Framework describes specific authorities and best practices for managing incidents that range from serious local to large-scale terrorist attacks or catastrophic natural disasters. In addition, the Framework describes the principles, roles, and responsibilities, and coordinating structures for responding to an incident, and further describes how response efforts integrate with those of the other mission areas.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 authorizes the federal government to provide assistance in emergencies and disasters when State and local capabilities are exceeded. The Robert T. Stafford Disaster Relief and Emergency Assistance Act constitutes statutory authority for most federal disaster response activities, especially as they pertain to the federal Emergency Management Agency and its programs.

[1] U.S. Department of Homeland Security, 2019. *National Response Framework, 4th Edition*. https://www.fema.gov/sites/default/files/2020-04/NRF_FINALApproved_2011028.pdf, accessed May 26, 2022.

Occupational Safety and Health Administration

The federal Occupational Safety and Health Act of 1970 authorizes each state (including California) to establish their own safety and health programs with the US Department of Labor, Occupational Safety and Health Administration's (OSHA) approval. The California Department of Industrial Relations regulates implementation of worker health and safety in California. California OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations.

OSHA Regulation 29 Code of Federal Regulations Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. Federal, State, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition following all applicable regulations.

State Regulations

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The CBC is based on the 2015 International Building Code, but has been modified for California conditions. The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas. In addition to the CBC, Section 2327, *Camping Cabins*, of Chapter 2.2, Division 1 of Title 25 of the California Code of Regulations includes special requirements that are specifically applicable for camping cabins.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the California Code of Regulations. The CFC is revised and published approximately every three years by the California Building Standards Commission.

California Governor's Office of Emergency Services

The California Governor's Office of Emergency Services (Cal OES) began as the State War Council in 1943. With an increasing emphasis on emergency management, it officially became Cal OES in 1970. The California Emergency Management Agency (CalEMA) was established as part of the Governor's Office on January 1, 2009, merging the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. The CalEMA was responsible for the coordination of overall State agency response to major disasters in support of local government. The agency was also responsible for assuring the State's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. On July 1, 2013, Governor Edmund G. Brown Jr.'s eliminated CalEMA and restored it to the Governor's Office as Cal OES.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California.[2] CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). Additionally, CAL FIRE produces the *Strategic Fire Plan for California*, most recently updated in 2018, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments.[3]

State Responsibility Areas Fire Safe Regulations

SRA Fire Safe Regulations outline basic wildland fire protection standards and can decrease the risk of wildfire events. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations. The State statute for wildfire protection is PRC Section 4290. Requirements in the PRC include information on:

- Road standards for fire equipment access
- Standards for signs identifying streets, roads, and buildings
- Minimum private water supply reserves for emergency fire use
- Fuel breaks and greenbelts
- Basic emergency access

California Environmental Protection Agency

CalEPA was created in 1991, unifying California's environmental authority in a single cabinet-level agency and bringing the California Air Resources Board (Air Resources Board), State Water Resources Control Board, Regional Water Quality Control Boards (RWQCBs), California Department of Resources Recycling and Recovery (formerly the Integrated Waste Management Board), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment, and Department of Pesticide

[2] California Department of Forestry and Fire Protection, 2022. Fire Hazard Severity Zone Viewer, https://egis.fire.ca.gov/FHSZ/, accessed May 26, 2022.

[3] California Department of Forestry and Fire Protection, 2018, *2018 Strategic Fire Plan for California,* https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf, accessed May 26, 2022.

Regulation under one agency. These agencies were placed within the CalEPA as the "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Its mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

Department of Toxic Substance Control

The DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services (DHS) lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board as having underground storage tank (UST) leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and California Code of Regulations, Title 19, Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business which uses hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

Asbestos-Containing Materials Regulations

State-level agencies, in conjunction with the federal EPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials (ACMs). Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations and medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, State, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Regional

San Francisco Bay Regional Water Quality Control Board

The Porter-Cologne Water Quality Act[4] established the State Water Resources Control Board and divided the state into nine regional basins, each under the jurisdiction of a RWQCB. The San Francisco Bay Region (Region 2) RWQCB (San Francisco Bay RWQCB) regulates water quality in the project area. The San Francisco Bay RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened, and to require remediation actions, if necessary.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of CalEPA and the California Air Resources Board). BAAQMD is responsible for preparation of attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and issuance of permits for activities, including demolition and renovation activities affecting asbestos containing materials (District Regulation 11, Rule 2) and lead (District Regulation 11, Rule 1).

Alameda County Department of Environmental Health

The Alameda County Department of Environmental Health (ACDEH) is the Certified Unified Program Agency (CUPA) for the project site and coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protection programs, including the following:[5]

- Hazardous Materials Business Plan
- Hazardous Waste Generator
- Underground Storage Tank
- Aboveground Petroleum Storage Act
- California Accidental Release Prevention

Alameda County Fire Department

The Alameda County Fire Department (ACFD) provides all-risk emergency services to the unincorporated areas of Alameda County, including Castro Valley. ACFD has 29 fire station and 35 companies with over 400 personnel and 100 Reserve Firefighters serving a population of 394,000. The coverage area consists of approximately 508 square miles. ACFD Station #6 at 19780 Cull Canyon Road, Castro Valley, CA 94552, is the nearest station to the project site. This fire station houses an engine and a patrol unit and responds to all of the canyon areas and the easternmost areas in Castro Valley.[6]

[4] California Water Code Sections 13000 *et seq*.

[5] Alameda County Department of Environmental Health, 2021, CUPA Programs, https://deh.acgov.org/hazmat/cupa-programs.page?, accessed March 26, 2021.

[6] Alameda County Fire Department, 2021, General Information, https://fire.acgov.org/AboutUs/aboutus.page?, accessed March 26, 2021.

Alameda County Office of Emergency Services

The County of Tuolumne Office of Emergency Services (OES) provides preparedness before, and coordination direction during, large-scale emergencies and disasters. OES coordinates with partner agencies, special districts, and key private agencies in providing planning, response, recovery, and mitigation activities as a result of disaster related incidents.

The state's Office of Emergency Services coordinates overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from both natural and man-made disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts.[7]

Alameda County Municipal Code

Section 6.04.100, *Above-Ground Tanks,* of the Alameda County Municipal Code establishes provisions and requirements for above-ground stationary tanks.

Chapter 6.04.90, *Hazardous Materials General Provisions* establishes administrative procedures for the effective local implementation of hazardous material, hazardous waste, and regulated hazardous substances regulatory requirements, and to bring all hazardous material and hazardous waste regulatory authority of the Unified Program Agency and compliance requirements into one ordinance.

Alameda County Sheriff's Office of Homeland Security and Emergency Services

The Alameda County Sheriff's Office of Homeland Security and Emergency Services has adopted an Emergency Operations Plan (EOP), which identifies emergency response programs related to hazardous waste incidents. The EOP establishes policy direction for emergency planning, mitigation, response, and recovery activities within the county. The County Emergency Operations Center uses the Standardized Emergency Management System, as required by California Government Code Section 8607(a), for managing responses to multi-agency and multi-jurisdiction emergencies in California, including those related to hazardous materials.

Castro Valley General Plan

The Natural Hazards and Public Safety section of the Castro Valley General Plan includes several policies and implementation programs, listed in Table 4.7-1, that are aimed at improving public safety from hazards and hazardous materials.

[7] Alameda County, 2021, Office of Emergency Services, http://www.acgov.org/emergencysite/, accessed March 26, 2021.

TABLE 4.7-1 CASTRO VALLEY GENERAL PLAN GOALS, POLICIES, AND ACTIONS PERTAINING TO HAZARDS AND HAZARDOUS MATERIALS

Goal/Policy/ Action Number	Goal/Policy/Action Text
Goal 10.1-1	Protect lives, property, and the environment by working with Alameda County Fire Department to reduce fire hazards.
Policy 10.1-1	Wildland Fire Preparedness. Increase preparedness for and reduce impacts from wildland fires.
Action 10.1-10	Enforcement Districts for High Fire Hazard Areas. Consider establishing and funding an enforcement district for fire hazard areas and wildland, intermix and interface areas; and establish an inspection period to be conducted annually for properties located in these areas. Mail notices to the residents in these areas notifying them of the inspection period, listing the standards for vegetation management on their properties, and suggesting tips for compliance. Additional funding would be required, such as the formation of an assessment district or other means.
Action 10.1-13	Emergency Access Requirements for Hillside Areas. In hillside areas where street widths are substantially below the minimum 20-foot width standard required for emergency access, such as Upper Madison Avenue/ Common Road and Hillcrest Knolls, one or more of the following requirements should be imposed to ensure adequate emergency access: ▪ Sprinklers; ▪ Turnouts along the paved roadway; ▪ Additional on-site parking; ▪ Increased roadway width along the front of the property; or ▪ Parking Restrictions.
Goal 10.4-1	Minimize the risk of life and property from the production, use, storage, and transportation of hazardous materials and waste by complying with all applicable Federal, State, and local requirements.
Policy 10.4-1	Hazardous Materials Exposure Risks. Minimize risks of exposure to or contamination by hazardous materials by educating the public, establishing performance standards for uses that involve hazardous materials, and evaluating soil and groundwater contamination as part of development project review.
Action 10.4-1	Proper Use, Storage and Disposal of Hazardous Materials. Educate businesses and residents (for example through information on the County's website, etc.) about the proper use, storage, and disposal of hazardous materials, but also ways to reduce or eliminate the use of hazardous materials, including the use of non-toxic or less-toxic alternatives.
Action 10.4-2	Highly Flammable, Toxic and Water-Reactive Materials. Amend County zoning regulations and project review processes to ensure that uses involving the use, storage, or transport of highly flammable, toxic, and/or highly water-reactive materials are located at an adequate distance from other uses and where they will not be adversely affected by disasters such as major fires, floods, or earthquakes. Regulate these uses to minimize the risk of on-site or off-site personal injury and property damage.
Action 10.4-3	Review Process for Proposals Using Hazardous Materials. Coordinate with the Alameda County Department of Environmental Health, Hazardous Materials Division and other appropriate regulatory agencies during the review process of all proposals for the use of hazardous materials or those involving properties that may have toxic contamination such as petroleum hydrocarbons, asbestos, and lead.
Action 10.4-4	Soil and Groundwater Assessment. Require applicants of projects in areas of known hazardous materials occurrences such as petroleum hydrocarbon contamination, USTs, location of asbestos rocks and other such contamination to perform comprehensive soil and groundwater contamination assessments in accordance with regulatory agency testing standards, and if contamination exceeds regulatory action levels, require the project applicant to undertake remediation procedures prior to grading and development under the supervision of appropriate agencies such as Alameda County Department of Environmental Heath, Department of Toxic Substances Control, or Regional Water Quality Control Board.

Source: Castro Valley General Plan, 2012.

4.7.1.2 EXISTING CONDITIONS

This section describes existing conditions related to emergency response plans, emergency evacuation plans, and wildland fires associated with the proposed project.

Emergency Response Plan

A Draft Fire Safety & Emergency Response Plan was created for the project site that outlines prevention, training, signage and evacuation procedures.[8] Chapter 3, *Project Description*, of this Draft EIR lists the strategies in the Response Plan aimed to enhance safety procedures and emergency response at the project site.

Wildland Fire Hazard

CAL FIRE evaluates fire hazard severity risks according to areas of responsibility (i.e., federal, State, and local). According to CAL FIRE, the project site is not located within a very high fire hazard severity zone.[9] The project site is located within a high fire hazard severity zone in the State Responsibility Area. The nearest very high fire hazard severity zone is within a Local Responsibility Area 1.6 miles southwest of the project site.

4.7.2 STANDARDS OF SIGNIFICANCE

As discussed in the Initial Study for the proposed project (included in Appendix A, *Notice of Preparation*, of this Draft EIR), the proposed project would have no impact with regard to the following criteria:

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.

The proposed project would result in significant hazards and hazardous materials impacts if it would:

1. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

[8] The Mosaic Project, 2022, Draft Fire Safety & Emergency Response Plan, Prevention, Training, Signage, & Evacuation Procedures.

[9] Cal Fire, 2022, California Fire Hazard Severity Zone Viewer, https://egis.fire.ca.gov/FHSZ/, accessed April 21, 2022.

2. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.
3. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to hazards and hazardous materials.

4.7.3 IMPACT DISCUSSION

HAZ-1 The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The proposed project would result in a significant impact if it would involve physical improvements that would impede emergency response to the project site or the immediate vicinity, or if it would otherwise interfere with emergency evacuation plans.

The proposed project would be required to comply with the *Draft Fire Safety & Emergency Response Plan* by The Mosaic Project. Additionally, the proposed project would be required to comply with the provisions of the CFC and the CBC, which would ensure that building and life safety measures are incorporated into the proposed project and would facilitate implementation of emergency response plans. Future development plans would include fire and emergency access through all phases of construction and operation. During construction, the project would be required to comply with all applicable provisions of the CFC to ensure fire safety. The project plans have been developed to be consistent with requirements of Chapter 7A of the CBC including using ignition-resistant building material, fire retardant roofing material in addition to standard CBC requirements of fire department access, fire hydrants, and water supply for fire protection.

As discussed in Section 4.7.1.1, *Regulatory Framework*, Alameda County has prepared an EOP that identifies and allocates resources in response to emergencies—from preparation through recovery. The EOP identifies the County's emergency planning, organizational, and response policies and procedures and how they would be coordinated with emergency responses from other levels of government. The proposed project would not involve physical components that would interfere with the ability of the County and emergency response service providers to implement emergency response activities within the project site or vicinity.

In addition, the General Plan has strategies that would further ensure that transportation improvements would not conflict with emergency operations in the project area.

The proposed project would not alter any existing roadways. Emergency vehicle access to the project site would be provided via two driveways on Cull Canyon Road and a 20-foot-wide fire access lane extending through the site to the proposed cabin area of the project. The proposed project would not alter the existing area in a way that could result in emergency evacuation impairment, such as with adding a significant permanent population to the area or altering traffic routes. The proposed project would also adhere to fire protection-related regulations and emergency procedures applicable within Alameda

County and implement rigorous protocols for emergency response and emergency evacuation, as described in Chapter 4.15, *Wildfire*.

Compliance with applicable laws and regulations regarding emergency preparedness as well as General Plan policies would ensure that the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-2 The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Development of the project would comply with all Alameda County requirements including fire flows, on-site hydrants, and backflow assemblies. Project design and construction would comply with requirements for building materials and construction methods for new buildings in a fire hazard severity zone set forth in CBC Chapter 7A. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. The project would also comply with CFC Chapter 49, which sets forth requirements generally parallel to those in CBC Chapter 7A. Construction of the camping cabins would be compliant with CCR Title 25, Division 1, Chapter 2.2, Section 2327, *Camping Cabins*, including roof live load requirements, smoke alarms inside all sleeping rooms, and limits on the footprint area of each cabin.

The project would be required to comply with the CBC and CFC, which require, among other things, clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas and material requirements for new buildings within a FHSZ. Other applicable regulations include the California PRC, which requires and that internal combustion engines, like those used in construction, must be equipped with a spark arrester, which is a device used for removing and retaining carbon and other flammable particles from the exhaust flow for engines that use hydrocarbon fuels. These engines must be maintained in effective working order or be constructed, equipped, and maintained for the prevention of fire. The California PRC also requires that brush, flammable vegetation, or combustible growth be removed within 100 feet of buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials. More specifically, Subchapter 3, *Fire Hazard*, Section 1299.03, of Title 14, California Code of Regulations, requires two zones of defensible space to be maintained at all times around new structures in the SRA, with Zone 1 extending 30 feet from each structure and Zone 2 extending 100 feet from each structure.

Due to its location within a High FHSZ, all exterior building materials for the proposed project would be required to be constructed to comply with the most recent wildland-urban interface building code (Chapter 7A of the CBC), which requires ignition-resistant materials, non-combustible materials, non-impregnatable vents, and double-paned windows with one pane of tempered glass.

The proposed project would not alter any existing roadways. Emergency vehicle access to the project site would be provided via two driveways on Cull Canyon Road and a 20-foot-wide fire access lane extending

through the site to the proposed cabin area of the project. The proposed project would not alter the existing area in a way that could result in emergency evacuation impairment, such as with adding a significant permanent population to the area or altering traffic routes. The proposed project would also adhere to fire protection-related regulations and emergency procedures applicable within Alameda County and implement rigorous protocols for emergency response and emergency evacuation, as described in Chapter 4.15, *Wildfire*. Compliance with the above codes and regulations, would ensure that the proposed project would not result in a fire hazard or exacerbate the fire risk in the project area. Adherence to existing local, state, and federal laws would ensure that this impact remains less than significant.

Significance without Mitigation: Less than significant.

HAZ-3 The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to hazards and hazardous materials.

The area considered for cumulative impacts is Alameda County, which is the service area for the Alameda County Department of Environmental Health, the affected CUPA. Other development projects throughout the county would use, store, transport, and dispose of increased amounts of hazardous materials, and thus could pose substantial risks to the public and the environment. However, the use, storage, transport, and disposal of hazardous materials by other projects would conform with regulations of multiple agencies described in Section 4.7.1.1, *Regulatory Framework*.

Cumulative projects have the potential to interfere with an adopted emergency response plan or emergency evacuation plan; however, all cumulative development would be required to comply with the provisions of the local, State, and federal regulations for emergency response plans and emergency evacuation plans. Compliance with these regulations would ensure potential cumulative impacts would be less than significant.

All development would be required to comply with the provisions of the local and State regulations for wildland fires. Compliance with these regulations would reduce potential cumulative impacts to less than significant.

As discussed in impact discussions HAZ-1 and HAZ-2, compliance with regulatory requirements and the inclusion of project components that would reduce risks from hazards and hazardous materials from the proposed project to less than significant. Accordingly, the proposed project would not contribute to a cumulative increase in hazards and hazardous materials in Alameda County and the potential for cumulative impacts associated with hazards and hazardous materials would be less than significant.

Cumulative impacts would be *less than significant* after compliance with regulations, and project impacts would not be cumulatively considerable.

Significance without Mitigation: Less than significant.

4.8 HYDROLOGY AND WATER QUALITY

This chapter describes the existing hydrology and water quality of the project site and evaluates the potential environmental consequences of future development by adopting and implementing the proposed project. This chapter provides a summary of the relevant regulatory setting necessary to evaluate potential environmental impacts resulting from the proposed project, describes potential impacts, and discusses existing and proposed goals, policies, and implementation programs and zoning regulations that would avoid or reduce those potential impacts.

The information in this section is based in part on the following technical studies:

- *Geotechnical Engineering Investigation Report – The Mosaic Project,* completed by NV5 on September 16, 2019.
- *Basis of Design Report for The Mosaic Project - 17015 Cull Canyon Road Project Site*, completed by Northstar on November 2, 2020.

Complete copies of these reports are included in Appendix E and G of this Draft EIR, respectively.

4.8.1 ENVIRONMENTAL SETTING

4.8.1.1 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the United States Environmental Protection Agency (EPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the EPA to implement water-quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the US. California has an approved state NPDES program. The EPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB), which has nine regional boards.

Permits to dredge or fill waters of the United States are administered by the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. "Waters of the United States" are defined as territorial seas and traditional navigable waters, perennial and intermittent tributaries to those waters, lakes and ponds and impoundments of jurisdictional waters, and wetlands adjacent to jurisdictional waters. The regulatory branch of the USACE is responsible for implementing and enforcing Section 404 of the CWA and issuing permits. Any activity that discharges fill material and/or requires excavation in waters of the United States must obtain a Section 404 permit. Before issuing the permit, the USACE requires that an analysis be conducted to demonstrate that the proposed project is the least environmentally damaging

practicable alternative. Also, the USACE is required to comply with the National Environmental Protection Act (NEPA) before it may issue an individual Section 404 permit.

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with USACE Section 404 permits for dredge and fill discharges. In addition, an application for Individual Water Quality Certification and/or Waste Discharge Requirements (WDRs) must be submitted for any activity that would result in the placement of dredged or fill material in waters of the State that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California, the authority to either grant water quality certification or waive the requirement is delegated by the SWRCB to its nine Regional Water Quality Control Boards (RWQCBs).

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water-quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water-quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non- point sources. The intent of the 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality. In accordance with Section 303(d), RWQCBs identify impaired water bodies within their jurisdiction, and the pollutants or stressors responsible for impairing the water quality.

National Pollutant Discharge Elimination System

The NPDES permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4s). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring and other activities.

Under the NPDES Program, all facilities which discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for storm water discharges are also regulated under this program. In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs. The project site lies within the jurisdiction of San Francisco Bay RWQCB (Region 2) and is subject to the WDRs of the Municipal Regional Stormwater Permit (MRP) No. CAS612008 issued by the San Francisco Bay RWQCB (Order No. R2-2015-0049 as amended by Order No. R2-2019-0004). The MRP requires more than 70 municipalities, Counties, flood control districts, and water districts in the Bay Area to place conditions on certain development projects to incorporate site design measures, source controls, treatment measures, and on projects in hydromodification areas, flow duration controls.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water-quality control law for California. Under this Act, the SWRCB has ultimate control over state water rights and water-quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a Water Quality Control Plan, or Basin Plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water-quality conditions and problems. Pursuant to the Porter-Cologne Act, municipal stormwater discharges in unincorporated areas Alameda County are regulated under the MRP.

Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) for drinking water regulations, the California Department of Fish and Wildlife (CDFW), and the Office of Environmental Health and Hazard Assessment.

Sustainable Groundwater Management Act

In the midst of a major drought, California Governor Jerry Brown signed the Sustainable Groundwater Management Act of 2014 (SGMA). The act consists of three legislative bills, Senate Bill SB 1168 (Pavley), Assembly Bill AB 1739 (Dickinson), and Senate Bill SB 1319 (Pavley). The legislation provides a framework for long-term sustainable groundwater management across California. Under the roadmap laid out by the legislation, local and regional authorities in medium and high priority groundwater basins have formed Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local Groundwater Sustainability Plan (GSP).

The California Department of Water Resources (DWR) has developed regulations governing the content of Groundwater Sustainability Plans. Local stakeholders have until 2022 (in critically overdrafted basins until 2020) to develop, prepare, and begin implementation of Groundwater Sustainability Plans. GSAs will have until 2040 to achieve groundwater sustainability.[1]

Statewide General Construction Permit

The SWRCB has adopted a statewide Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014 DWQ and 2012-0006-DWQ) for stormwater discharges associated with construction activities. These regulations prohibit the discharge of stormwater from construction projects that include one acre or more of soil disturbance.

Construction activities subject to this permit include clearing, grading, and other disturbance to the ground, such as stockpiling or excavation, that results in soil disturbance of at least one acre of total land area. Individual developers are required to submit Permit Registration Documents (PRDs) to the SWRCB

[1] University of California, 2022. *Sustainable Groundwater Management Act*. http://groundwater.ucdavis.edu/SGMA/.

for coverage under the NPDES permit prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The NPDES Construction General Permit (CGP) requires all dischargers to (1) develop and implement a SWPPP, which specifies best management practices (BMPs) to be used during construction of the project; (2) eliminate or reduce non-storm water discharge to stormwater conveyance systems; and (3) develop and implement a monitoring program of all specified BMPs. The two major objectives of the SWPPP are to (1) help identify the sources of sediment and other pollutants that affect the water quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-storm water discharges.

Applicants must also demonstrate conformance with applicable BMPs and prepare a SWPPP, containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment-monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites also require implementation of a Rain Event Action Plan (REAP).

Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality

The Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (Order No. 2003-0003-DWQ) applies to low-volume discharges with minimal pollutant concentrations such as well water discharges and small temporary dewatering projects. This permit regulates discharges to land and would apply if dewatering discharge is piped to an infiltration basin during construction. The WDR requires dischargers to comply with all applicable Basin Plan provisions, including any prohibitions and water quality objectives governing the discharge.[2]

State Water Resources Control Board General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems

Water Code section 13260(a) requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, that could affect the quality of the waters of the state, file a Report of Waste Discharge (ROWD) to obtain coverage under the WDRs or a waiver of WDRs. Discharges to land from small domestic wastewater treatment systems have certain common characteristics, such as similar constituents, concentrations of constituents, disposal techniques, flow

[2] State Water Resources Control Board, 2003. *Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (General WDRs).*
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf.

ranges, and they require the same or similar treatment standards. These types of discharges are appropriately regulated under a General Waste Discharge Requirements Order. State Water Board Water Quality Order 97-10-DWQ (WQO 97-10DWQ) is a 1997 General Order addressing Small Domestic Systems. Only Small Domestic Systems, with a monthly average flow rate of 100,000 gallons per day (gpd) or less, that discharge to land are eligible for coverage under this General Order.[3]

Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems

On June 19, 2012, the State Water Board adopted Resolution No. 2012-0032, adopting the Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). The purpose of the policy is to allow the continued use of OWTS, while protecting water quality and public health. This policy recognizes that responsible local agencies can provide the most effective means to manage OWTS on a routine basis. Therefore, as an important element, it is the intent of the policy to efficiently utilize and improve upon existing local programs through coordination between the State and local agencies. To accomplish this purpose, the policy establishes a statewide, risk based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from OWTS. In particular, the policy requires actions for water bodies specifically identified as part the Policy where OWTS contribute to water quality degradation that adversely affect beneficial uses.[4]

California Water Code Section 13751

In 1949, the California Legislature concluded that collecting information on newly constructed, modified or destroyed wells would be valuable in the event of underground pollution, and would also provide geologic information to better manage California's groundwater resources. Section 13751 of the Water Code requires Well Completion Reports (WCR) forms to be filed with the Department of Water Resources (DWR) within 60 days from the date that construction, alteration, abandonment, or destruction of a well is completed. Completed WCR forms are sent to the DWR Region Office whose boundaries include the area where the well is located.[5]

California Department of Water Resources Well Standards

DWR Bulletin 74 sets the minimum standards for water, monitoring, cathodic protection, and geothermal heat exchange wells, with the purpose of protecting California's groundwater quality. The process, from standards through enforcement, is detailed in Water Code Sections 13800- 13806.

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[3] State Water Resources Water Quality Control Board, September 23, 2014, *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems*, https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0153_dwq.pdf.

[4] State Water Resources Control Board, June 19, 2012, *Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems*, https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf.

[5] Department of Water Resource, November, 1999. *How to Fill Out a Well Completion Report*, https://static1.squarespace.com/static/57573edf37013b15f0435124/t/57e2c7e103596e4c714a5fc9/1474480098590/How+to+Fill+Out+a+Well+Completion+Report.pdf.

State Water Resources Control Board, Division of Drinking Water

The SWRCB, Division of Drinking Water (DDW), is responsible for issuing water supply permits under the Safe Drinking Water Act. A project requires a new or amended water supply permit if it includes changes to a water supply source, storage, or treatment. A public water system is defined as a system that provides water for human consumption that has 15 or more service connections or regularly serves at least 25 individuals daily for at least 60 days of the year. The proposed project meets the criterion as a new public water system and would require permits and approval from the DDW prior to the start of construction. The contact would be the San Francisco District Office of the SWRCB DDW.

Title 22 of the California Code of Regulations

Title 22 of California's Code of Regulations refers to state guidelines for how treated and recycled water is discharged and used. The State Water Board governs the permitting of recycled water projects, develops uniform water recycling criteria and reviews and approves Title 22 engineering reports for recycled water use.

California Plumbing Code (Part 5, Title 24, California Code of Regulation)

The latest version of the California Plumbing Code was issued in 2019 and is updated on a three-year cycle. It includes new standards for plumbing fixtures, new provisions for storm drain systems, and design criteria for potable and recycled water systems. California's greywater code is found in Chapter 15 of the California Plumbing Code. This chapter governs the installation of greywater systems including setbacks required setback from water wells, buildings, and waterways.

California Health and Safety Code

A portion of the California Health and Safety Code is dedicated to water issues, including testing and maintenance of backflow prevention devices and installation of greywater systems.

Regional Regulations

Municipal Regional Stormwater NPDES Permit

Municipal stormwater discharge in the unincorporated areas of Alameda County is subject to the WDRs of the MRP. Provision C.3 of the MRP requirements applies to all "Regulated Projects," which includes new development or redevelopment projects that create or replace 10,000 square feet of impervious surfaces and specific land use projects that create or replace 5,000 square feet of impervious surfaces (i.e., auto service facilities, retail gasoline outlets, restaurants, and/or uncovered surface parking), and that fall under planning and building authority of a Permittee. Provision C.3 of the MRP also mandates that Regulated Projects must: 1) incorporate site design, source control, and stormwater treatment measures into the project design; 2) minimize the discharge of pollutants in stormwater runoff and non-stormwater discharge; and 3) prevent increases in runoff flows as compared to pre-development conditions. Low-impact development (LID) methods are the primary mechanisms for implementing such controls.

New development projects must treat 100 percent of the calculated runoff (based on the sizing criteria described in the C.3 provisions of the MRP) with LID treatment measures that include harvesting and reuse, infiltration, evapotranspiration, or biotreatment/bioretention. In addition, projects located within the mapped area susceptible to hydromodification and that would create one acre or more of impervious surfaces must also comply with hydromodification management (HM) requirements. The HM measures require that LID facilities be sized so that post-project discharge rates and durations match pre-project 10-year peak flows.

To comply with Provision C.3 of the MRP, a project applicant would be required to submit a C.6/C.3 Checklist to be reviewed and approved by the County's Public Works Department. The checklist must be prepared under the direction of and certified by a licensed and qualified professional, which includes civil engineers, architects, or landscape architects.

San Francisco Bay Regional Water Quality Control Board Basin Plan

The project site is within the jurisdiction of the San Francisco Bay RWQCB (Region 2). The RWQCB's jurisdiction includes all the San Francisco Bay's segments extending to the mouth of the Sacramento-San Joaquin Delta. The San Francisco Bay RWQCB addresses region-wide water quality issues through the creation of the Basin Plan. The Basin Plan was adopted in 1995 and most recently amended in 2019. This Basin Plan designates beneficial uses of the State waters within Region 2, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.[6]

Local Regulations

Alameda County Flood Control & Water Conservation District

The Alameda County Flood Control & Water Conservation District (District) provides flood protection for Alameda County residents and businesses. The District plans, designs, constructs, and maintains flood control projects such as natural creeks, channels, levees, pump stations, dams, and reservoirs. In 2018, the District updated the *Hydrology & Hydraulics Manual* which serves as a guide for minimum design requirements and provides a hydrologic model for all of Alameda County.[7]

The District is also charged with administering the Alameda Countywide Clean Water Program for the 14 cities of Alameda County, the Alameda County Flood Control District, unincorporated areas of Alameda County, and the Zone 7 Water Agency. The Alameda County Clean Water Program's C.3 Stormwater Technical Guidance is meant to help developers, builders, and project sponsors include post-construction stormwater controls in their projects, in order to meet local municipal requirements and State requirements in the MRP. The District provides administrative and contracting services for the Alameda

[6] San Francisco Bay RWQCB, May 4, 2017. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*, https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf, accessed June 7, 2022.

[7] Alameda County, Flood Control & Water Conservation District, 2018, *Hydrology & Hydraulics Manual*, https://acfloodcontrol.org/the-work-we-do/the-work-we-do-hydrology-manual/, accessed June 7, 2022.

Countywide Clean Water Program to help comply with federal and state requirements to improve water quality and better manage urban stormwater and runoff.

Alameda County Department of Environmental Health Department

The Alameda County Department of Environmental Health (ACDEH), Onsite Wastewater Treatment Systems Program, coordinates with the San Francisco RWQCB to permit OWTS for new and existing development projects in Alameda County. The Alameda County OWTS Regulations and Amendments are found in the Municipal Code, Chapter 15.18. The regulations are designed to provide for the safe and sanitary treatment and disposal of private sewage and provide minimum standards for the construction and operation of OTWS. The regulations and requirements can be found in the following documents:

- Alameda County Department of Environmental Health, 2018. *Local Agency Management Program for Onsite Wastewater Treatment Systems*. Dated June 5, 2018.
- Alameda County Municipal Code. Chapter 15.18, *Onsite Wastewater Treatment Systems Ordinance*.
- Alameda County Department of Environmental Health, 2018. *Onsite Wastewater Treatment Systems Manual*. Dated June 2018.

Alameda County Municipal Code[8]

Chapter 6.88 – Water Wells: The purpose of this chapter is to provide for the construction, repair, reconstruction, and destruction of wells to the end that the groundwater found wholly or partially with the county will not be polluted or contaminated and that water obtained from water wells will be suitable for the beneficial uses intended and shall not jeopardize the health, safety, or welfare of the people of the county. No person shall, within the area subject to the provisions of this chapter, construct, repair, reconstruct, destroy, alter, or abandon any well unless a valid permit has been obtained from the administering agency as provided in this chapter.

Chapter 13.12 – Watercourse Protection (Watercourse Protection Ordinance): This chapter is enacted to safeguard and preserve watercourses, protect lives and property, prevent damage due to flooding, protect drainage facilities, control erosion and sedimentation, restrict discharge of polluted materials, and enhance recreational and beneficial uses of watercourses. The chapter requires a permit from the director of public works for any activity that requires constructing, altering, enlarging, or changing any structure in a watercourse.

Chapter 13.08 – Stormwater Management and Discharge Control: The purpose and intent of this chapter is to reduce or eliminate the pollution of receiving waters, including creeks and the San Francisco Bay, and to protect and enhance the water quality in county water bodies, including watercourses, wetlands, creeks, and flood control facilities, in a manner pursuant to and consistent with the CWA, the State Porter/Cologne Act, and the county NPDES permit, by:

[8] Alameda County, 2022, *Code of Ordinances*, https://library.municode.com/ca/alameda_county/codes/code_of_ordinances, accessed June 5, 2022.

- Reducing and eliminating illegal or illicit non-storm discharges to the waters of the U.S., the county storm drain system, the creeks, and the bay from construction activities, county maintenance operations, industrial and commercial activities, new development, redevelopment, and other activities, through inspection, monitoring, and complaint response.
- Controlling the discharge to the county storm drain system, the creeks, and the bay from spills, dumping or disposal of materials other than stormwater or other legal discharges.
- Reducing pollutants in stormwater discharges to the maximum extent practicable.
- Regulating the design and construction of permanent post-development stormwater quality measures and controls, including the application of site design, source control, stormwater treatment, and hydromodification management, through the provisions of this chapter and of other county ordinances, rules, regulations, and procedures.
- Inspecting, monitoring, and regulating pollution prevention measures during construction.
- Establishing legal authority to perform all reviewing, inspection, surveillance, and monitoring activities necessary to ensure compliance with this chapter.

Chapter 15.8 – Onsite Wastewater Treatment Systems: The chapter provides for the safe and sanitary treatment and disposal of wastewater from structures and buildings not served by public sewer systems as allowed by the California State Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. The purpose is also to establish standards for the approval, installation, and operation of OWTS and onsite wastewater containment units (OWCU) within Alameda County, consistent with the State Policy and consistent with the appropriate California RWQCB standards and basin plans. The standards are adopted to prevent the creation of health hazards and nuisance conditions and to protect surface and groundwater quality. The OWTS and OWCU that this chapter authorizes shall safely treat and dispose of wastewater in order to prevent environmental degradation including pollution of surface water and groundwater and to protect public health, safety and welfare to the greatest extent possible.

Chapter 15.36 – Grading Erosion and Sediment Control: The purpose of this chapter is to regulate grading work on private property within the unincorporated area of the county in order to protect creeks, watercourses, and other drainage facilities from illicit discharges of surface runoff generated in or draining through the permitted work area. This chapter also ensures that the construction and eventual use of a graded site is in accordance with the stormwater management and discharge ordinance (Chapter 13.08 of the ACMC). This chapter mandates that all applicants that require an SWPPP also require an erosion and sedimentation control plan.

Alameda County Onsite Wastewater Treatment System Manual

The Onsite Wastewater Treatment Systems Manual provides the procedural and technical details for implementation of the provisions of the Alameda County Onsite Wastewater Treatment Systems Ordinance, codified in Chapter 15.18 of the ACMC. The provisions within the manual are designed to protect public health, groundwater, and surface water bodies from contamination, and provide safely operating OWTS through proper design, siting, installation, maintenance, and monitoring. The Alameda County Department of Environmental Health is the agency responsible for the enforcement of the ordinance and provisions in this manual. While this department administers the local program, the RWQCB retains the authority to issue WDRs for any discharge of wastewater that may affect water quality.

The requirements in the manual apply to OWTS with flows less than 10,000 gpd that accept and treat domestic-strength wastewater or high-strength wastewater from commercial food service buildings with a biochemical oxygen demand (BOD) less than or equal to nine hundred (900) milligrams per liter (mg/L).

4.8.1.2 EXISTING CONDITIONS

As shown on Figure 3-3, *Existing Site Plan,* the project site contains developed and heavily vegetated areas. On the eastern portion of the site, Cull Creek runs north to south through the property, generally parallel and west of Cull Canyon Road. A tributary to Cull Creek is channeled through an existing 24-inch culvert that runs west to east along the southern boundary of the project site. Existing structures on the property include a 1,200 square foot mobile home, a 970 square foot barn, and a paved parking area located adjacent to Cull Canyon Road. An existing 14-foot-wide concrete bridge spans Cull Creek and leads to a developed area that includes a large 7,500 square foot garage building, a paved patio, and driveways with drainage swales. The project site currently has five groundwater wells dispersed across the property and two 5,000-gallon water tanks west of the 7,500-square-foot garage building. There is also a leach field north of the mobile home, and a septic system east of the garage building. The remainder of the site consists of bay and oak woodlands on an east-facing slope.

The elevation of the property ranges from 500 to 900 feet above mean sea level, and the property slopes gradually down to the east towards Cull Creek. An existing internal concrete roadway is located on the project site, leading from the entrance of the property, over the bridge, and to the existing garage building. The internal roadway meanders at a slight upward slope after the bridge until it reaches the concrete building. Behind the concrete building, the property begins a sharp inclined slope estimated at 20 to 30 percent.

Regional Drainage

The San Lorenzo Creek Watershed covers an area of 48 square miles and is one of the largest watersheds draining to the eastern shore of San Francisco Bay. The watershed begins in the East Bay hills at the Dublin Grade, includes the unincorporated communities of San Lorenzo, Ashland, Cherryland, Fairview, and Castro Valley, and portions of San Leandro and Hayward. San Lorenzo Creek flows generally west, entering central San Francisco Bay near Roberts Landing, west of San Lorenzo. The lower and middle watershed areas are highly urbanized, and the natural drainage has been greatly altered. The upper watershed, including the subwatersheds of Cull Creek, Crow Creek, and Palomares Creek, is less urbanized and includes most of the 105 miles of open creek that exist within the greater watershed. The watershed also includes two lakes that were created in the early 1960s with the construction of Cull Creek Dam and Don Castro Dam.[9]

Cull Creek runs north to south through the property, generally parallel and west of Cull Canyon Road. The Alameda County Flood Control and Water Conservation District (ACFCWCD) built Cull Canyon Dam and Reservoir in 1963 for recreational and flood control purposes. ACFCWCD recently addressed seismic

[9] Alameda County Flood Control & Water Conservation District, 2022. *San Lorenzo Creek Watershed.* https://acfloodcontrol.org/the-work-we-do/resources/san-lorenzo-creek-watershed/.

instability at the dam while restoring Cull Creek to its natural condition.[10] The dam and reservoir are located approximately 2.8 miles north and downstream of the project site.

Stormwater flows down from Castro Valley and the Hayward hills to storm drains, channels, and pipelines leading to San Lorenzo Creek and on to San Francisco Bay. Within the Alameda County Public Works Agency, the ACFCWCD owns and manages most storm drains in Castro Valley, located in Flood Control Zone 2. [11] Within Zone 2 there are 55 miles of natural creek, four miles of earth channel, 11 miles of concrete channel, two miles of improved channel, 49 miles of underground pipe, and two pump stations.[12]

Local Drainage

The existing property drains toward Cull Creek which is an unlined natural channel. Stormwater runoff from Cull Creek ultimately flows into the San Lorenzo Creek, which flows generally in a westerly direction until it discharges into San Francisco Bay. The existing storm drain system on the site consists of valley gutters and drainage swales. A tributary to Cull Creek is channeled through a 24-inch culvert that runs west to east on the southern edge of the project site.

Surface Water Quality

The receiving water for the project site is Cull Creek, which is not listed on the Section 303(d) List of Water Quality Limited Segments.[13] Flow from Cull Creek eventually discharges into San Lorenzo Creek and ultimately empties into San Francisco Bay.

Groundwater

The project site is not in any designated groundwater basin and therefore is not under the purview of a GSA or governed by a GSP.[14] Based on well completion reports for wells located on the project site and within approximately 2 miles of the site, the approximate historically high groundwater levels are 30 to 40 feet below ground surface and located within fractured rock. Perched groundwater, or a shallow local groundwater table, could occur in wet weather due to near-surface cohesive soils and relatively shallow depths to sedimentary rock.[15]

[10]Alameda County Flood Control & Water Conservation District, 2021. *The Work We Do, Environmental Restoration Projects*, https://acfloodcontrol.org/the-work-we-do/the-work-we-do-environmental-restoration/.

[11] Alameda County Community Development Agency, March 2012. *Castro Valley General Plan Chapter 9 -Public Services and Utilities*, https://www.acgov.org/cda/planning/generalplans/documents/Chapter-9-Public-Services-and-Utilities.pdf.

[12] Alameda County Flood Control & Water Conservation District, 2022. *Zone 2.* https://acfloodcontrol.org/get-involved/get-involved-neighborhood-zones/get-involved-neighborhood-zones-zone-2/.

[13] State Water Resources Control Board, 2021, *Impaired Water Bodies*, https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml.

[14] California Department of Water Resources. *SGMA Data Viewer*. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels.

[15] NV5, September 16, 2019, *Geotechnical Engineering Investigation Report – The Mosaic Project.*

Flooding Hazards

A review of the Federal Emergency Management Agency (FEMA) floodplain maps indicate that the project site is not in a flood hazard area.[16] Additionally, the project site is not within a dam inundation area.[17]

Tsunamis are large ocean waves caused by underwater seismic activity. When tsunamis hit the coast, they can cause considerable damage to property and put the public at risk. The project site is not within a tsunami hazard zone.[18]

A seiche is a surface wave created in an enclosed or partially enclosed body of water, which can be compared to the back-and-forth sloshing in a bathtub. Seiches usually occur because of earthquake activity. The absence of any large bodies of water in the vicinity of the project site precludes the possibility of damage from seiches.

4.8.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in significant hydrology and water quality impacts if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.
4. In a flood hazard, tsunami, or seiche zone, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
6. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to hydrology and water quality.

[16] Federal Emergency Management Agency, August 3, 2009. FIRM Map 06001C0285G. https://msc.fema.gov/portal/search?AddressQuery=17015%20Cull%20Canyon%20Rd%2C%20Castro%20Valley%2C%20CA%2094552#searchresultsanchor.

[17] Department of Water Resources Division of Safety of Dam, 2020. *California Dam Breach Inundation Maps.* https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2.

[18] California Department of Conservation, 2015. *CGS Information Warehouse: Tsunami Hazard Area Map.* https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps.

4.8.3 IMPACT DISCUSSION

HYD-1 The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

The proposed project includes demolishing the existing 7,500 square foot garage, potentially realigning the 24-inch culvert on the southern edge of the project site, improving trails and miscellaneous dirt or gravel roads, and abandoning three of the five water wells on site. The proposed project also includes the construction of an outdoor recreation facility on the site. The proposed project would develop twelve 400 square foot camping cabins, a two story 40-foot high, 8,500-square foot central meeting and dining hall, a 1,025-square foot restroom/shower building, and a two-story 2,600-square foot dwelling. A 1,200-square foot caretakers' unit would remain from existing conditions. Proposed development on the site also consists of an on-site wastewater treatment and disposal system, proposed greywater systems, rainwater harvesting, and stormwater BMPs such as bioretention areas, pervious paving, and vegetative strips (see Figure 3-4, *Proposed Project Site Plan*).

Construction

Clearing, grading, demolition, excavation, and construction activities associated with the proposed project have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints may present a risk to surface water quality. The refueling and parking of construction vehicles and other equipment on-site during construction may also result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, development of the project would require compliance with the CGP which requires the preparation and implementation of a SWPPP. A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. The SWRCB mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide CGP. The CGP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a NOI, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is always required to maintain a copy of the SWPPP at the site and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB, which includes the preparation of a SWPPP.

Categories of potential BMPs that would be implemented for this project are described in Table 4.8-1, *Construction BMPs*.

TABLE 4.8-1 CONSTRUCTION BMPS

Category	Purpose	Examples
Erosion Controls	▪ Protects the soil surface and prevents soil particles from being detached by rainfall, flowing water, or wind.	Scheduling, preserving existing conditions, mulch, soil binders, geotextiles, mats, hydroseeding, earth dikes, swales, velocity dissipating devices, slope drains, streambank stabilization, compost blankets, soil preparation/roughening, and non-vegetative stabilization.
Sediment Controls	▪ Traps soil particles after they have been detached and moved by rain, flowing water, or wind.	Barriers such as silt fences, straw bales, sandbags, fiber rolls, and gravel bag berms; sediment basins; sediment traps; check dams; storm drain inlet protection; compost socks and berms; biofilter bags; manufactured linear sediment controls; and cleaning measures such as street sweeping and vacuuming
Wind Erosion Controls	▪ Minimizes dust nuisances.	Applying water or other dust palliatives to prevent or minimize dust nuisance, reducing soil-moving activities during high winds, and installing erosion control BMPs for temporary wind control.
Tracking Controls	▪ Prevents or reduces the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits and entrance/outlet tire wash.
Non-Storm Water Management Controls	▪ Prevents pollution by limiting or reducing potential pollutants at their source or eliminating off-site discharge.	
Prohibits illicit connections or discharges.	▪ Water conservation practices, BMPs specifying methods for: dewatering operations; temporary stream crossings; clear water diversions; pile driving operations; temporary batch plants; demolition adjacent to water; materials over water; potable water and irrigation; paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.	

Source: California Stormwater Quality Association (CASQA) 2019. *Stormwater Best Management Practices Handbook: Construction.*

In addition, the County requires that all applicants that require a SWPPP also require an erosion and sedimentation control plan. No grading shall be permitted until an erosion and sedimentation control plan has been reviewed and approved by the County. Additionally, grading work associated with the construction of the on-site wastewater disposal system would be reviewed and approved by the County Department of Environmental Health prior to the issuance of a grading permit.

Dewatering

Based on a review of well completion reports, the approximate depth to groundwater is 30 to 40 feet below ground surface and a permanent groundwater table would not be encountered at the depths proposed by site excavations. However, perched groundwater could be encountered depending on the time of year construction takes place. Therefore, the earthwork contractor should be prepared to dewater the utility trench excavations and any other excavations if perched groundwater is encountered during

winter or spring grading.[19] If dewatering is necessary, the Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (Order No. 2003-0003-DWQ) shall be implemented.

On-Site Wells

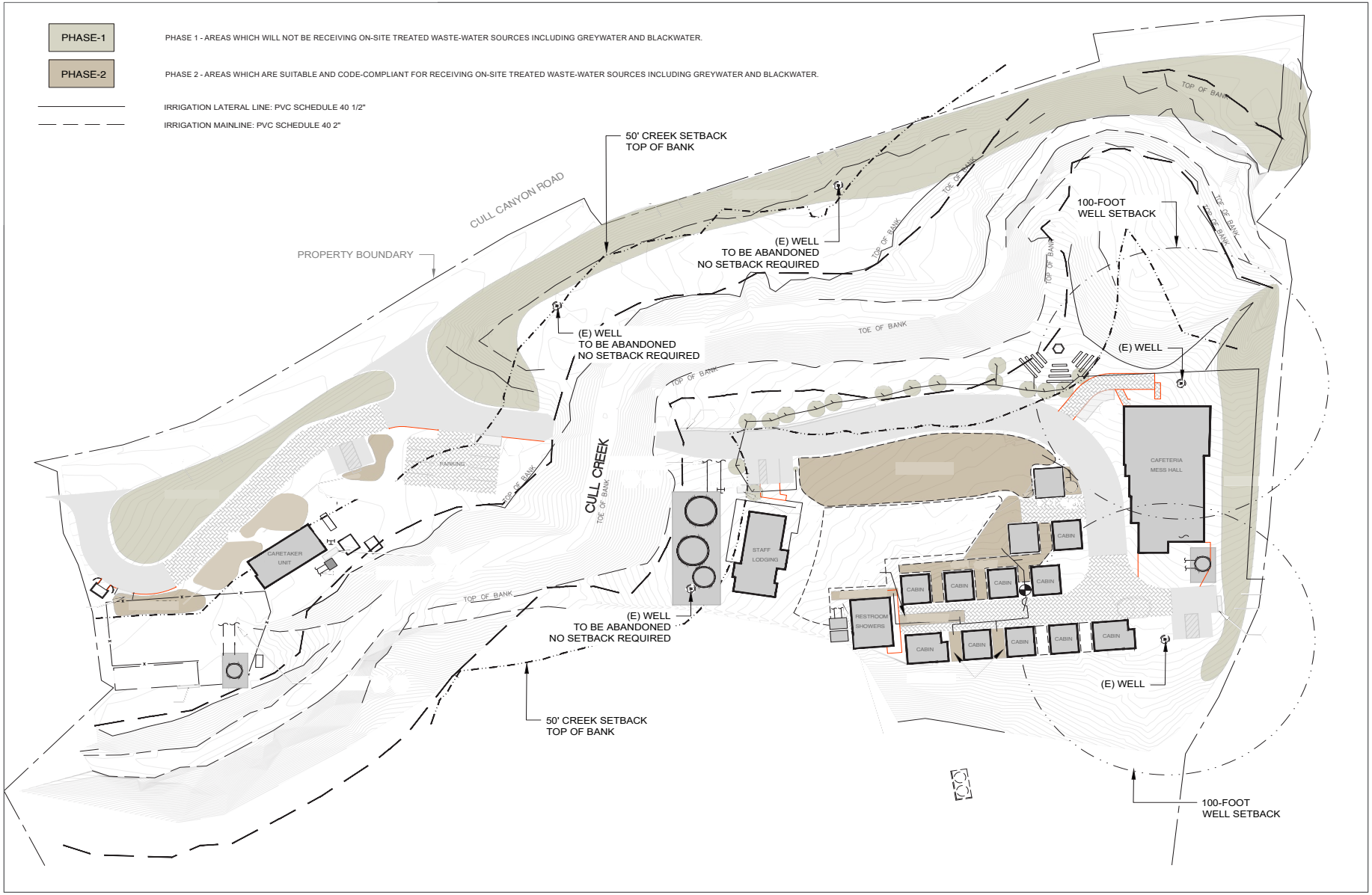
As shown on Figure 4.8-1, *Proposed Planting Plan*, three of the existing onsite wells are to be abandoned. These wells would be abandoned in accordance with the requirements of the California DWR well standards and Chapter 6.88 of the ACMC. The project site is within the jurisdiction of the Alameda County Public Works Agency (ACPWA), and the project applicant must apply for and receive a permit from ACPWA before decommissioning the water wells. A copy of the "Report of Completion" (Water Well Driller's Report, Department of Water Resources) must be submitted to the ACPWA within 30 days of the destruction of any well. WCR forms would also be filed with DWR.

Culvert Realignment

As shown in Figure 3-3, *Existing Site Plan*, a 24-inch culvert runs west to east on the southern edge of the project site. If conflict is found between the culvert and the location of any proposed buildings, the proposed project would re-route the culvert between its entry and exit points around the southern edge of the site to eliminate conflicts without affecting site drainage (see Figure 3-4, *Proposed Project Site Plan*). The culvert is within a State regulated tributary to Cull Creek. If re-routing of the culvert is necessary, the project would be required to obtain a permit under Section 401 of the CWA prior to construction. In addition, all proposed construction work on the culvert would proceed in compliance with the requirements of the GCP and Chapters 13.12 and 15.36 of the ACMC.

Submittal of the PRDs, implementation of the SWPPP and grading and erosion provisions, and adherence to dewatering, well decommissioning, and watercourse protection permit requirements throughout the construction phase of the proposed project will address anticipated and expected pollutants of concern as a result of construction activities. The proposed project would comply with all applicable water quality standards and waste discharge requirements. As a result, water quality impacts associated with construction activities would be *less than significant*.

[19] NV5, September 16, 2019, Geotechnical Engineering Investigation Report – The Mosaic Project.



Source: Watershed Progressive, 2020.

0 100
Scale (Feet)

Figure 4.8-1
Proposed Planting Plan

Operations

Once the proposed project has been constructed, urban runoff could include a variety of contaminants that could impact water quality. Runoff from buildings and parking lots typically contain oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

Water quality in stormwater runoff is regulated locally by the Alameda County Clean Water Program, which include the C.3 provisions set by the San Francisco Bay RWQCB. The NPDES includes requirements for incorporating post-construction stormwater control/LID measures into new development and redevelopment projects. All new and redevelopment projects must incorporate site design, source control, and treatment measures to the maximum extent practicable and to use stormwater control measures that are technically feasible and not cost prohibitive. Also, each project regulated under the C.3 provisions must treat 100 percent of the amount of runoff for the project's drainage area with on-site LID treatment measures. Stormwater treatment requirements must be met by using evapotranspiration, infiltration, rainwater harvesting, and reuse. Where this is infeasible, landscape-based biotreatment is allowed.

The proposed project would be required to comply with the C.3 provisions of the MS4 permit and Chapter 13.08 of the ACMC which regulates the design of permanent post-development stormwater quality measures and controls, including the application of site design, source control, and stormwater treatment measures.

The preliminary design of stormwater features is shown in Figure 4.8-2, *Proposed Storm Drain Layout (North),* and Figure 4.8-3, *Proposed Stormdrain Layout (South)*. The project site is divided into ten drainage management areas (DMAs) with a corresponding bioretention facility for each DMA. Each bioretention area has been designed to retain stormwater, based on the sizing criterion of 4 percent of the DMA impervious area. The project also proposes pervious pavement for portions of the roadway and parking areas and vegetative strips. The proposed project's site design aims to greatly minimize the proposed project's water footprint by utilizing innovative water management solutions to minimize the impact and reliance on public water and sewer utilities. To meet these goals rainwater harvesting, and climate appropriate, water efficient landscaping is considered in the site design. Rainwater harvesting and water efficient landscaping both reduce the impacts of stormwater runoff on surface or groundwater quality.

The project applicant has submitted a *Stormwater Checklist for C.6/C.3 Compliance* to the ACPWA for approval. The preliminary design of stormwater controls must be submitted simultaneously with the preliminary site plan and landscaping plan. The stormwater plan shall include: 1) the proposed finish grade, 2) storm drain system including inlets, pipes, catch basins, overland flows, outlets, and water flow direction, 3) permanent stormwater treatment system, including all design details, 4) design details of all

source control and site design measures, 5) drainage map indicating flow direction, and 6) sizing calculations used.[20]

Once the planning permit is issued, the stormwater information must be incorporated into the building permit application submittal. An Operation and Maintenance (O&M) Plan would also be required for submittal during the building permit application process. A template for the annual O&M reporting for the stormwater treatment measures must also be submitted to the County and the project must comply with the State's trash amendments, which require the installation of trash and debris capture devices on all storm drain inlets or catch basins.

Additionally, the County mandates setbacks from watercourses in accordance with the setback criteria of Chapter 13.12 of the ACMC. The purpose of setbacks is to safeguard watercourses by preventing activities that would contribute significantly to flooding, erosion or sedimentation, would inhibit access for watercourse maintenance, or would destroy riparian areas or inhibit their restoration. The required setback, per Chapter 13.12, is noted on Figure 3-4 as "BSL Setback 2:1 Slope".[21] As shown in the figure there are no proposed buildings within the setback area.

Wastewater Treatment Plant

The proposed project includes the installation of an OWTS with the potential use of greywater diversion when high precipitation conditions are not present. The OWTS would provide primary and secondary treatment which would require, at a minimum, grease interceptor tanks, septic tanks, secondary treatment equipment, and surge/dosing tanks with pumps and controls to move wastewater evenly and consistently to dispersal zones on the site. The dispersal concept includes applying secondary treated effluent to pressure dosed chambered trenches in an area to the east of the proposed staff lodging house (as shown in Figure 4.8-4, *Proposed Septic Layout*). This area is set back 100 feet from Cull Creek's top of bank and 150 feet from the potable water wells to remain on the site. The OWTS would be designed for a 3,525 gpd flow.

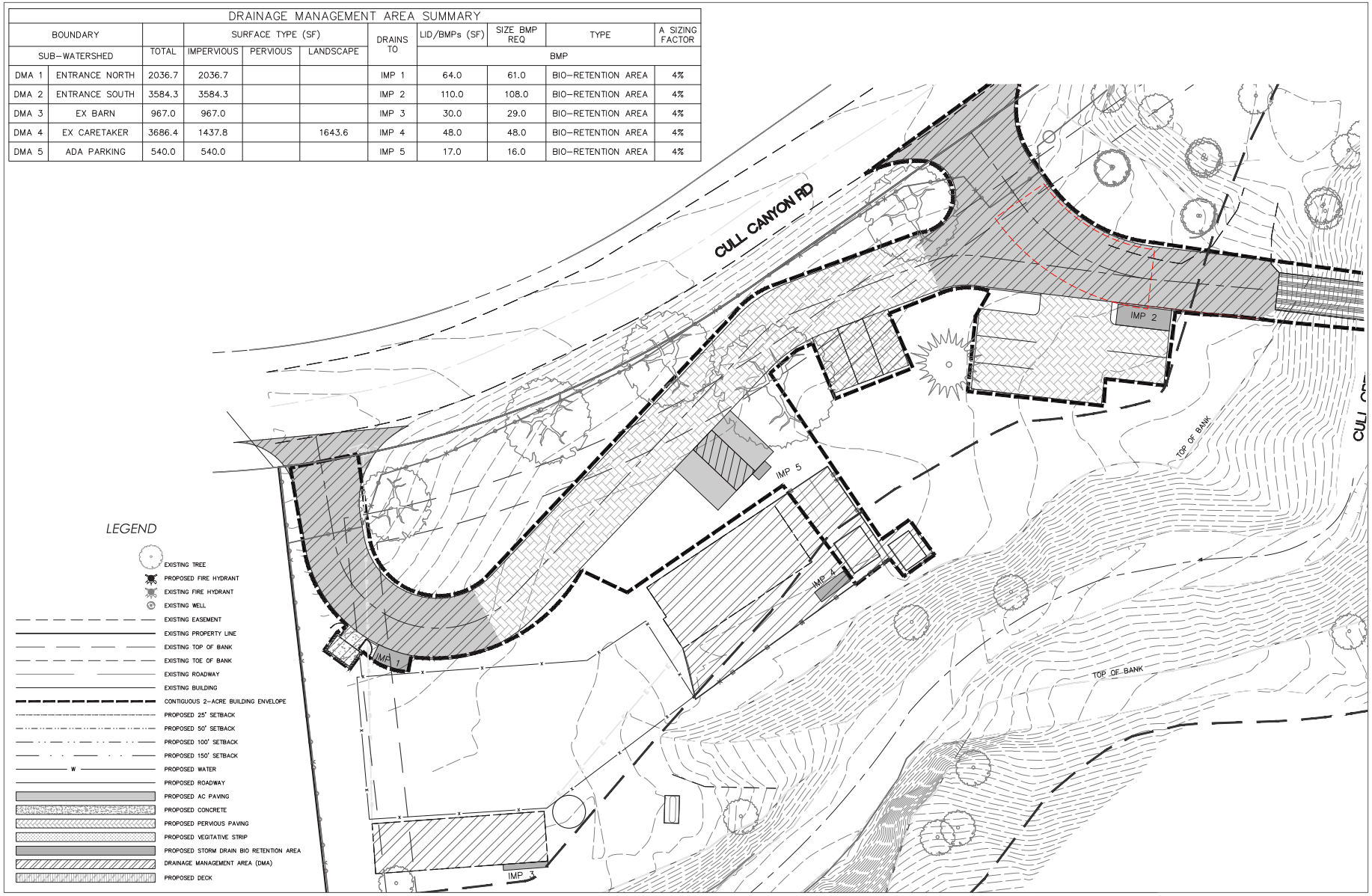
Since the OWTS has pressure dosed chambered trenches for wastewater disposal, groundwater mounding may occur, and a groundwater mounding analysis was performed. Groundwater mounding is a rise in the groundwater table, that may occur beneath or downgradient of an OWTS, because of concentrated wastewater loading in a limited area. The analysis showed that groundwater could mound beneath the wastewater dispersal area and come within 10 feet of the bottom of the proposed dispersal trenches. However, this is below the 5-foot separation required by the Alameda County OWTS Manual. The proposed OWTS was also designed to meet the nitrogen removal requirements per the manual so as not to affect groundwater nitrate concentrations.

[20] Alameda County Public Works Agency, 2022. Stormwater Quality Control Requirements for Unincorporated Alameda County, http://co.alameda.ca.us/pwa/documents/brochure_9_05_final.pdf.

[21] The Watercourse Ordinance established a setback of 20 feet from the top of bank assuming that the 100-yr. flood elevation is contacted within the banks of a watercourse. However, for existing bank slopes at 2 horizontal to 1 vertical, or steeper, the setback is established by drawing a line at a 2 horizontal to 1 vertical slope from the toe of the existing bank to a point where it intercepts the ground surface and then adding 20 feet.

DRAINAGE MANAGEMENT AREA SUMMARY

BOUNDARY			SURFACE TYPE (SF)			DRAINS TO	LID/BMPs (SF)	SIZE BMP REQ	TYPE	A SIZING FACTOR
SUB-WATERSHED		TOTAL	IMPERVIOUS	PERVIOUS	LANDSCAPE		BMP			
DMA 1	ENTRANCE NORTH	2036.7	2036.7			IMP 1	64.0	61.0	BIO-RETENTION AREA	4%
DMA 2	ENTRANCE SOUTH	3584.3	3584.3			IMP 2	110.0	108.0	BIO-RETENTION AREA	4%
DMA 3	EX BARN	967.0	967.0			IMP 3	30.0	29.0	BIO-RETENTION AREA	4%
DMA 4	EX CARETAKER	3686.4	1437.8		1643.6	IMP 4	48.0	48.0	BIO-RETENTION AREA	4%
DMA 5	ADA PARKING	540.0	540.0			IMP 5	17.0	16.0	BIO-RETENTION AREA	4%

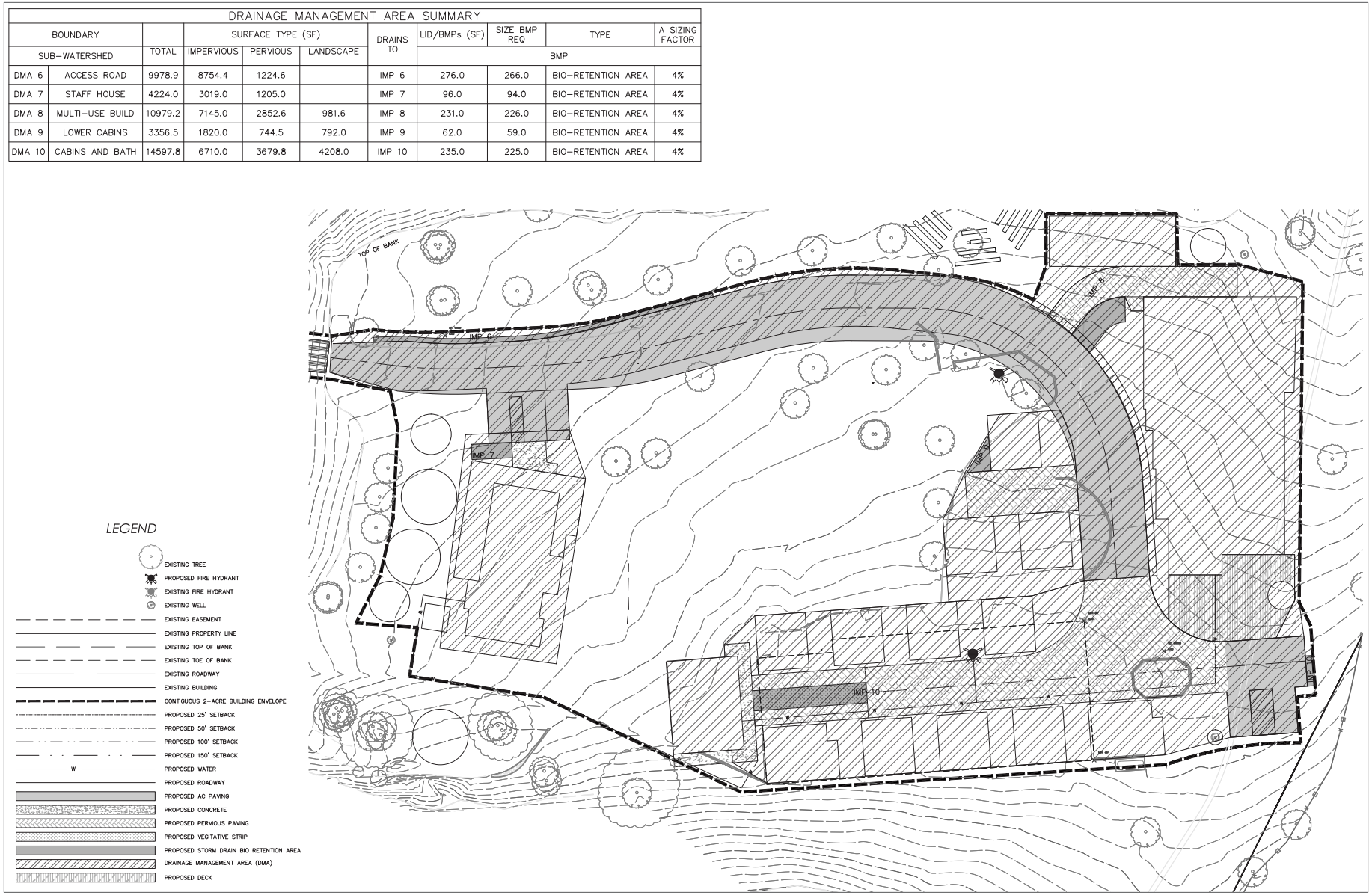


Source: Northstar, 2020.

0 45
Scale (Feet)

Figure 4.8-2
Proposed Stormdrain Layout (North)

DRAINAGE MANAGEMENT AREA SUMMARY										
BOUNDARY			SURFACE TYPE (SF)			DRAINS TO	LID/BMPs (SF)	SIZE BMP REQ	TYPE	A SIZING FACTOR
SUB-WATERSHED		TOTAL	IMPERVIOUS	PERVIOUS	LANDSCAPE		BMP			
DMA 6	ACCESS ROAD	9978.9	8754.4	1224.6		IMP 6	276.0	266.0	BIO-RETENTION AREA	4%
DMA 7	STAFF HOUSE	4224.0	3019.0	1205.0		IMP 7	96.0	94.0	BIO-RETENTION AREA	4%
DMA 8	MULTI-USE BUILD	10979.2	7145.0	2852.6	981.6	IMP 8	231.0	226.0	BIO-RETENTION AREA	4%
DMA 9	LOWER CABINS	3356.5	1820.0	744.5	792.0	IMP 9	62.0	59.0	BIO-RETENTION AREA	4%
DMA 10	CABINS AND BATH	14597.8	6710.0	3679.8	4208.0	IMP 10	235.0	225.0	BIO-RETENTION AREA	4%



Source: Northstar, 2022.

0 60
Scale (Feet)

Figure 4.8-3
Proposed Stormdrain Layout (South)

The OWTS and disposal system would be regulated by the RWQCB pursuant to the SWRCB's General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (Order WQ 2014-0153-DWQ) and Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (Resolution No. 2012-0032). Under these regulations, the project applicant would file a ROWD with the San Francisco Bay RWQCB to obtain coverage under the WDRs. The ROWD would include a technical report that describes the wastewater generation, treatment, storage, and disposal. Upon review of the ROWD, the San Francisco Bay RWQCB's Executive Officer would issue a Notice of Applicability (NOA) when coverage under the General Order has been authorized. The NOA will contain the necessary site-specific monitoring and reporting requirements. Furthermore, the proposed project would comply with the requirements of the Basin Plan including any prohibitions and/or water quality objectives, governing the discharge from the OWTS. The OWTS has been designed in accordance with the Alameda County OWTS Manual and would also comply with the requirements of the ACDEH and Chapter 15.8 of the ACMC.

Greywater System

The proposed greywater systems on the site include a 2,500 gpd collection, treatment, and pump system reuse for subsurface irrigated areas around cabins and a 100 gpd passive filtration and laundry-to-landscape system for reuse for subsurface orchards irrigation. Collectively the greywater systems are estimated to reuse 380,000 gallons per year for irrigation demands. Figure 4.8-1 shows the areas to be irrigated with greywater.

The greywater system would comply with the applicable requirements described in Title 22 of the California Code of Regulations, the requirements of the California Plumbing Code (Part 5, Title 24, CCR), and the requirements of the California Health and Safety Code. The proposed greywater system would include filtration prior to dispersal. For such systems, the plumbing code requires a 50-foot setback between areas irrigated with greywater and creeks. The plumbing code also requires a 100-foot setback between areas irrigated with greywater and water supply wells. As shown on Figure 4.8-1, the proposed project complies with applicable setbacks.

Compliance with the C.3 provisions of the MS4 permit, the WDR, the NOA, the Basin Plan, the ACMC, Title 22 of the California Code of Regulations, and the requirements of the California Plumbing Code and Health and Safety Code would address anticipated and expected pollutants of concern as a result of operational activities. As a result, water quality impacts associated with operational phase would *be less than significant.*

Significance Without Mitigation: Less than significant.

HYD-2	**The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

The project proposes an on-site water system that would be developed from two on-site wells that are currently in place. Both wells are screened in consolidated sedimentary bedrock and were constructed in

accordance with the requirements of Title 22 of the California Code of Regulations (CCR). Based on data from ten-day pumping tests and source capacity analysis as per CCR Title 22, the two groundwater sources have a combined capacity of 7.7 gallons per minute (gpm). Neither well draws on groundwater under the direct influence of surface water. The methodology and conclusions of the supply evaluation have been reviewed and accepted by the DDW; formal approval is anticipated with the submittal of the final evaluation to the State.

The project would have an impact to groundwater supplies if these wells would result in a decrease in groundwater supply for the area surrounding the project site. The area surrounding the site is sparsely populated, with scattered residential properties to the south and east and the Twining Vine Winery and Event Center to the north. The project site and surrounding area are not in a designated groundwater basin and therefore are not subject to the requirements of a groundwater sustainability plan. The on-site groundwater wells will be pumped on an intermittent basis, typically less than 150 days/year, when the camp is in session. The average daily demand is 1.5 gpm and the maximum daily demand is 2.76 gpm, whereas the rated capacity of the wells is 7.7 gpm. Given the low pumping rates, the drawdown radius would not extend to or impact the neighboring properties. The project site is located in the Agriculture (A) zoning district of Alameda County and future dense residential development is not anticipated in this area. A detailed discussion of groundwater availability for the project, existing development in the area, and future foreseeable development is provided in Chapter 4.14, *Utilities and Service Systems*.

Additionally, the project proposes to minimize water consumption using greywater systems for landscape irrigation and climate appropriate, water efficient landscaping. Captured rainwater will also be used for other non-potable uses. The project site is also not located in an active groundwater recharge area.

Therefore, the proposed project would not substantially decrease groundwater or interfere with groundwater recharge, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Source: Northstar, 2020.

0 100
Scale (Feet)

Figure 4.8-4
Proposed Septic Layout

HYD-3	**The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.**

Erosion and Siltation

The project would involve site improvements that require grading, excavation, and soil exposure during construction, with the potential for erosion or siltation to occur. If not controlled, the transport of these materials to local waterways could temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles. To minimize this impact, the project would be required to comply with the requirements in the State's General Construction Permit, including preparation of an NOI and SWPPP prior to the start of construction activities (see impact discussion HYD-1, above). The SWPPP would describe the BMPs to be implemented during the project's construction activities. The implementation of the BMPs during the construction phase would include the following measures to minimize erosion and siltation:

- Minimize disturbed areas of the site
- Install on-site sediment basins to prevent off-site migration of erodible materials
- Implement dust control measures, such as silt fences and regular watering of open areas
- Stabilize construction entrances/exits
- Install storm drain inlet protection measures
- Install sediment control measures around the site, including silt fences or gravel bag barriers.

In addition, the County requires an erosion and sedimentation control plan, and no grading shall be permitted until an erosion and sedimentation control plan has been reviewed and approved by the County. The proposed project would also need to abide by the requirements of Chapter 15.36 of the ACMC.

For the operational phase, the proposed project would be required to comply with the C.3 provisions of the MS4 permit and Chapters 13.08 and 13.12 of the ACMC (see Impact HYD-1, above). The project applicant would be required to prepare and submit a Stormwater Checklist for C.6/C.3 Compliance to the ACPWA for approval prior to the start of construction.

Collectively, implementation of the BMPs outlined in the SWPPP and the Stormwater Checklist for C.6/C.3 Compliance, compliance with the requirements of Sections 404 and 401 of the CWA, and compliance with the provisions of the ACMC would address the anticipated and expected erosion and siltation impacts during the construction and operational phases of the proposed project. Therefore, the proposed project would not result in substantial erosion or siltation on- or off-site.

Flooding On- or Off-Site

Proposed development would abide by C.3 provisions set by the San Francisco Bay RWQCB, and the design requirements set forth by the Alameda County Flood Control and Water Conservation District's Hydrology and Hydraulics Manual which requires proposed storm drains to be sized to convey the 10-year storm event. In addition, new development must also abide by Chapter 13.08 of the ACMC which regulates the design of permanent post-development stormwater quality measures and controls, including the application of site design, source control, stormwater treatment, and hydromodification management. The County also mandates setbacks from watercourses to prevent activities that would contribute significantly to flooding. As shown in Figure 3-4, *Proposed Project Site Plan*, there are no proposed buildings within the setback area for Cull Creek.

Stormwater Drainage System Capacity

The proposed project includes the construction of new stormwater facilities; however, no connections to the County's existing storm drain system are proposed. Therefore, the project would not impact the County's storm drain system and would result in a *less than significant* impact with respect to storm drain facilities.

Impeding or Redirecting Flood Flows

The discussion above regarding on- and off-side flooding is also applicable to the analysis of impeding or redirecting flood flows. Since new development projects are required to comply with C.3 provisions of the MS4 Permit and retain stormwater on-site via the use of bioretention areas, any flood flows would also be retained for a period of time on-site, which would minimize the potential for flooding impacts. The proposed project would also abide by the requirements of Chapters 13.08 and 13.12 of the ACMC. Additionally, the following section, impact discussion HYD-4, discusses the potential for impeding or redirecting flood flows with development in areas within the 100-year floodplains, dam inundation areas, and tsunami and seiche zones. Based on these discussions, impacts related to impeding or redirecting flood flows would be *less than significant*.

Significance Without Mitigation: Less than significant.

HYD-4	**The proposed site is not located in a 100-year floodplain, dam inundation, tsunami, or seiche zone and would not release pollutants due to inundation from a flood hazard.**

The project site is not within a 100-year floodplain as per FIRM Map. No. 06001C0285G dated August 3, 2009.[22] The proposed project is also not within a dam inundation zone and is not located near any water storage tanks or reservoirs that would result in a seiche during seismic activity. The project site is also not

[22] Federal Emergency Management Agency, August 3, 2009. FIRM Map 06001C0285G. https://msc.fema.gov/portal/search?AddressQuery=17015%20Cull%20Canyon%20Rd%2C%20Castro%20Valley%2C%20CA%2094552#searchresultsanchor, accessed June 7, 2022.

at risk of flooding due to tsunamis. Therefore, there would be *no impact* associated with the release of pollutants due to inundation.

Significance without Mitigation: No impact.

HYD-5 The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The proposed project would adhere to the State CGP and dewatering requirements, the State and ACPWA water well requirements, and the County's erosion and grading requirements as described in detail in impact discussion HYD-1. Compliance with these requirements would ensure that water quality is not adversely impacted during construction. In addition, the proposed project compliance with the C.3 provisions of the MS4 permit, the Basin Plan, the requirements of the SWRQB's General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems, the provisions of Title 22 of the California Code, and the requirements of the California Plumbing Code and Health and Safety Code would ensure that water quality is not impacted during the operational phase of the project. As a result, site development will not obstruct or conflict with the implementation of the San Francisco Bay RWQCB Basin Plan and impacts would be *less than significant*.

Furthermore, on-site groundwater wells would be decommissioned per the California DWR's Well Standards and Chapter 6.88 of the ACMC and would require a permit from ACPWA and completion of a DWR 188 Well Completion Form. Additionally, if any dewatering activities are required during the construction phase, the proposed project would obtain a WDR permit from San Francisco Bay RWQCB. Therefore, the proposed project would not obstruct sustainable groundwater management and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

HYD-6 Implementation of the proposed project would not result in impacts relating to hydrology and water quality that are cumulatively considerable when viewed in connection with the effects of past, current, and reasonably foreseeable projects.

Cumulative impacts to hydrology, drainage, flooding, and water quality are considered for the San Lorenzo Creek watershed. New development and redevelopment in these watersheds could increase impervious areas, thus increasing runoff and flows into the storm drain systems or local watercourses. Future projects would need to comply with the requirements of NPDES MS4 Permit No. CAS612008 (Order No. R2-2015-0049 as amended by Order No. R2-2019-0004). The permit requirements include the implementation of BMPs that minimize stormwater runoff and integrate bioretention facilities into the site design. All construction projects that disturb one acre or more of land would also be required to prepare and implement SWPPPs to obtain coverage under the Statewide CGP.

Additionally, cumulative projects would be required to comply with various City municipal codes (if within a City's jurisdiction), standards of approval, and policies; County ordinances; and numerous water quality regulations that control construction-related and operational discharge of pollutants in stormwater. The water quality regulations implemented by the San Francisco Bay RWQCB take a basinwide approach and consider water quality impairment in a regional context. For example, the NPDES Construction General Permit ties receiving water limitations and Basin Plan objectives to terms and conditions of the permit, and the MS4 permits encompasses all of the surrounding municipalities to manage stormwater systems and be collectively protective of water quality. Projects in these watersheds would implement structural and nonstructural source-control BMPs to reduce the potential for pollutants to enter runoff, and treatment-control BMPs to remove pollutants from stormwater. Therefore, cumulative water quality impacts would be *less than significant* after compliance with these permit requirements, and impacts would not be cumulatively considerable.

Although the proposed project is not within a 100-year floodplain, other cumulative projects within the watersheds may be constructed within 100-year flood zones or dam inundation zones. Such projects would be mandated to comply with the National Flood Insurance Program requirements. In addition, jurisdictions within these watersheds regulate development within flood zones through their municipal codes, in compliance with FEMA standards, to limit cumulative flood hazard impacts. Therefore, cumulative impacts to hydrology, drainage, and flooding would be *less than significant*, and impacts of the proposed project would not be cumulatively considerable.

Cumulative projects that install on-site water wells could potentially decrease groundwater supplies or interfere substantially with groundwater recharge. Any future wells at project sites in the County would be required to adhere to the requirements of the ACMC pertaining to water wells. Chapter 13.16 regulates the construction of wells in such a manner that the groundwater of the county will not be contaminated or polluted, and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of the county. Furthermore, on-site groundwater wells will be installed per the California DWR's Well Standards to ensure groundwater quality is maintained and that groundwater is sustainably managed. Therefore, cumulative groundwater impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.9 LAND USE AND PLANNING

This chapter describes the regulatory framework and existing conditions on the project site related to land use and planning, and the potential impacts of the project on land use and planning.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

This section summarizes key regional and local regulations and policies pertaining to land use and planning that are applicable to the proposed project. There are no federal or State regulations applicable to the proposed project with regards to land use and planning.

Regional Regulations

Plan Bay Area 2050

Plan Bay Area 2050 is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). *Plan Bay Area 2050* was prepared by the Association of Bay Area Governments (ABAG), the regional planning agency and council of governments for the nine-county San Francisco Bay Area including Alameda County, and the Metropolitan Transportation Commission (MTC), the San Francisco Bay Area's transportation planning, financing, and coordinating agency. It was adopted by the ABAG and MTC on October 21, 2021. Plan Bay Area 2050 outlines a roadmap for the San Francisco Bay Area's future and identifies a path forward for future investments, including ways to reduce greenhouse gas emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by California Air Resources Board. An overarching goal of *Plan Bay Area 2050* is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle miles traveled and associated greenhouse gas emissions reductions. These areas are designated as Priority Development Areas and Transit Priority Areas. The project site is not located within a Priority Development Area or Transit Priority Area.[1]

Local Regulations

Castro Valley General Plan

The Alameda County General Plan consists of three area plans, which contain goals, policies, and actions for circulation, land use, open space, conservation, safety, and noise for their respective geographic areas. The proposed project is located within the planning area for the Castro Valley General Plan. Table 4.9-1,

[1] Metropolitan Transportation Commission, 2020, Priority Development Areas. https://opendata.mtc.ca.gov/datasets/priority-development-areas-plan-bay-area-2050/explore?location=37.899147%2C-122.289021%2C9.20, accessed December 10, 2021.

Relevant Castro Valley General Plan Land Use and Development Policies, lists policies from the Land Use and Development chapter of the Castro Valley General Plan that are relevant to the proposed project.

TABLE 4.9-1 RELEVANT CASTRO VALLEY GENERAL PLAN LAND USE AND DEVELOPMENT POLICIES

Policy No.	Text
Goal 4.2-1	Promote a land use pattern that will meet the community's development needs in a manner that protects desired community character and valued resources.
Policy 4.4-1	**Scale and Character. Require new development to comply with zoning standards and be compatible with the scale and character of surrounding development.**

Source: Alameda County Community Development Agency Planning Department, March 2012. Castro Valley General Plan, Chapter 4, Land Use and Development, https://www.acgov.org/cda/planning/generalplans/documents/Chapter-4-Land-Use-and-Development.pdf, accessed January 4, 2022.

Measure D

Measure D was adopted in November 2000 to revise the urban growth boundary of eastern Alameda County, reserving less land for urban growth and more land for agriculture and open space.[2] This ordinance, amending the Alameda County General Plan, applied similar policies to rural Castro Valley. The Castro Valley and Palomares Canyonlands in the West County have been redesignated as Resource Management. This designation permits agricultural uses, recreational uses, habitat protection, watershed management, public and quasi-public uses, areas typically unsuitable for human occupation due to public health and safety hazards, secondary residential units, active sand and gravel and other quarries, reclaimed quarry lakes, and similar and compatible uses. This designation is intended mainly for land designated for long-term preservation as open space, but may include low intensity agriculture, grazing, and very low-density residential use.[3] This designation allows for a 0.01 floor area ratio (FAR) and a two-acre building envelope.

Alameda County Municipal Code

The Alameda County Municipal Code (ACMC) contains all ordinances for the County. Chapter 17 of the ACMC, the Alameda County Zoning Ordinance, regulates physical development in Alameda County and includes land use classifications and associated regulations for each. Chapter 17.06 of the Alameda County Zoning Ordinance includes Agricultural (A) District regulations, for which development of an outdoor recreational facility is considered a conditional use and is permitted in an A district if approved by the West or East County Board of Zoning Adjustments, depending on which board the project falls under based on location.

4.9.1.2 EXISTING CONDITIONS

This section summarizes the existing land uses on the project site and in the surrounding area.

[2] Alameda County Community Development Agency Planning Department, April 2011. Minor Revisions to the Adopted Housing Element (2009-2014) Pursuant to Comments From the California Department of Housing and Community Development, https://www.acgov.org/cda/planning/documents/7Housing-Element.pdf, accessed January 5, 2022.

[3] Alameda County Community Development Agency Planning Department, March 2012. Castro Valley General Plan, Appendix A: Measure D Excerpts Pertaining to the Castro Valley Canyonlands, https://www.acgov.org/cda/planning/generalplans/documents/Appendix-A-Measure-D-Text.pdf, accessed January 5, 2022.

Surrounding Land Uses and Context

As shown in Figure 3-2, *Local Context*, of the Project Description, the project site is within a largely undeveloped area. Residential land uses are located east, south, and west of the project site; the Twining Vine Winery and Event Center is located to the north; and East Bay Regional Parkland is adjacent to the residential properties located along the western boundary. Within the Eastbay Regional Parkland, and bordering the project site to the west, is the Juan Bautista de Anza Historic Trail that stretches from the San Francisco Bay Area to Nogales, Arizona.[4]

The project area has been designated as a Resource Management. The project site is also subject to Williamson Act Contract No. 2016-56, as authorized by the Board of Supervisors on May 3, 2016. The proposed project uses of agriculture and recreational facilities are permitted by the Alameda County Zoning Ordinance (Sections 17.06.030 and 17.06.040).

Existing Land Use on the Project Site

As described in Chapter 3, *Project Description*, the existing project site is developed and heavily vegetated. On the eastern portion of the site, Cull Creek runs north to south through the property, generally parallel and west of Cull Canyon Road. Existing structures on the property include a 1,200-square-foot mobile home, a 970-square-foot barn, and a paved parking area located adjacent to Cull Canyon Road. An existing 14-foot-wide bridge spans Cull Canyon Creek and leads to a developed area that includes a large 7,500-square-foot garage building, a paved patio, and driveways with drainage swales. There are large, semi-flat, open areas adjacent to the garage. The remainder of the site consists of steep bay and oak woodlands on an east-facing slope, with minor drainages.

Existing Zoning and Designated Land Use

Also as discussed in Chapter 3, *Project Description*, the project site is located in the Agriculture (A) zoning district of Alameda County. This zoning district is established for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.[5] Permitted uses include crop, vine, or tree farm, plant nursery, apiary, raising or keeping of poultry or other similar animals, winery, microbrewery or olive mill with visitor center, public or private riding or hiking trails, boarding stables and riding academics. Other uses, such as outdoor recreation facility, animal hospital, kennels, public or private hunting of wildlife or fishing, and public or private hunting clubs and accessory structures, radio and television transmission facilities, and administrative support and service facilities of a public recreation district are allowed with a Conditional Use Permit.

[4] National Park Service, 2020, Juan Bautista De Anza Trail, available online at https://www.nps.gov/juba/index.htm, accessed January 20, 2021.

[5] Alameda County, 2020, Municipal Code, Section 17.06.010 – Agricultural districts – Intent, https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.06ADI_17.06.030PEUS, accessed February 1, 2020.

4.9.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant land use and planning impact if it would:

1. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
2. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to land use and planning.

4.9.3 IMPACT DISCUSSION

LUP-1	**The proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.**

General Plan

The proposed project would comply with the General Plan policies for land use and planning as described in Section 4.9.1.1, Regulatory Framework, above. The proposed project would support the goal of promoting a land use pattern that will meet the community's development needs in a manner that protects desired community character and valued resources. The proposed project is designated Resource Management and would be within 30 miles of the majority of the partner elementary schools to provide educational programs and learning experiences for the youth. The proposed project would also provide an organic garden that would be used in student meals and sold to the community. Furthermore, the proposed project would repurpose existing dirt road and trails to serve as a recreational pedestrian trail system.

The proposed project would also comply with Policy 4.4-1 requiring new development to comply with zoning standards and be compatible with the scale and character of surrounding development, further discussed below.

Municipal Code

The project site is currently zoned as Agricultural (A), which is established for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.[6] The proposed project requires a Conditional Use Permit as established in Section 17.54.130, Conditional uses, of the Alameda County Municipal Code, which is required for uses that are generally

[6] Alameda County, 2020, Municipal Code, Section 17.06.010 – Agricultural districts – Intent, https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.06ADI_17.06.030PEUS, accessed February 1, 2020.

consistent with the purposes of the zoning district where they are proposed but require special consideration to ensure that they can be designed in a manner that will not interfere with the use and enjoyment of surrounding properties. Upon obtaining approval from the City, the proposed project would not conflict with zoning in this regard.

The proposed project would be subject to a Site Development Review for the agricultural caretaker's dwelling. Site Development Review by the planning director is intended to promote harmonious development, recognize environmental limitations, stabilize land values and investments, and promote the general welfare in order to satisfy the requirements set forth in the Municipal Code and General Plan.

In addition, the proposed project would be required to comply with zoning requirements pertaining to site design and landscaping. As discussed in Chapter 3, *Project Description*, the proposed project would include several landscaped outdoor spaces, the majority of which would be in the form of trees, shrubs, and groundcover. Plant material would be chosen for its compatibility with the regional climate and landscape conditions, drought tolerance, longevity, screening cap abilities, and overall attractiveness, as required by the Alameda County Water Efficient Landscape Ordinance, found in Chapter 17.64 of the Alameda County Municipal Code.

The project would comply with the General Plan and Municipal Code policies adopted for the purpose of mitigating an environmental effect. Impacts in this regard would be *less than significant*.

Significance without Mitigation: Less than significant.

LUP-2	**The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to land use and planning.**

The cumulative setting for land use and planning considers the effects of the proposed project and several concurrent developments in the same area of Alameda County. Approval of the cumulative projects by the County of Alameda and surrounding jurisdictions would be contingent on those projects either conforming to existing zoning and General Plan land use regulations for those sites or obtaining approval of zone changes and/or General Plan amendments. However, there are no other projects in this part of Cull Canyon. As discussed above, the proposed project would not conflict with a land use plan, policy, or regulation that is intended to avoid or mitigate an environmental effect. Therefore, the proposed project would not contribute to a cumulative land use and planning impact and the impact would be less than significant.

Significance Without Mitigation: Less than significant.

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4.10 NOISE AND VIBRATION

This chapter describes the regulatory framework and existing conditions on the project site related to noise and vibration, and the potential impacts of the proposed project on the environment with respect to noise and vibration. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts related to implementation of the proposed project. This analysis is in part based on the Environmental Noise Assessment by Saxelby Acoustics. The assessment and construction noise modeling are included in Appendix H, *Noise Data*, of this Draft EIR.

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 TERMINOLOGY

The following are definitions for terms used throughout this chapter.

- **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 the human ear.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A 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.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level, energy averaged over the measurement period.
- **L_{max}.** The maximum noise level during a 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). This is also called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., 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 pm to 7:00 am.
- **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 pm to 10:00 pm and 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am. Note: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent/interchangeable.

- Peak Particle Velocity (PPV). The peak rate of speed at which soil particles move (e.g., inches per second or in/sec) due to ground vibration.
- Vibration Decibel (VdB). A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the United States, the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).
- Sensitive Receptor. Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

4.10.1.2 SOUND FUNDAMENTALS

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by weighting frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

Sound Measurement

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source and their 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." For a single point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dBA for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time, or 1, 5, and 15 minutes per hour. These "Ln" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and the City require that, for planning purposes, an artificial dBA increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 p.m. to 10:00 p.m. and 10 dBA for the hours from 10:00 p.m. to 7:00 a.m. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 pm and 10:00 pm. Both descriptors give roughly the same 24-hour level (i.e., typically within 1 dBA of each other), with the CNEL being only slightly more restrictive (i.e., higher); therefore, they are used interchangeably in this assessment.

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 our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, the heart, and the nervous system. Extended periods of noise exposure above 90 dBA can result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation becomes painful. This is called the threshold of pain. Table 4.10-1 shows typical noise levels from familiar noise sources.

TABLE 4.10-1 TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		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: California Department of Transportation (Caltrans), 2013. *Technical Noise Supplement ("TeNS")*.

4.10.1.3 VIBRATION FUNDAMENTALS

Vibration is an oscillating motion. Like noise, vibration is transmitted in waves, but through earth or solid objects. Unlike noise, vibration is typically felt rather than heard.

Vibration can be either natural—e.g., from earthquakes, volcanic eruptions, landslides—or human-made, such as from explosions, heavy machinery, or trains. Both natural and human-made vibration may be continuous, such as from operating machinery, or impulsive, as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude can be characterized in three ways—displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position. Particle velocity is the rate of speed at which the particles move in inches per second (in/sec) or millimeters per second. Table 4.10-2 presents the human reaction to various levels of PPV.

TABLE 4.10-2 HUMAN REACTION TO TYPICAL VIBRATION LEVELS

Vibration Level Peak Particle Velocity (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling, i.e., houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans), 2013. *Transportation and Construction Vibration Guidance Manual*.

In addition to PPVs, vibrations also vary in frequency, and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, buses often generate frequencies around 3 Hz at high vehicle speeds. It is less common, but possible, to measure traffic frequencies above 30 Hz.

The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area, so the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

4.10.1.4 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, and local governments have established standards and ordinances to control noise.

State Regulations

General Plan Guidelines

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. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements.

The general plan guidelines provide cities and counties with recommended community noise and land use compatibility standards that can be adopted or modified at the local level based on conditions and types of land uses specific to that jurisdiction.

California Building Code: California Green Building Standards Code

The California Building Code (CBC) is Title 24 of the California Code of Regulations. CBC Part 2, Volume 1, Chapter 12, 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 L_{dn} or the CNEL, consistent with the noise element of the local general plan.

Local Regulations

Alameda County General Plan

The Alameda County General Plan Noise Element has goals, objectives, and principles. Applicable goals, objectives, and principles to the proposed project listed below. The Alameda General Plan Noise Element also has a land use compatibility table to determine the level of impact on a land use based on the noise exposure and is summarized in Table 4.10-3.

TABLE 4.10-3 NOISE AND LAND USE COMPATIBILITY TABLE

	dBA CNEL		
Generalized Land Use	Little Impact	Moderate Impact	Significant Impact
Agriculture and Open Space	55 - 75	>75 – 90+	N/A

Source: County of Alameda General Plan Noise Element.

Countywide Goals, Principles, and Objectives

- Goal 1: The peace, health, and welfare of the residents of Alameda County require protection from excessive, unnecessary, and unreasonable noises from any and all sources in the cities and unincorporated territory.
- Goal 2: Promote the compatibility of land uses with respect to noise generation by legislatively protecting sensitive land uses from noise sources.
- Objective 1: Investigate and implement physical and legislative techniques to reduce noise impacts where appropriate.
- Principle 1: Community noise control standards which establish maximum permitted noise levels for sensitive land uses – residential, community care facilities (hospitals, nursing homes, etc.), schools, and any other use considered by the community to be sensitive to noise should be developed and implemented by each jurisdiction.

Unincorporated County Goals, Principles, and Objectives

- **Goal 1:** Alameda County should provide its residents and wildlife with an environment which is free from excessive noise pollution by preventing and suppressing undesirable levels, frequencies, and time durations of noise.
- **Goal 2:** Alameda County should encourage noise compatible land uses near highways and other noise generators.
- **Objective 1:** In order to control objectionable noise Alameda County should survey noise sources and impacts in the unincorporated area and develop acceptable noise level standards for noise impacted areas.
- **Objective 5:** The County should encourage architectural designers, developers, and builders to employ physical techniques to reduce noise impacts.

Alameda County Municipal Code

Exterior Noise Standards

The proposed project is in an unincorporated area of Castro Valley, CA. Therefore, the Alameda County noise standards are applicable. Section 6.60.040, Table 6.60.040a of the Alameda County Municipal Code (ACMC) 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 owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any single or multiple-family residential, school, hospital, church, public library or commercial properties to exceed the noise level standards summarized in Table 4.10-4, *Alameda County Exterior Noise Standards*.

TABLE 4.10-4 ALAMEDA EXTERIOR NOISE STANDARDS

Receptor Type	Cumulative Number of Minutes in any 1-hour time period	Daytime 7:00 am – 10:00 pm	Nighttime 10:00 pm to 7:00 am
Single, Multiple-Family Residential, School, Hospital, Church or Public Library Properties	30 (L_{50})	50 dBA	45 dBA
	15 (L_{25})	55 dBA	50 dBA
	5 (L_{8})	60 dBA	55 dBA
	1 (L_{2})	65 dBA	60 dBA
	0 (L_{max})	70 dBA	65 dBA

Source: County of Alameda Municipal Code Section 6.60.040, table 6.60.040a.
Notes:
- In the event that the measured ambient noise level exceeds the applicable noise level standard in any category, the applicable standard shall be adjusted so as to equal said ambient noise level.
- Each of the noise level standards specified in shall be reduced by five dBA for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.
- If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the applicable noise level standards.
- Notwithstanding the noise level standards set forth in this section, the noise level standard applicable to the emission of sound from transformers, regulators, or associated equipment in electrical substations shall be 60 dB(A).

Special Provisions or Exceptions

Under Section 6.60.070(E) of the ACMC, construction noise is exempt during the hours of 7:00 am to 7:00 pm Monday through Friday and 8:00 am to 5:00 pm Saturday or Sunday.

Vibration

Under section 6.60.050(B)(8) of the ACMC, it is prohibited to operate or permit the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way.

4.10.1.5 EXISTING CONDITIONS

Existing Sensitive Receptors

Certain land uses, such as residences, schools, places of worship, recreational areas, and hospitals, are particularly sensitive to noise. These uses are regarded as sensitive because they are where citizens most frequently engage in activities that 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 particularly sensitive to noise or vibration. The nearest noise-sensitive receptors in the vicinity of the proposed project are existing residences to the north, east, and south of the project site.

Existing Noise Environment

The existing noise environment in the project area is primarily characterized by traffic on Cull Canyon Road and general rural ambient. Noise sources may also be from surrounding residences and events at the neighboring winery to the north. Existing traffic volumes along Cull Canyon Road were found to be approximately 420 vehicles trips per day. However, to quantify the existing noise ambient environment in the project vicinity, Saxelby Acoustics conducted one long-term (24-hour) and one short-term (10-minute) noise measurement in the vicinity of the project site. Results from the noise measurements are summarized in Table 4.10-5, *Project Noise Levels at Adjacent Receptors*, below. The noise measurement locations can be seen in Figure 2 of the Saxelby Report (see Appendix H, *Noise Data*).

TABLE 4.10-5 PROJECT NOISE LEVELS AT ADJACENT RECEPTORS

Noise Measurement	Measured Noise Levels, dBA						
	Daytime 7:00 am to 10:00 pm			Nighttime 10:00 pm to 7:00 am			CNEL/Ldn
	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}	
LT-1 4/09/2020 – 4/10/2020 Southern property line	45	38	60	42	40	52	49
ST-1 4/09/2020, 10:00 am Northern property line	48	37	63	N/A	N/A	N/A	N/A

Saxelby Acoustics, LLC. Environmental Noise Assessment, 2020.

4.10.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in significant noise and vibration impacts if it would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
4. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative noise- or vibration-related impact.

Construction Noise

Alameda County does not have an established construction noise threshold. Therefore, the Federal Transit Administration's (FTA) criteria for temporary construction noise of 80 dBA L_{eq} at receiving residential receptor property lines is used to determine impact significance. [1]

Traffic Noise

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels in the areas around the project. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions (soundproof booth). Changes of less than 1 dBA are usually indiscernible in exterior and controlled environments. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this, the following thresholds of significance similar to those recommended by the Federal Aviation Administration (FAA) are used to assess traffic noise impacts at sensitive receptor locations. A significant impact would occur if traffic noise increase would exceed:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL
- 5 dBA in ambient noise environments of less than 60 dBA CNEL

A significant cumulative traffic noise impact would occur if the project's contribution to the cumulative increase is 1 dBA or greater.

[1] Federal Transit Administration (FTA). 2018, September. Transit Noise and Vibration Impact Assessment.

Stationary Noise

Stationary noise is regulated by the ACMC as summarized in Table 4.10-3 above. A significant on-site stationary noise impact would occur if the proposed project's operations would exceed the County's exterior noise standards at sensitive receptor property line.

Vibration

Alameda County states under Section 6.60.050(B)(8) of the ACMC that it is prohibited to operate or permit the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way. However, the ACMC does not state a quantified threshold for vibration perception. Therefore, the FTA's criterion of 72 VdB for acceptable levels of groundborne vibration perception based on typical human response is used to determine impact significance.

In addition to analyzing the human response to groundborne vibration, vibration damage (vibration induced architectural damage) impacts to surrounding structures is also analyzed. The FTA criteria to for architectural damage to non-engineered timber and masonry buildings (applicable surrounding residential structures) is 0.2 inches per second peak particle velocity (in/sec PPV). A significant impact would occur if construction vibration would exceed vibration levels of 0.2 in/sec PPV at the nearest façade of a building/structure.

4.10.3 IMPACT DISCUSSION

Methodology

This noise and vibration evaluation was prepared in accordance with the requirements of CEQA to determine if the proposed project would result in significant construction and operational noise and vibration impacts at nearby sensitive receptors. The noise impact assessment for off-site traffic noise and onsite operations including use of the Council Ring and recreational area is determined based on SoundPLAN modeling conducted by Saxelby and their findings in the Environmental Noise Assessment (Appendix H). The recreational area includes the open areas around the proposed cabins, staff lodging house, and bathroom building where there is space for outdoor activities.

Construction noise modeling was conducting using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) with default CalEEMod construction equipment mix. Groundborne vibration impacts were assessed using FTA criteria for residential uses for both vibration damage and vibration annoyance.[2]

[2] Federal Highway Administration. 2006, August. Construction Noise Handbook.

NOI-1	**Implementation of the proposed project would not result in the generation of temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.**

Construction Trips

The transport of workers and materials to and from the construction site would incrementally increase noise levels along Cull Canyon Road. Individual construction vehicle pass-bys and haul trucks may create momentary noise levels of up to 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would be temporary and generally short lived as trucks pass by.

Based on CalEEMod defaults, up to 76 temporary daily worker and vendor trips would be generated during overlapping building construction, paving, and architectural coating and up to two daily haul truck trips would be generated during demolition debris haul. Existing average daily trips along the access roadway, Cull Canyon, is approximately 420 trips.[3] The addition of temporary worker, vendor, and haul trips would result in a negligible noise increase of up to 0.7 dBA CNEL.[4] Therefore, impacts would be less than significant.

Construction Equipment

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each activity phase of construction involves the use of different construction equipment, and therefore each activity phase has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction stage is determined by combining the L_{eq} contributions from the three loudest pieces of equipment used during each phase, while accounting for the ongoing time-variations of noise emissions. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on the specific activity performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site with different loads

[3] Existing trips provided by Saxelby Acoustics, LLC.

[4] Temporary construction trip traffic increase = 10*Log[(existing daily trips+ temporary construction daily trips)/existing daily trips).

and power requirements. Noise levels from project-related construction activities were calculated from the simultaneous use of the top three loudest applicable construction equipment at spatially averaged distances (i.e., from the acoustical center of the specific construction activity phases) to the property line of the nearest receptors. The area around the center of activity phases (demolition, grading, site preparation, etc..) best represents the equivalent continuous average noise levels (L_{eq}) related to construction at the various sensitive receptors.

Table 4.10-6, *Project-Related Construction Noise dBA Leq*, summarizes the estimated construction noise level by activity phase except for paving. Construction noise levels for all other phases modeled using RCNM and as shown in Table 4.10-6, construction noise would not exceed the FTA threshold of 80 dBA Leq. Therefore, construction noise impacts would be *less than significant*.

TABLE 4.10-6 PROJECT-RELATED CONSTRUCTION NOISE, DBA LEQ

Construction Activity	RCNM Reference Noise Levels	Residential Receptors to North	Residential Receptors to East	Residential Receptors to South
Distance in feet	*50*	*640*	*430*	*450*
Demolition	85	63	67	66
Distance in feet	*50*	*160*	*340*	*450*
Site Preparation	85	74	68	66
Grading	85	74	68	66
Distance in feet	*50*	*120*	*270*	*280*
Building Construction	83	75	68	68
Architectural Coating	74	66	59	59
Maximum Noise Level	**85**	**75**	**70**	**68**
Exceed FTA 80 dBA Leq Threshold?		**No**	**No**	**No**

Source: Roadway Construction Noise Model

Stationary Noise

Campfire (Council Ring) and Recreational Area SoundPLAN Modeling

Operational noise related to proposed outdoor activities was modeled using SoundPLAN noise prediction modeling software. SoundPLAN modeling indicates that on-site camp operations such as gatherings around the campfire area (shown as Council Ring on Figure 3-4, *Proposed Project Site Plan*, in Chapter 3, *Project Description*, of this EIR) and recreational area would generate noise levels of up to 42.8 dBA L_{50} and 61.8 dBA L_{max} at the nearest residence to these areas (residences to east across Cull Canyon Road).[5] SoundPLAN operational noise contours are shown in Figures 4.10-1 through 4.10-4 and summarized in Table 4.10-7, *Modeled Project Noise Levels at Adjacent Sensitive Receptors*. Table 4.10-7 also compares project related operational noise levels to the ACC exterior noise standards and shows that noise levels would not exceed the ACC daytime nor nighttime exterior noise standards. Therefore, noise impacts would be *less than significant*.

TABLE 4.10-7 MODELED PROJECT NOISE LEVELS AT ADJACENT SENSITIVE RECEPTORS

Activity Area	Modeled Noise Levels	Daytime/Nighttime Noise Standard	Exceeds County's Standards

[5] Saxelby Acoustics, LLC. 2020, May. Environmental Noise Assessment, The Mosaic Project.

	dBA L_{50}	dBA L_{max}	dBA L_{50}	dBA L_{max}	
Recreational Area	40.4	61.4	50/45	70/65	No
Campfire Area	42.8	61.8	50/45	70/65	No

Source: Saxelby Acoustics, 2020. Environmental Noise Assessment, The Mosaic Project (Appendix H of this Draft EIR)

Garden Yard

The proposed project would include a small garden area at the northern end of the project site. Operational farming equipment would be handheld and would not include large machinery such as tractors or off-road vehicles. Therefore, the primary noise source from gardening activities would be from people talking. A typical conversation between two people at a distance of three feet is 60 dBA.[6] The nearest receptor property line is Twining Estates to the north at approximately 50 feet. At 50 feet noise levels associated with typical conversations would attenuate to 37 dBA. This would not exceed the daytime nor nighttime ACC noise standards summarized in Table 4.10-7 above.

In addition to gardening activities, the project would also house up to five pigmy goats and forty chickens and would graze on the property with the main purpose of understory vegetation maintenance. The animals would be used for natural property maintenance, food, and as an educational experience for the campers. Noise associated with goats and chickens would be minimal and would overall not change the existing rural ambient noise characteristics of the project site and neighboring properties. Impacts would be *less than significant*.

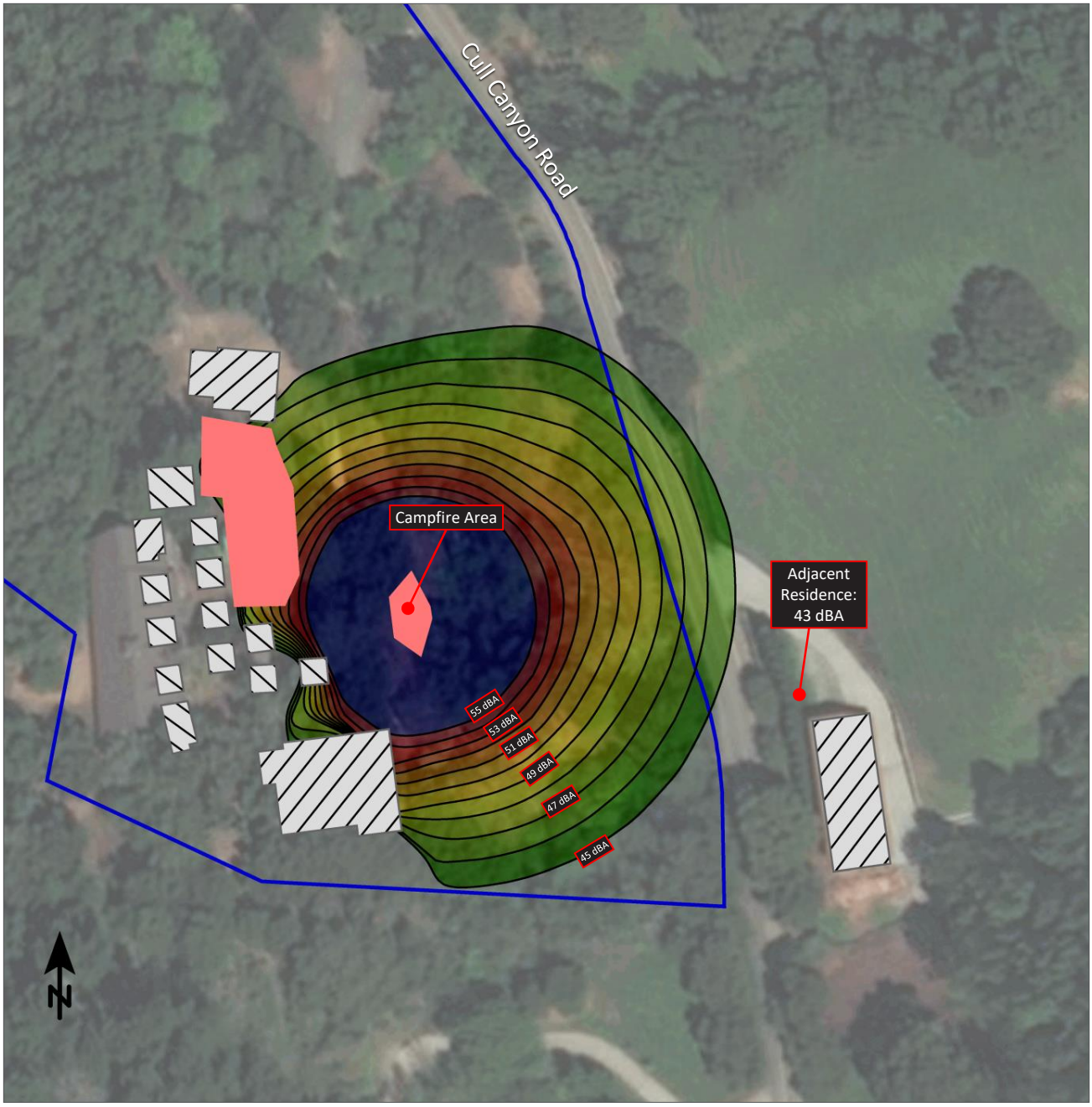
[6] Engineering ToolBox. 2005. "Voice Level at Distance." Accessed May 26, 2022. https://www.engineeringtoolbox.com/voice-level-d_938.html.

Source: Saxelby Acoustics, 2021.

Figure 4.10-1
L50 Outdoor Activity Noise Contours (dBA L_{50})

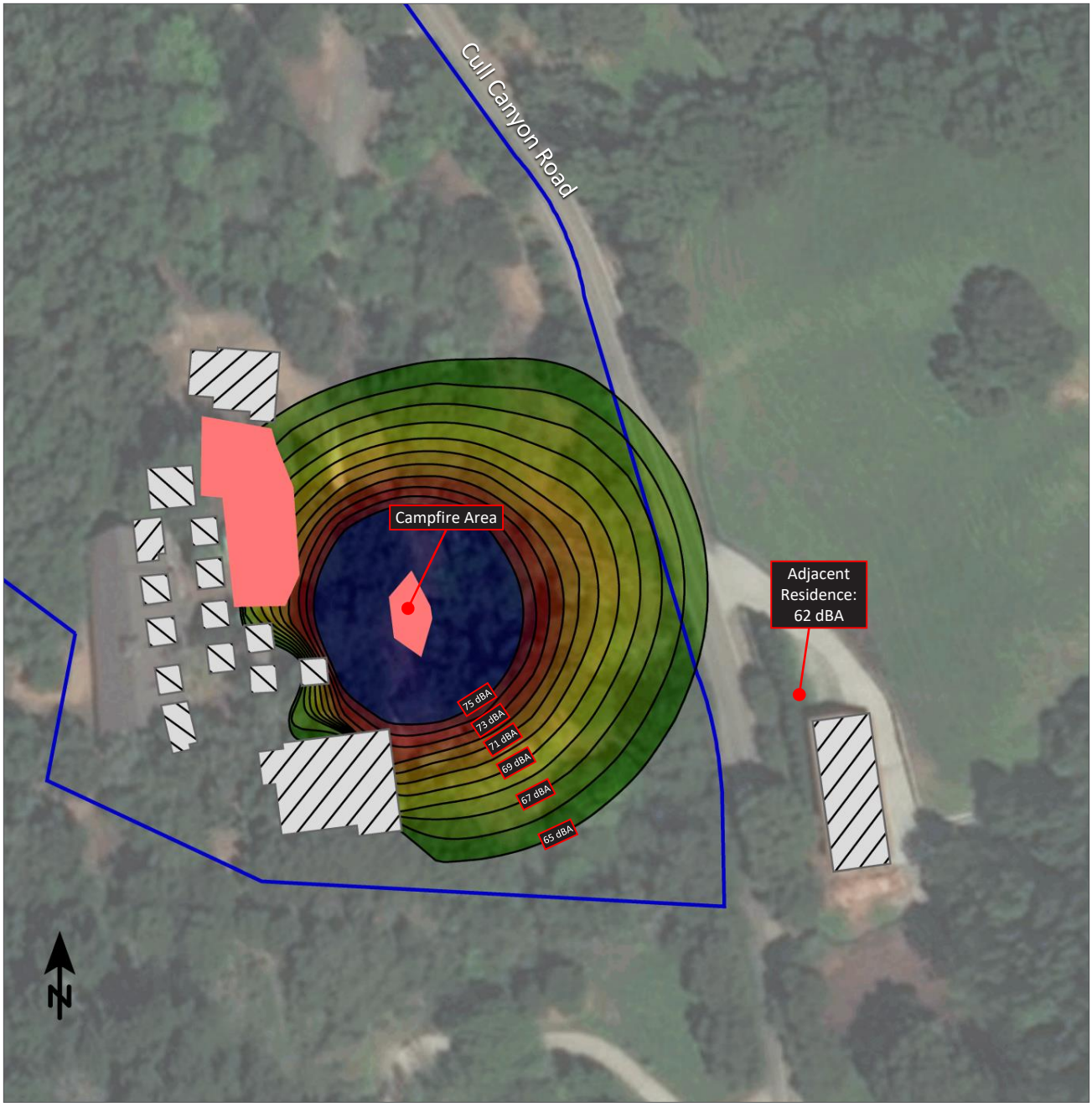
Source: Saxelby Acoustics, 2021.

Figure 4.10-2
Lmax Outdoor Activity Noise Contours (dBA L_{max})



Source: Saxelby Acoustics, 2021.

Figure 4.10-3
L50 Campfire Noise Contours (dBA L_{50})



Source: Saxelby Acoustics, 2021.

Figure 4.10-4
Lmax Campfire Noise Contours (dBA L_{max})

Traffic Noise

Existing traffic volumes along Cull Canyon Road are approximately 420 daily trips. The proposed project is expected to increase traffic by up to 51 daily trips. [7] This increase in daily trips along Cull Canyon Road would result in a traffic noise increase of approximately 0.5 dBA CNEL. As discussed in Section 4.10.2 *Standards of Significance*, a significant traffic noise impact would occur when the proposed project would result in a traffic noise increase:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA CNEL and higher;
- Greater than 3 dBA increase for ambient noise environments of 60–64 dBA CNEL; and
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA CNEL.

The addition of 51 daily trips would increase traffic noise of 0.5 dBA CNEL and would not exceed any of the three established thresholds. Therefore, traffic noise impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

NOI-2	**Implementation of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.**

Operational Vibration

The operation of the proposed project would not include any substantial long-term vibration sources (e.g., subways and rail or industrial operations). Thus, no significant vibration effects from operational sources would occur.

Construction Vibration

Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with construction-related activities. Construction on the project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibration from construction activities rarely reach levels that damage structures.

[7] W-Trans. 2022, April. Focused Traffic Study for the Mosaic Project.

Vibration Damage

Table 4.10-8 identifies vibration damage levels for typical construction equipment at a reference distance of 25 feet. A potential impact would occur if vibration levels would exceed 0.2 in/sec PPV at the façade of a sensitive receptor (structure). To assess vibration damage levels at sensitive receptors, receptor distances are measured from the edge of the construction disturbance area to the nearest building receptor façade. The nearest receptor is a single-family home to the northeast at approximately 190 feet. As shown in Table 4.10-8, at 190 feet vibration levels would attenuate well below 0.2 in/sec PPV. Therefore, this impact would be *less than significant*.

TABLE 4.10-8 CONSTRUCTION EQUIPMENT VIBRATION LEVELS FOR ARCHITECTURAL DAMAGE

Equipment	FTA reference vibration levels at 25 feet (in/sec PPV)	Vibration at Residences to northeast at 190 feet (in/sec PPV)
Vibratory Roller	0.21	0.010
Hoe Ram	0.089	0.004
Large Bulldozer	0.089	0.004
Caisson Drilling	0.089	0.004
Loaded Trucks	0.076	0.004
Jackhammer	0.035	0.002
Small Bulldozer	0.003	<0.000

Note: PPV = peak particle velocity
Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

Vibration Annoyance

Table 4.10-9 identifies vibration annoyance levels for typical construction equipment at a reference distance of 25 feet. A significant impact would occur if vibration levels would be 72 VdB or greater at nearby sensitive receptors. Table 4.10-9 shows FTA reference VdB levels for typical construction equipment and the estimated vibration levels at nearby sensitive receptors. Though vibration annoyance impacts address human response and architectural damage, vibration levels are conservatively calculated from the edge of the construction disturbance area to the nearest residential dwelling. As shown in Table 4.10-9, vibration levels would not exceed the 72 VdB threshold at the nearest residential structure. Therefore, impacts would be *less than significant*.

TABLE 4.10-9 CONSTRUCTION EQUIPMENT VIBRATION LEVELS FOR VIBRATION ANNOYANCE

Equipment	Approximate VdB at 25 feet	Approximate VdB at 190 feet
Vibratory Roller	94	68
Hoe Ram	87	61
Large Bulldozer	87	61
Caisson Drilling	87	61
Loaded Trucks	86	60

TABLE 4.10-9 CONSTRUCTION EQUIPMENT VIBRATION LEVELS FOR VIBRATION ANNOYANCE

Equipment	Approximate VdB at 25 feet	Approximate VdB at 190 feet
Jackhammer	79	53
Small Bulldozer	58	32

Note: PPV = peak particle velocity
Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

Significance Without Mitigation: Less than significant.

NOI-3 Implementation of the proposed project would not expose people residing or working within two miles of a private airstrip or airport to excessive noise levels.

The nearest airport is the Hayward Executive Airport, approximately 6.7 miles southwest of the project site.[8] Implementation of the project would not result in exposure of people residing or working in the project area to excessive airport-related noise. There would be *no impact*.

Significance Without Mitigation: No impact.

NOI-4 Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to noise or vibration.

The proposed project is in a rural area and as shown in Table 4-1 in Chapter 4, *Environmental Analysis*, of this Draft EIR, there are no other known planned and approved project within a quarter mile of the project site. Therefore, cumulative operational noise, including offsite traffic noise, is not anticipated minimal.

For construction noise, because construction noise attenuates at a high rate of 6 dBA per doubling of distance of the noise source, only projects within 1,000 feet of the project site are considered to have a cumulative construction noise effect. Projects farther than 1,000 feet from the project site would typically not significantly contribute to cumulative construction noise. There are no known planned and approved projects within a quarter mile (1,320 feet). Therefore, construction cumulative noise impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

[8] Airnav, LLC. 2020. Airport Information. Accessed January 26, 2021. http://www.airnav.com/airports.

4.11 PUBLIC SERVICES

This chapter describes the regulatory framework and existing conditions on the project site related to public services, specifically fire protection and police protection services, and the potential impacts of the proposed project on these services.

4.11.1 ENVIRONMENTAL SETTING

4.11.1.1 REGULATORY FRAMEWORK

State Regulations

California Health and Safety Code

State fire regulations are in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (also in the California Building Code [CBC]), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with the CCR, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Equipment, the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education.

California Building Code

The State of California provides a minimum standard for building design through Title 24 of the California Code of Regulations (CCR), commonly referred to as the California Building Code (CBC). The CBC is in Part 2 of Title 24. The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Building plans are checked by local building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the establishment of fire resistance standards for fire doors, building materials, and particular types of construction in high fire hazard severity zones; requirements for smoke-detection systems and exiting requirements; and the clearance of debris.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is found in CCR Title 24, Part 9 and, like the CBC, it is revised and published every three years by the California Building Standards Commission. Also like the CBC, the CFC is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions.

The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Local Regulations

Castro Valley General Plan

Alameda County includes several documents that make up its General Plan. The project site is located in the Castro Valley Area, which is covered in the Castro Valley General Plan, which was finalized in March 2012. Goals, policies, and actions pertaining to public services are included in Chapter 9, *Public Services and Utilities*, and other policies related to fire safety are included in Chapter 10, *Natural Hazards and Public Safety*, of the Castro Valley General Plan. Table 4.11-1 lists the relevant goals, policies, and actions for fire protection and police services.

TABLE 4.11-1 CASTRO VALLEY GENERAL PLAN POLICIES RELEVANT TO FIRE PROTECTION AND POLICE SERVICES

No.	Goal / Policy / Action
Chapter 9, Public Services and Utilities, Section 9.2, Fire and Police Services.	
Goal 9.2-1	*Provide and maintain a safe environment for Castro Valley residents, workers, visitors, and property owners.*
Policy 9.2-1	**Comparable Public Safety Standards.** Adopt and maintain public safety service standards that meet or exceed standards for comparable incorporated cities in Alameda County and surrounding counties.
Policy 9.2-2	**Community-Oriented Policing.** Promote a community-oriented approach to law enforcement.
Policy 9.2-3	**Emergency Management Plan.** Maintain and regularly update a standardized Emergency Management Plan in coordination with the Alameda County Fire Department, the East Bay Regional Parks District, and public safety agencies in surrounding cities.
Policy 9.2-4	**Defensible Space.** Incorporate defensible space principles for fire protection in new development.
Policy 9.2-5	**Reduce Fire Risk.** Plan new public and private buildings to minimize the risk of fires and identify measures to reduce fire hazards to persons and property in all existing development.
Policy 9.2-6	**Update and Inform of Disaster Plans.** Ensure that disaster plans for the Castro Valley community are kept up-to-date and that all residents and businesses are informed of the plan and its procedures.
Policy 9.2-7	**Emergency Response.** Improve the capability of Alameda County public safety agencies, Eden Medical Center Castro Valley, and other public facilities to respond to public emergencies such as earthquakes and major fires.

No.	Goal / Policy / Action
Action 9.2-1	**Review and Identify Funding Sources.** Regularly review existing funding sources and identify new sources to maintain and improve police services.
Action 9.2-2	**Increase Public Awareness of County Sheriff Services.** Use the construction of the new law enforcement complex as an opportunity to increase community awareness of Sheriff's Office activities and services in Castro Valley and other unincorporated communities.
Action 9.2-3	**Review Zoning with Police.** Review the County subdivision and zoning ordinances with County law enforcement personnel and the California Highway Patrol (CHP) to identify standards that may conflict with the goal of creating a safer environment.
Action 9.2-4	**Involve Police in Design Review.** Adopt design guidelines and criteria that address security and safety issues. Involve County law enforcement personnel in the review of proposed development projects to identify and revise design features make development less safe or create potential hazards.
Action 9.2-5	**Emergency Operations Center.** Designate and, if necessary, upgrade one of the Alameda County Fire Stations in Castro Valley to serve as an Emergency Operations Center in the event of a major earthquake or fire.
Action 9.2-6	**Coordination in Developing Disaster Plans.** Coordinate with the Castro Valley, Hayward, and San Lorenzo Unified School Districts, Eden Medical Center Castro Valley, and other major public and private agencies and organizations, including agencies that serve seniors, persons with disabilities, non-English speakers and others who may need special support during an emergency, to develop and implement an effective disaster plans for Castro Valley.
Action 9.2-7	**Hazard Mitigation Strategies.** Adopt high priority strategies identified in ABAG's multi-jurisdictional Hazard Mitigation Plan as an annex to ABAG's multi-jurisdictional plan.
Action 9.2-8	**Emergency Access Capacity.** Identify and categorize streets where public safety response and emergency access are deficient due to street width or lack of parking controls. Identify projects and funding sources to improve or mitigate the deficient conditions.
Chapter 10, Natural Hazards and Public Safety, Section 10.1, Fire Hazards	
Goal 10.1-1	*Protect lives, property, and the environment by working with Alameda County Fire Department to reduce fire hazards.*
Policy 10.1-1	**Wildland Fire Preparedness.** Increase preparedness for and reduce impacts from wildland fires.
Action 10.1-2	**Fire Department Role in Development Review Process.** Establish clearly in County zoning and other ordinances that the Fire Department has the authority to recommend denial or modification to proposed development projects, particularly for projects proposed within Very High Fire Zone Areas as identified in Figure 10-1, *Fire Hazards*, to reduce the risk of bodily harm, loss of life, or severe property damage and environmental degradation.
Action 10.1-3	**Fire Department Requirements for New Development.** Establish clearly in County zoning and other ordinances that the Fire Department may require the use of appropriate fire resistant building materials, installation of fire sprinklers, and/or vegetation management, and that such requirements shall be based on a property's access, slope, water pressure, and proximity to wildland areas. Such requirements shall apply particularly to projects proposed within Very High Fire Zone Areas as identified in Figure 10-1, *Fire Hazards*, but may also apply to other properties where access for emergency vehicles does not fully comply with adopted standards.
Action 10.1-4	**Interdepartmental Review Process.** Establish an interdepartmental review process for proposed projects where Fire, Public Works, Planning, and other County Departments consult and establish reasonable and consistent requirements for streets, driveways, and emergency access prior to zoning approval.
Action 10.1-5	**Water Pressure/Emergency Vehicle Access Requirements for Increased Densities.** Revise the review process. For any project that proposes an increase in density so that any inadequacy of water pressure for fire hydrants and fire flows for fire suppression purposes is identified early in the development review process. Also identify if the roadway serving the project is deficient in terms of access for emergency vehicles. Identify any access improvements that may be required, for example roadway widening along property frontage, or additional off-street parking.
Action 10.1-6	**Standardization of Fire Hydrants.** Upgrade and standardize fire hydrants to accept equipment from neighboring fire districts so that the County can accept assistance through a mutual aid request during an

No.	Goal / Policy / Action
	emergency.
Action 10.1-7	**Fire Suppression Water Services Master Plan.** Work with EBMUD to conduct a comprehensive study of water pressure, fire flows, hydrant spacing and type in Castro Valley and create a "Master Plan for Fire Suppression Water Services" in order to identify the need for hydrant upgrades, additional hydrants, and pipeline upgrading or replacement for fire-fighting purposes. The study shall establish a capital improvements program and appropriate development impact fees to help fund replacement of inadequate pipes. The Master Plan should focus on the following areas in Castro Valley that have been identified as areas that may have inadequate water pressure for fire-fighting purposes on some streets: • Areas designated Residential Mixed Density (RMX) on the General Plan Land Use Map where additional medium density infill residential development is anticipated; • Subareas in the Central Business District where medium to high-density residential uses are designated and infill development is encouraged; • Areas where major renovation, expansion or rebuilding of large facilities are occurring such as Eden Medical Center Castro Valley.
Action 10.1-11	**Public Street Requirements for Subdivisions.** In coordination with the Fire Department, Public Works Agency and after consultation with the CVMAC, set standards for public streets to address safety and access concerns.
Action 10.1-12	**Standard Requirements for Private Streets.** Establish consistent standards for private streets depending on the number of units that the street will serve the number of required parking spaces per unit, and reasonable access requirements and operational needs of emergency access vehicles and garbage trucks. Standards should include: • Minimum paved roadway width requirements (i.e., 20 feet for roads serving five or more units or when part of required fire apparatus access, and 12 feet for roads serving between two and five units that is not part of required fire apparatus access); • Turnarounds; • Landscaping; • Red curbs and signage for no parking zones; • Sidewalks; and • Parking standards.
Action 10.1-13	**Emergency Access Requirements for Hillside Areas.** In hillside areas where street widths are substantially below the minimum 20-foot width standard required for emergency access, such as Upper Madison Avenue/ Common Road and Hillcrest Knolls, one or more of the following requirements should be imposed to ensure adequate emergency access: • Sprinklers; • Turnouts along the paved roadway; • Additional on-site parking; • Increased roadway width along the front of the property; or • Parking Restrictions.

Source: Alameda County Community Development Agency, March 2012, *Castro Valley General Plan*.

Alameda County Municipal Code

Chapter 6.04 of the Alameda County Municipal Code is the Alameda County Fire Code, which adopts the CFC amended in parts for Alameda County. In addition, Chapter 15.08 is the Alameda County Building Code, which adopts and amends in part the CBC, and Chapter 6.114 covers Alameda County Emergency Medical Services.

4.11.1.2 EXISTING CONDITIONS

Fire Protection Services

Fire protection services for the Castro Valley area where the project site is located, and for all of unincorporated Alameda County, is the Alameda County Fire Department (ACFD). There are four ACFD stations in Castro Valley, and 29 throughout the County.[1] Many of the cities in Alameda County also have city-specific fire departments. Under the Alameda County Mutual Aid Plan, the ACFD may request mutual aid from other fire departments in the County.[2]

The ratio of fire and paramedic personnel to general population is higher in Castro Valley than in Alameda County as a whole. In terms of square mile coverage, Castro Valley has an average coverage of 7.6 square miles per station compared to the countywide median of 3.7 square miles per station. According to the Castro Valley General Plan, the ACFD responds to 81 percent of its calls for fire and medical emergencies in 3 minutes, or less, which is higher than the 4:53 minute median for all fire departments in the county and exceeds the National Fire Protection Association guideline of a 6-minute response at least 90 percent of the time.[3] In the time since the Castro Valley General Plan was adopted, it is likely that response times have changed.

The nearest ACFD facility to the project site is Alameda County Fire Station Number 6, located at 19780 Cull Canyon Road, roughly 3 miles south of the project site.

Police Protection Services

Police protection services to unincorporated Alameda County is provided by the Alameda County's Sheriff's Office. Alameda County's Extended Police Protection County Service Area, which is administered by the Sheriff's Office, was established by the Alameda Local Agency Formation Commission (LAFCO) in as a dependent special district to supplement funding for police services in the unincorporated area. The California Highway Patrol is responsible for enforcing the State Vehicle Code in Castro Valley, including traffic and parking, and operates a community patrol in Castro Valley.[4]

The nearest police facility to the project site is the Alameda County Sheriff's Office Eden Township Substation, located at 15001 Foothill Boulevard in San Leandro, approximately 5 miles southwest of the project site. Emergency dispatch services, including 911 call receiving and patrol dispatch, are provided by this substation. The Castro Valley General Plan indicates that as of 2012, the substation was overcrowded and inadequate to meet the Sheriff's Office's needs, and that the Sheriff's Office proposed consolidating its existing law enforcement facilities in a new facility.[5]

[1] Alameda County Fire Department, About Us, https://fire.acgov.org/AboutUs/aboutus.page?, accessed January 19, 2021.
[2] Castro Valley General Plan, 2012, Chapter 9 Public Services and Utilities, page 9-9.
[3] Castro Valley General Plan, 2012, Chapter 9 Public Services and Utilities, page 9-9.
[4] Castro Valley General Plan, 2012, Chapter 9 Public Services and Utilities, page 9-10.
[5] Castro Valley General Plan, 2012, Chapter 9 Public Services and Utilities, page 9-10.

According to the Castro Valley General Plan, average response times for the Sheriff's Office are 11:48 minutes for calls requiring an immediate emergency response and 17:13 minutes for nonemergency calls requiring an urgent response. This is higher than the 4:25 median emergency response time for all Alameda County police service providers. The Sheriff's Office staffing levels are lower than countywide with 1.4 sworn officers per 1,000 residents compared with 1.6 per 1,000 residents for all county police service providers. Since the adoption of the Castro Valley General Plan in 2012, it is likely that response times have changed.

4.11.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant public services impact if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.
2. Result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.
3. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to fire protection or police protection services.

4.11.3 IMPACT DISCUSSION

PS-1	**The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.**

The Alameda County Fire Department would provide primary fire protection services for the proposed project. The proposed project would add a maximum of 119 people on-site at a given time, including students, counselors, and permanent residents (e.g., site caretaker). The amount of people on-site would fluctuate throughout the year depending on when programs are in session. As described in Chapter 3, *Project Description*, of this Draft EIR, most occupants would be on-site temporarily during one of the 23 5-day programs or 12 weekend programs per year. Counting 3 days for the weekend programs, this amounts to 151 days per year (about 41 percent of the time) that would have the maximum or close to the maximum number of people on-site. The rest of the time would be in-between programs in which only staff and the on-site caretakers may be on-site, dramatically reducing the on-site population. The overall

increased population on-site in comparison with existing conditions could result in an increased demand on ACFD services. However, the proposed project does not introduce significant new populations into the region, as camp-goers would be students from the Bay Area, and some if not all of the employees would likely come from the region as well.

The proposed project would be required to comply with the County's Municipal Code, which sets forth the standards for building and construction in unincorporated Alameda County under Chapter 6.04 and 15.08 (for the Fire Code and Building Code, respectively). These codes include standards for building and construction in the city, permit processes, and requirements for emergency access, hazardous material handling, and fire protection systems. Compliance with these codes would reduce the need for fire protection services by reducing the risk of a need for emergency fire protection services.

As described in Section 4.11.1.2, *Existing Conditions*, the ACFD was described in 2012 in the Castro Valley General Plan as exceeding the NFPA guidelines for response time, indicating an adequate level of capabilities. In the time since the General Plan was adopted, it is possible that response times have changed. The Alameda County Mutual Aid Plan helps participating agencies respond to emergencies by supplying mutual aid between them; Alameda County may request aid from other participating fire departments within the County if it does not have capacity to respond to an emergency. The proposed project is also located in close proximity (3 miles) to the nearest ACFD facility, and therefore would not require expanding the ACFD's territory or require a new facility in order to serve the area.

Chapter 3, *Project Description*, lists the strategies included in the proposed project's Fire Safety and Emergency Response Plan (also included as Appendix F of this Draft EIR), which include fire prevention measures, staff training and drills, signage and documentation (e.g., emergency numbers posted, buildings posted with fire evacuation procedures, etc.), and evacuation preparation and procedures. The Emergency Response Plan would require that camp sessions are canceled during Red Flag Warning days (times of high fire danger, declared by the National Weather Service), emergency drills are held at the beginning of each camp session, and all staff are trained in safe evacuation and notification procedures. The Mosaic Project has partnered with the Castro Valley Unified School District to supply school buses in the event of an evacuation. Adherence to the Fire Safety and Emergency Response Plan would increase the proposed project's ability to respond quickly and safely in the event of an emergency and site evacuation, which would help local responders to efficiently respond to an emergency.

The proposed project would result in a significant impact to fire protection services if it were to require the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. Due to the size and nature of the proposed project as an outdoor recreation facility with temporary occupants and limited physical impact, and the fact that the project would not introduce substantial populations into the region, the proposed project would not require the County to need new or physically altered fire protection facilities, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

PS-2 The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.

As described in impact discussion PS-1, the proposed project would add more people on-site than currently exist, which could increase the likelihood that police services would be needed on-site. However, the amount of people on-site would fluctuate throughout the year depending on when programs are in session; the most amount of people on-site would be up to 119, occurring during one of the 23 5-day programs or 12 weekend programs per year. In-between programs, site occupants would be limited to staff and the on-site caretakers. Additionally, the proposed project would not introduce new populations into the area, as it would serve students in the area, and would therefore not introduce substantial new populations that the Alameda County Sheriff's Office would need to serve. The proposed project is also located in close proximity (5 miles) to the nearest Sheriff's office, and therefore would not require expanding the Sheriff's Office territory or require a new facility in order to serve the area.

Because the proposed project would not introduce new populations into the region as a whole, it would not require police services to expand facilities, the construction of which could cause significant environmental impacts. Therefore, impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

PS-3 The proposed project would not combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to fire protection or police protection services.

As listed in Chapter 4, *Environmental Analysis*, of this Draft EIR, the cumulative setting for fire protection and police services takes into account growth resulting from the proposed project in combination with estimated growth in the services areas of each service provider. The ACFD and the Alameda County Sheriff's Office are the primary fire protection and police service providers for unincorporated Alameda County, and the service areas for both are Alameda County. Overall growth in Alameda County will continue to increase through 2050, which would require increased resources for fire protection and police services.[6]

As described in impact discussions PS-1 and PS-2, the proposed project would not create a need for new or physically altered fire protection or police facilities, as the proposed project would comply with applicable regulations pertaining to fire safety (such as those in the CBC, CFC, and Alameda County

[6] Association of Bay Area Governments and Metropolitan Transportation Commission, 2020, Plan Bay Area 2050 Growth Pattern, https://www.planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed May 28, 2022.

Municipal Code), establish an emergency response protocol with regular staff training and drills, and would not expand the population or area which the ACFD or Sheriff's Office serve. Despite overall growth within the County, based on the fact that the proposed project would serve existing populations, it would therefore not contribute to a cumulative impact to police or fire protection services, which typically require physical expansion of facilities in order to expand services to a greater population or area. Therefore, the proposed project would not result in a cumulative impact, and the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

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4.12 TRANSPORTATION

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

4.12.1 ENVIRONMENTAL SETTING

4.12.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Highway Administration

The Federal Highway Administration (FHWA) is the agency of the United States (US) Department of Transportation (DOT) responsible for the federally funded roadway system, including the interstate highway network and portions of the primary State highway network, such as Interstate 280 (I-280) located approximately 1.5 miles west of the project site.

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the US Access Board, an independent federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights of way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. These guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, public transit, and other components of public rights of way.

State Regulations

California Complete Streets Act of 2008 (AB 1358)

Originally passed in 2008, California's Complete Streets Act took effect in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs.

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law.[1] The Legislature found that with the adoption of the Sustainable Communities and Climate Protection Act of 2008 (SB 375), the State had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas emissions (GHG), as required by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB 32]). Additionally, AB 1358, described above, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. To further the State's commitment to the goals of SB 375, AB 32, AB 1358, and SB 743 added Chapter 2.7, *Modernization of Transportation Analysis for Transit-Oriented Infill Projects*, to Division 13 (Section 21099) of the Public Resources Code.

Title 24

The State of California provides a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations (CCR). The CBC is based on the International Building Code, but has been modified for California conditions. The CBC provides fire and emergency equipment access standards for public roadways in Part 9, Appendix D. These standards include specific width, grading, design, and other specifications for roads, which provide access for fire apparatuses; the CBC also indicates which areas are subject to requirements for such access.

The CBC also incorporates by reference the standards of the International Fire Code (IFC). The California Fire Code (CFC) contains provisions related to emergency vehicle access, including requirements for roadway design, fire hydrants, and other relevant design features. Pursuant to CFC Section 503.1.2, the fire code official is authorized to require more than one fire access road based on the potential for a single access road to be impaired by congestion, condition of terrain, climatic conditions, or other factors that could limit access.

Local Regulations

Castro Valley General Plan

Alameda County includes several documents that make up its General Plan. The project site is located in the Castro Valley Area, which is covered in the Castro Valley General Plan, finalized in March 2012. Goals, policies, and actions pertaining to transportation are included in Chapter 6, *Circulation*, of the Castro Valley General Plan. Table 4.12-1, *Castro Valley General Plan Policies Relevant to Transportation*, lists the relevant goals, policies, and actions for transportation.

[1] An act to amend Sections 65088.1 and 65088.4 of the Government Code, and to amend Sections 21181, 21183, 21186, 21187, 21189.1, and 21189.3 of, to add Section 21155.4 to, to add Chapter 2.7 (commencing with Section 21099) to Division 13 of, to add and repeal Section 21168.6.6 of, and to repeal and add Section 21185 of, the Public Resources Code, relating to environmental quality.

TABLE 4.12-1 CASTRO VALLEY GENERAL PLAN POLICIES RELEVANT TO TRANSPORTATION

Goal/Policy/Action Number	Goal/Policy/Action Text
Goal 6.1-1	*Provide a safe, efficient, multi-modal transportation system to meet the diverse needs of Castro Valley residents, workers, businesses, and visitors.*
Policy 6.1-1	**Comprehensive Circulation System.** Provide a comprehensive system of transportation facilities that includes: streets and highways for regional access; transit facilities; a continuous network of pedestrian sidewalks and bicycle routes; and transportation and parking management programs and measures to encourage the efficient use of these facilities and services.
Policy 6.1-4	**Balance Circulation Modes.** Balance the needs of all four circulation modes-– automobile, transit, bike and pedestrian--when making decisions about transportation improvements and allocation of public right of way.
Action 6.1-1	**Project Impacts on All Modes of Travel.** When reviewing development proposals and determining conditions of approval or environmental impact mitigations, consider the needs of and level of service for all travel modes: automobile, pedestrian, transit and bicycle.
Action 6.1-2	**Circulation Analysis.** As more sophisticated and reliable methodologies are developed for evaluating transportation impacts on pedestrians, transit, and cyclists: • revise the County standard method of traffic impact analysis to include such measures, and • reduce the significance threshold for impacts to auto levels of service on streets where the County wants to prioritize pedestrians, transit, and bicycles.
Goal 6.2-1	*Reduce roadway congestion and implement improvements to minimize visual, noise, air quality, and traffic congestion impacts on the Castro Valley community.*
Policy 6.2-1	**Vehicular Circulation Level of Service.** Adopt and implement the following Level of Service Policy: An LOS of E or better shall be applied to Congestion Management Program (CMP) Roadways: Castro Valley Boulevard, Center Street, Grove Way, Crow Canyon Road, and Redwood Road. An LOS of D or better shall be applied to all non-CMP roadways during peak travel periods. The County may allow individual locations to fall below the LOS standards in the following instances: • The construction of improvements would be physically infeasible or prohibitively expensive • Improvements would significantly and adversely affect adjacent properties or the environment, or have a significant adverse effect on the character of Castro Valley • Lower standards result from significant physical improvements to transit, bicycle or pedestrian facilities. • Existing or projected congestion is primarily the result of traffic passing through Castro Valley and generated by development located outside the community; • Mitigation of such existing or projected congestion requires regional or multi-jurisdiction measures, and is not the sole responsibility of the proposed development and/or of the County; and • Constraints on development as would be required to achieve or maintain these standards in Castro Valley would adversely impede achievement of this Plan's social economic, land use and community development, and environmental goals and policies. • Mitigation of such existing or projected vehicular congestion would negatively affect transit, bicycle or pedestrian circulation, or would conflict with General Plan goals for these alternative modes of circulation, for example by increasing crossing distances, increasing pedestrian safety risk, or restricting bicycle or transit access. • Traffic congestion is a result of an effort to promote transit ridership and/or access, including the development of dense residential housing or employment near transit or circulation changes to enhance access to BART. • On a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.
Policy 6.2-2	**Reduce Local Impacts of Regional Traffic.** Work with the Alameda County Transportation Commission, the Metropolitan Transportation Commission, Caltrans, and surrounding jurisdictions to develop and implement regional solutions to local traffic problems created by growth outside of Castro Valley.
Policy 6.2-3	**Improve Traffic Circulation.** Improve traffic circulation by improving intersections and facilitating vehicular circulation without negative impacts on pedestrian, bicycle, or circulation.

Goal/Policy/Action Number	Goal/Policy/Action Text
Action 6.2-1	**Use of Revised Level of Service Policy in Environmental Review.** Use the revised level of service policy for vehicular circulation in the environmental review of all projects.
Goal 6.5-1	*Expand and improve local bikeway connections and provide a safe environment for bicycle travel throughout the community.*
Policy 6.5-1	**Comprehensive Bikeway System.** Provide a comprehensive bikeway system that is coordinated with existing and planned major destinations, community activity centers, transit stations, and schools in Castro Valley and adjoining communities.
Policy 6.5-2	**Regional Bicycle Corridors.** Implement the regional bicycle corridors identified in the Alameda County Bicycle Master Plan for Unincorporated Areas and the Countywide Bicycle Plan.
Action 6.5-1	**Revise County Road Standards for Bicycles.** Review and, as required, revise County road standards to accommodate bicycle routes consistent with this Plan and the Countywide Bicycle Plan.
Action 6.5-3	**Bicycle Parking and Storage.** Consider amending the County Zoning Ordinance to include regulations regarding the provision of bicycle and pedestrian facilities such as weather protected bicycle parking, direct and safe access for pedestrians and bicyclists to adjacent bicycle routes and transit stations, secure short-term parking for bicycles, and to the extent feasible encourage provision of showers and lockers for employees at worksites.
Action 6.5-5	**Development Review Guidelines for Bicycle Access.** Establish guidelines to be used when reviewing development proposals to ensure that site plans and facilities are designed to encourage bicycle use and do not create unsafe conditions for bicyclists.
Action 6.5-6	**Implement Countywide Bicycle Plan Design Standards.** Use the Alameda Countywide Bicycle Plan's design guidelines and best practices or comparable criteria when designing the streetscape improvements.
Goal 6.6-1	*Provide a safe and attractive walking environment accessible for all users, particularly disabled users, seniors, transit users, and children.*
Policy 6.6-1	**Implement the Alameda County Pedestrian Master Plan.** Implement the Alameda County Pedestrian Master Plan for Unincorporated Areas policies and actions for enhanced pedestrian environments in Castro Valley.
Policy 6.6-2	**Improve Pedestrian Facilities on Busy Streets.** Provide safe and attractive pedestrian facilities along arterials and collectors particularly those that are part of the Pedestrian Activity Corridors, as identified in the Alameda County Pedestrian Master Plan for Unincorporated Areas.
Policy 6.6-3	**Maintain Pedestrian Facilities.** Pedestrian facilities and amenities shall be routinely maintained as funding and priorities allow. The highest priority shall be given to facilities that are used to provide access to transit, public facilities, senior facilities, and schools.
Policy 6.6-4	**Increased Enforcement for Pedestrian Safety.** Improve street design and traffic enforcement to increase pedestrian safety.
Policy 6.6-5	**New Development to Incorporate Pedestrian Facilities.** Design new development and redevelopment projects to facilitate pedestrian access and address any impacts to the pedestrian safety, access, and circulation.
Policy 6.6-6	**Pedestrian Priority for Sidewalk Space.** When dealing with competing demands for sidewalk space, pedestrian needs shall have the highest priority
Action 6.6-5	**Pedestrian Crosswalk Safety.** Consider installing pedestrian crosswalk "runway" lights in the pavement at heavily-used and dangerous pedestrian crossings.
Action 6.6-6	**Pedestrian Walkways** • Continue to require installation of sidewalks and physically-demarcated walkways in new development. • Exceptions may be allowed in hillside neighborhoods where the character of the neighborhood and width of street cannot accommodate sidewalks. In these areas, determine and implement adequate safety measures for pedestrians.

Source: Castro Valley General Plan, 2012

Alameda County Congestion Management Program

The Alameda County Congestion Management Program (CMP) identifies countywide strategies to respond to future transportation on needs and procedures to reduce congestion.[2] The CMP identifies existing and desired traffic conditions on a variety of roadways throughout the county. All freeways and state highways, and selected arterial roadways, are designated elements of the CMP Roadway System. The two nearest CMP roadways to the project site are I-580 and Crow Canyon Road.

Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas

The 2019 Alameda County Bicycle and Pedestrian Master Plan (BPMP) for Unincorporated Areas is an update to the 2012 version.[3] The 2019 BPMP is required by the Alameda County Transportation Commission and is required to be updated every 5 years. The BPMP aims to achieve a safe, connected bicycle and pedestrian network in the unincorporated areas. The BPMP captures current best practices in pedestrian and bicycle facilities design since the previous update and continues to improve bicycle and pedestrian networks for active transportation.

4.12.1.2 EXISTING CONDITIONS

Roadways and Intersections

Roadways near the project site are shown on Figure 3-1, *Regional Location*, and on Figure 3-2, *Local Context,* in Chapter 3, *Project Description*.

- Cull Canyon Road runs along the frontage of the project site. Cull Canyon Road generally runs north-south and is classified as a local road. Along the project frontage, the road has one ten-foot lane in each direction. According to the Focused Traffic Study for the Mosaic Project prepared by W-Trans and dated April 5, 2022, the roadway carries an average of about 210 daily vehicles in both directions, for a total of 420 vehicles per day.[4]
- Interstate 580 (I-580) provides regional access to the vicinity of the project. I-580 at Grove Way is a freeway with four westbound lanes and five eastbound lanes.
- I-680 provides regional access to the vicinity of the project. I-680 at Crow Canyon Road is a freeway with five northbound lanes and five southbound lanes.

Bicycle and Pedestrian Facilities

The portion of Cull Canyon Road near the project site does not have sidewalks or bike lanes.

[2] Alameda County Transportation Commission, September 2019. *Congestion Management Program*, https://www.alamedactc.org/wp-content/uploads/2019/09/2019_Alameda_County_CMP.pdf, accessed June 15, 2022.

[3] Alameda County Public Works Agency, October 2019. *Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas*, https://www.acpwa.org/acpwa-assets/docs/programs-services/streets-roads/2019_Bicycle_and_Pedestrian_Master_Plan_FINALSIjs.pdf

[4] W-Trans, April 5, 2022. *Focused Traffic Study for the Mosaic Project*.

Public Transit

The project site is not served by public transportation and there are no public transit stops nearby.

4.12.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant transportation impact if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.
5. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to transportation.

4.12.3 IMPACT DISCUSSION

TRAN-1	**The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.**

Roadway Impacts

Access to the project site would be provided via two existing driveways on Cull Canyon Road. Buses and other vehicles would enter the site via the northerly driveway and exit the site from the southerly driveway. Only staff service vehicles would use the bridge to access the multipurpose building and facilities on the east side of Cull Creek.

Project operation would generate trips seasonally during the school year with six camp sessions in the fall and six camp sessions in the spring. Students are anticipated to arrive by bus at 11:30 a.m. Monday morning and depart at 1:30 p.m. Friday afternoon, which would generate a peak of 51 daily trips.

The two nearest CMP roadways to the project site are I-580 and Crow Canyon Road. Crow Canyon Road, designated a major arterial in the Castro Valley General Plan, passes about 1.3 miles east of the project site and extends northeast south toward unincorporated Castro Valley and northeast toward San Ramon City in Contra Costa County.[5] I-580 at Crow Canyon Road carried average daily traffic volumes of 175,000

[5] Alameda County Community Development Agency, March 2012. *Castro Valley General Plan*, https://www.acgov.org/cda/planning/generalplans/documents/CastroValleyGeneralPlan_2012_FINAL.pdf, accessed June 15, 2022.

eastbound and 163,000 westbound in 2020, the latest year for which data are available.[6] Thus, project generate trips would be a negligible fraction of traffic volumes on I-580. Therefore, impacts to CMP roadways would be *less than significant*.

Significance Without Mitigation: Less than significant.

Pedestrian, Bicycle Facilities, and Public Transit Impacts

There are no sidewalks or bike lanes on any of the roadways near the project site. Within the area, bicyclists ride in the roadway on Cull Canyon Road, as existing roadway shoulders do not provide adequate access for bicyclists. The Alameda County BPMP for Unincorporated Areas does not specify or recommend any future bike lanes in the project vicinity.[7] There are no transit facilities serving the project site. Given the remoteness of the project site, it is reasonable to assume that all visitors will travel to and from the site by private automobile or bus. Therefore, there would be *no impact* with respect to conflict with pedestrian, bicycle facilities, or public transit programs and policies.

Significance Without Mitigation: No impact.

TRAN-2 The proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

Project-related VMT impacts were assessed based on Guidance provided by the California Office of Planning and Research (OPR) in the publication of the 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*.[8] The proposed project is expected to generate a peak of 51 daily trips, which satisfies the OPR threshold of 110 trips.[9] Therefore, impacts will be less than significant.

Significance Without Mitigation: Less than significant.

TRAN-3 The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Access to the project site would be provided via two existing driveways intersecting Cull Canyon Road. The intersections would be at right angles and their designs would not create hazards. Under existing

[6] California Department of Transportation. 2022. 2020 Traffic Volumes: Annual Average Daily Traffic (AADT) for ALL vehicles on California State Highways, https://dot.ca.gov/programs/traffic-operations/census, accessed June 15, 2022.

[7] Alameda County Public Works Agency, October 2019. *Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas*, https://www.acpwa.org/acpwa-assets/docs/programs-services/streets-roads/2019_Bicycle_and_Pedestrian_Master_Plan_FINALSIjs.pdf

[8] California Governor's Office of Planning and Research, December 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*, https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed June 15, 2022.

[9] W-Trans, April 5, 2022. *Focused Traffic Study for the Mosaic Project*.

conditions with the addition of project-related trips, a left-turn lane is not warranted on Cull Canyon Road at the project driveway.[10]

Sight distances along Cull Canyon Road at the project driveways were field measured as well as reviewed on online aerial photographs by W-Trans.[11] The California Department of Transportation's recommended sight distance at minor street approaches that are a driveway is based on stopping sight distance, which uses the approach travel speeds as the basis for determining the recommended sight distance. At the northerly driveway, the clear sight distance is about 420 feet to the north and 460 feet to the south, which is adequate for speeds up to 45 miles per hour (mph) and 50 mph, respectively. At the southerly driveway, sight lines are about 315 feet to the north and 240 feet to the south, which is adequate for speeds up to 40 mph and 30 mph, respectively. Based on the posted speed limit of 30 mph, the sight distances at both the northerly and southerly driveways are adequate.

The proposed project would provide 15 parking spaces at various locations around the site. The maximum number of parking spaces needed on site would be during the mid-week period, after student drop-off and prior to student pick-up, and does not include the buses or vans that would drop off students and staff on site and then leave the site. During this time, there would typically be 12 staff on site. Assuming one employee per vehicle and two teacher and aid private vehicles, the estimated parking demand would be 14 spaces. If the parking demand exceeded parking supply, motorists likely park on the shoulder of Cull Canyon Road or in tandem with other vehicles on-site. Parking on the shoulder of Cull Canyon Road would limit sight distance and increase hazards. However, the proposed parking supply on-site would meet demand.

Because the proposed project would not substantially increase hazards due to a geometric design feature, impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRAN-4 The proposed project would not result in inadequate emergency access.

On site-circulation was evaluated to determine if the layout would provide adequate circulation and room for vehicles maneuvering through the property. As discussed in Chapter 3, *Project Description*, the proposed project has established an emergency evacuation agreement with the Castro Valley Unified School District where the district would provide two available school buses to evacuate 50 individuals per school bus. Therefore, school bus and fire truck turning template analyses were conducted to evaluate whether a 38-foot-long school bus and a 31-foot-long fire truck would be able to enter, maneuver within, and exit the site. The analyses demonstrated that a school bus and fire truck would have sufficient space to enter from the northerly driveway, maneuver within the project site, and exit from the southerly driveway without striking any permanent fixtures.

[10] W-Trans, April 5, 2022. *Focused Traffic Study for the Mosaic Project*.
[11] W-Trans, April 5, 2022. *Focused Traffic Study for the Mosaic Project*.

As discussed above in TRAN-3, the proposed project would have sufficient parking supply to meet demand. If parking demand exceeded parking supply, motorists would be anticipated to park on the shoulder of Cull Canyon Road or in tandem with other vehicles on-site, which could result in inadequate emergency access. However, the proposed project would have adequate parking on-site as described above and as shown in Appendix I, *Focused Traffic Study*.

The proposed project would not result in inadequate emergency access, and impacts would be *less than significant.*

Significance Without Mitigation: Less than significant.

TRAN-5	**The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to transportation.**

A cumulative VMT analysis is not required for CEQA pursuant to OPR's 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA. Therefore, a cumulative transportation impact assessment is not provided regarding consistency with CEQA Guidelines Section 15064.3(b).

As discussed in Chapter 4, *Environmental Analysis*, there are no current projects within the vicinity of the proposed project. The nearest project is 1.4 miles away, and other projects are 4 miles away or farther. The cumulative setting for traffic and circulation applies the regional transportation demand model and incorporates regional growth projections to the transportation network in Alameda County and the proposed project. Because the proposed project is anticipated to generate a peak of only 51 daily trips, it would not considerably contribute to the regional growth projection to the transportation network in Alameda County. Furthermore, the proposed project would have adequate parking supply.

Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less-than-significant* cumulative impact with respect to transportation.

Significance Without Mitigation: Less than significant.

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4.13 TRIBAL CULTURAL RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to tribal cultural resources, and the potential impacts of the proposed project on tribal cultural resources. Other potential impacts to cultural resources (i.e., prehistoric, historic, paleontological, and disturbance of human remains) are evaluated in Section 4.4, Cultural Resources.

4.13.1 ENVIRONMENTAL SETTING

4.13.1.1 REGULATORY FRAMEWORK

This section summarizes existing federal, State, and local policies and regulations that apply to tribal cultural resources in Alameda County.

Federal Regulations

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (United States Code, Title 16, Sections 470aa–mm) became law on October 31, 1979, and has been amended four times. It regulates the protection of archaeological resources and sites that are on federal and Indian lands.

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

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

State Regulations

California Health and Safety Code

California Health and Safety Code Section 7052 states that it is a felony to disturb Native American cemeteries. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

California Public Resources Code

Archaeological resources are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code (PRC). In addition, cultural resources are recognized as a nonrenewable resource and therefore receive protection under the California PRC and CEQA.

California Public Resources Code 5097.9–5097.991 provides protection to Native American historical and cultural resources, and sacred sites and identifies the powers and duties of the NAHC. It also requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods.

Assembly Bill 52

Assembly Bill (AB 52), the Native American Historic Resource Protection Act, sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2016. AB 52 adds TCRs to the specific cultural resources protected under CEQA. Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register, or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

Local Regulations

Castro Valley General Plan

The Alameda County General Plan consists of three area plans, which contain goals, policies, and actions for circulation, land use, open space, conservation, safety, and noise for their respective geographic areas. The proposed project is located within the planning area for the Castro Valley General Plan. Table 4.13-1 lists policies from the Community Character and Design chapter of the Castro Valley General Plan regarding cultural resources that are relevant to the proposed project.[1]

TABLE 4.13-1 RELEVANT CASTRO VALLEY GENERAL PLAN CULTURAL RESOURCES POLICIES

Policy No.	Text
Goal 5.6-1	Protect historic sites and structures and other cultural resources that help to maintain the special character and identity of Castro Valley and represent important physical connections to the community's past.

[1] Alameda County Community Development Agency Planning Department, March 2012. Castro Valley General Plan, Chapter 4, Land Use and Development, https://www.acgov.org/cda/planning/generalplans/documents/Chapter-4-Land-Use-and-Development.pdf, accessed January 5, 2022.

Policy No.	Text
Policy 5.6-1	Preserve Designated Historic Sites. Protect and preserve Federal and State-designated historic sites, structures, and properties that are deemed eligible for designation to the maximum extent feasible.
Policy 5.6-2	Cultural Resources Protection Strategies. Establish appropriate strategies to protect local cultural resources that do not qualify for designation as historic resources but reflect Castro Valley's history and traditions.
Policy 5.6-3	Consider Cultural Resources in Development Review Process. Integrate consideration of historical and cultural resources into the development review process to promote early resolution of conflicts between cultural resources preservation and other community goals and objectives.

Alameda County Code of Ordinances

The Alameda Municipal Code contains all ordinances for the County. Chapter 16.62 of the Alameda County Municipal Code, the Historic Preservation Ordinance, identifies, protects, and ensures the preservation of significant architectural, historic, prehistoric, and cultural structures, sites, resources, and properties in the county. The ordinance also qualifies the County as a Certified Local Government under the National Historic Preservation Act. This recognition would allow the Commission to review and comment on projects subject to Section 106 of the Federal act.

4.13.1.2 EXISTING CONDITIONS

The County notified tribal representatives about the proposed project and asked for information about potential resources at or near the project site. Tribes traditionally and culturally affiliated with the geographic area include the Ohlone tribe. The County has not received information as of publication of the Draft EIR indicating presence of known tribal cultural resources on-site.

4.13.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant tribal cultural resource impact if it would:

1. Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:
    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency will consider the significance to a California Native American tribe.
2. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to tribal cultural resources.

4.13.3 IMPACT DISCUSSION

TCR-1	**The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: (a) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or (b) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency will consider the significance to a California Native American tribe.**

The proposed project would result in a substantial adverse change in the significance of a tribal cultural resources if it altered resources listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources or a resource determined to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. As discussed in Chapter 4.4, *Cultural Resources*, no sensitive resources eligible for listing in the California Register of Historical Resources, or in a local register of historical resources have been recorded within the project site or within a half-mile radius.

The County began the consultation process under Public Resources Code (PRC) sections 21080.3.1 and Government Code Section 21084.3(c) (commonly known as Assembly Bill [AB] 52) by contacting the Native American Heritage Commission (NAHC) to inform them about the proposed project and request a record search of the NAHC Sacred Lands File (SLF). The results of the SLF for the project site was negative, indicating that the NAHC does not have records of tribal cultural resources affiliated with the project site. A copy of the NAHC letter is included as Appendix J. The County contacted local tribal representatives by letter, inviting them to initiate consultation. The purpose of the letter was to inform tribes affiliated with the area of the project site of the project. The letter provided a description of the proposed project and the project location. As of publication of this Draft EIR, no responses have been received from the tribes.

The federal, State, and County historic registers do not indicate any site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe designated on the project site. Furthermore, the project site is not located within a historic preservation district, nor is it identified as a historic landmark.

However, it remains possible that a currently unknown tribal cultural resource could be encountered during construction activities. Without mitigation measures, unearthing tribal cultural resources could result in a significant impact. In the unlikely event that tribal cultural resources are unearthed on the

project site, Mitigation Measures CULT-2 and CULT-3 provided in Chapter 4.4, *Cultural Resources*, of this EIR would apply and include procedures to follow.

Significance Without Mitigation: Significant.

Impact TCR-1.1: Implementation of the proposed project may cause a substantial adverse change in the significance of a TCR, as defined in Public Resources Code Section 21074.

Mitigation Measure TCR-1.1: Implement Mitigation Measure CULT-2.

Significance With Mitigation: Less than significant.

Impact TCR-1.2: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Mitigation Measure TCR-1.2: Implement Mitigation Measure CULT-3.

Significance With Mitigation: Less than significant.

TCR-2 The proposed project, in combination with past, present, or reasonably foreseeable projects, would not result in a significant cumulative impact with respect to tribal cultural resources.

Cumulative impacts to tribal cultural resources occur when a series of actions leads to adverse effects on local Native American tribes or tribal lands. No tribal cultural resources have been identified on the project site or within the immediate vicinity at the time of publication of this Draft EIR. Further, in association with CEQA review, future AB 52 consultations with Native American tribes in order to identify Tribal Cultural Resources would be required for projects that have the potential to cause significant impacts to tribal cultural resources.

As discussed in Chapter 4.4, *Cultural Resources*, development of the proposed project would comply with federal and State laws protecting cultural resources. Implementation of Mitigation Measures TCR-1.1 and TCR 1.2 identified above would ensure that archaeological, cultural resources, and tribal cultural resources if discovered on the project site, are protected, and that discovered human remains, including those associated with Native American tribes are handled appropriately. Thus, given that the proposed project would have a *less than significant* impact on tribal cultural resources with mitigation, the proposed project's impacts to tribal cultural resources would not be considered cumulatively considerable. Therefore, cumulative impacts to tribal cultural resources would be *less than significant*.

Significance Without Mitigation: Less than significant.

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4.14 UTILITIES AND SERVICE SYSTEMS

This chapter describes the potential impacts of the proposed project related to utilities. Specifically, water supply, wastewater, stormwater, and solid waste are each addressed in separate sections of this chapter. Impacts regarding energy were scoped out in the Initial Study (Appendix A) as having no impact and therefore are not discussed in this section. A summary of the relevant regulatory settings and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

4.14.1 WATER

This section describes the existing regulatory setting and conditions as well as potential impacts of the proposed project regarding water collection and treatment facilities. The proposed project includes the installation of a public water system supplied by onsite groundwater wells, a water treatment system, and distribution piping.

4.14.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Safe Drinking Water Act

The Safe Drinking Water Act, the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since it came into law. The Act authorizes the United States Environmental Protection Agency (USEPA) to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Water Resources Control Board (SWRCB) conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.), passed in California in 1969 and amended in 2013, is the basic water quality control law for California. Under this Act, the SWRCB has authority over State water rights and water quality policy. This Act divided the State into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional levels. RWQCBs engage in various water quality functions in their respective regions and regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The project site is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

California Safe Drinking Water Act

The California Safe Drinking Water Act was enacted in 2015 and regulates the operation of public water systems. Most of the statutory authority for the regulation of drinking water is in the California Health and Safety Code. The responsibilities and duties for regulation of drinking water to protect public health have been delegated to the SWRCB. The SWRCB adopts primary drinking water standards for contaminants in drinking water that are based on an assessment of risk provided by the Office of Environmental Health Hazard Assessment (OEHHA). The regulation of public water systems includes: 1) the issuance of permits covering the approval of the water system design and operational procedures, 2) inspection of water systems, 3) enforcement of laws and regulations to ensure that all public water system routinely monitor water quality and meet current standards, and 4) assuring notification is provided to consumers when standards are not being met. The oversight responsibility for small public water systems with less than 200 service connections is delegated to the local county health departments.

Urban Water Management Planning Act (Senate Bills 610 and 221)

The California Urban Water Management Planning Act and Section 10620 of the Water Code requires that all urban water suppliers in California that provide water to more than 3,000 customers or supply more than 3,000 acre-feet (AF)[1] per year, prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. The Act is intended to support efficient use of urban water supplies. The Act requires the UWMP to compare water supply and demand over the next 20 years for normal years, dry years, and multiple dry years and to determine current and potential recycled water uses. SB 610 requires the preparation of a Water Supply Assessment (WSA) for certain types of projects subject to the California Environmental Quality Act (CEQA). The proposed project does not meet the criterion that would require preparation of a WSA.

Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881)

The Water Conservation in Landscaping Act (AB 1881) requires the State Department of Water Resources (DWR) to update the State of California's Model Water Efficient Landscape Ordinance (MWELO) by 2009. Under AB 1881, cities and counties are required to adopt the MWELO by January 31, 2010, or to adopt a different ordinance that is at least as effective in conserving water as the MWELO.

The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and to build resiliency for future droughts. The 2015 revisions to the MWELO increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf. Alameda County implements these requirements through the Bay Friendly/WELO County Ordinance.

State Water Resources Control Board, Division of Drinking Water

The SWRCB, Division of Drinking Water (DDW), is responsible for issuing water supply permits under the Safe Drinking Water Act. A project requires a new or amended water supply permit if it includes changes

[1] One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot.

to a water supply source, storage, or treatment. A public water system is defined as a system that provides water for human consumption that has 15 or more service connections or regularly serves at least 25 individuals daily for at least 60 days of the year. The proposed project meets the criterion as a new public water system and would require permits and approval from the DDW prior to the start of construction. The contact would be the San Francisco District Office of the SWRCB DDW.

California Building Code: CALGreen (Part 11, Title 24, CCR)

The California Building Standards Commission adopted the nation's first green building standards in July 2008, the California Green Building Standards Code (Part 11, Title 24), also known as CALGreen. CALGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure in California, unless otherwise indicated in the code. CALGreen establishes planning and design standards for sustainable site development, including water conservation measures and requirements that new buildings reduce water consumption by 20 percent below a specified baseline. The building efficiency standards are enforced through the local building permit process.

California Plumbing Code (Part 5, Title 24, CCR)

and the California Plumbing Code is updated on a three-year cycle. It includes standards for plumbing fixtures, provisions for storm drain systems, and design criteria for potable and recycled water systems. California's greywater code is found in Chapter 15 of the California Plumbing Code.

California Health and Safety Code

A portion of the California Health and Safety Code is dedicated to water issues, including testing and maintenance of backflow prevention devices and programs addressing cross-connection control by water users.

California Water Code

The California Water Code contains many statutes surrounding various water-related issues including water shortage emergencies, on-site sewage treatment systems, potable water reuse, greywater systems, appropriation of water, water rights, and the establishment of California water districts.

California Sustainability Groundwater Act (SGMA)

The Sustainable Groundwater Management Act (SGMA) of 2014 requires local agencies to form groundwater sustainability agencies (GSAs) for high and medium priority groundwater basins and also develop and implement groundwater sustainability plans (GSPs) to avoid overdraft of the groundwater basins and maintain sustainability over a 20-year period. The project site is not in a designated groundwater basin and therefore is not bound by the SGMA requirements.

California Code of Regulations for Organized Camps (17 CCR 30700 et seq.)

Title 17 in the California Code of Regulations (CCR), Subchapter 6, *Organized Camps,* discusses the regulatory requirements for organized camps. Article 2, *Utilities*, provides the requirements for water

supply and drinking water. Section 30710 states that a dependable supply of potable water adequate to furnish 50 gallons of water per person per day shall be available and if the water supply consists of groundwater wells, the wells shall be constructed in accordance with the requirements of California Bulletin 74-81, Well Water Standards, Chapter II and Appendices A, B, and C and California Bulletin 74-90, Well Water Standards, published by the Department of Water Resources. In addition, 17 CCR Section 30711 states that drinking water shall be provided and be centrally located in the camp.

Local Regulations

Alameda County Water Well Ordinance

Chapter 6.88, *Water Wells*, of the Alameda County Municipal Code (ACMC) describes the requirements for the construction, repair, reconstruction, and destruction of groundwater wells, including cathodic protection wells and exploratory holes. It also includes the destruction of abandoned wells so that these wells will not cause pollution or contamination of groundwater. The project site is within the jurisdiction of the Alameda County Public Works Agency (ACPWA), which is the administering agency for this area. If a project proposes to dig, drill, bore, drive, construct, reconstruct, deepen, or destroy a groundwater well on the property, the applicant must first apply for and receive a permit from ACPWA. A copy of the "Report of Completion" (Water Well Driller's Report, Department of Water Resources) must be submitted to the ACPWA within 30 days of the construction, alteration, or destruction of any well.

Alameda County Department of Environmental Health

The Alameda County Environmental Health Department (ACDEH), Land and Water Protection Division, also plays a role in ensuring that groundwater wells meet potable drinking water standards. The Department conducts water well testing including flow rates and water quality analyses for new development. Plans for a new potable water system are reviewed and approved by the Department. Water quality testing must be conducted annually to ensure the water supply complies with the standards established by the California Safe Drinking Water Act.

Alameda County Municipal Code

Most provisions related to water supply and conservation in the ACMC are found in Title 13, *Public Service*, and Title 17, *Zoning,* as described below. Title 6, Health and Safety, contains the water well ordinance, which is described above.

- Chapter 13.12, Watercourse Protection*.* The purpose of this chapter is to safeguard and preserve watercourse, protect lives and property, prevent damage due to flooding, protect drainage facilities, control erosion and sedimentation, restrict discharge of polluted materials, and enhance recreational and beneficial uses of watercourses. Every person owing property through which a watercourse passes must keep and maintain that watercourse free of trash, debris, excessive vegetation, and other obstacles would pollute, contaminate, or retard the flow of water through the watercourse. No person shall discharge any pipe or channel into a watercourse or modify the natural flow of a watercourse or develop within a setback unless a written permit has been obtained from the Director of Public Works.

- Chapter 17.64, Water Efficient Landscape Ordinance. This ordinance applies to all new and rehabilitated landscape that increase the irrigated landscape area by 2,500 or more square feet and that are part of a project requiring a building permit, plan check, or planning permit. The project applicant must submit a landscape documentation package to the County's Planning Department prior to construction, which contains a water efficient landscape worksheet, a soil management report, a landscape design plan, an irrigation design plan, a grading design plan, a landscape and irrigation maintenance schedule, and an irrigation audit, survey, and water use analysis.

East Bay Municipal Utility District Wastewater Control Ordinance

The East Bay Municipal Utility District (EBMUD) Wastewater Control Ordinance establishes regulations and charges for collection, treatment, and disposal of wastewater, as well as penalties for violations. EBMUD establishes discharge limits for certain pollutants.[2]

4.14.1.2 EXISTING CONDITIONS

The project site is in a rural region of Alameda County that is not served by municipal water purveyors. Private groundwater wells in the area are the primary source of potable water supply.
Currently, there are five groundwater wells on the project site. Balance Hydrologics was retained to conduct groundwater exploration and identify potential water supply sources for the project. Two wells were identified as potential production sources. Both wells are screened in consolidated sedimentary bedrock and were constructed in accordance with the requirements of Title 22 of the California Code of Regulations (CCR). A description of the wells is provided in Table 4.14-1, *Production Well Description.*

TABLE 4.14-1 PRODUCTION WELL DESCRIPTION

Parameter	Well 20-1	Well 17-1
Depth	135 feet	200 feet
Screen Depth	95-135 feet	70-90 feet and 130-190 feet
Aquifer Characteristics	Semi-confined bedrock aquifer	
Static Depth to Water	52.9 feet	74.4 feet
Rated Capacity	4.7 gpm	3.0 gpm

Notes: gpm = gallons per minute
Source: 2022, The Mosaic Project – Water System Conceptual Design Report. March 2022.

Based on data from ten-day pumping tests and source capacity analysis as per CCR Title 22, the two groundwater sources have a combined capacity of 7.7 gallons per minute (gpm). Based on the production capacity and water quality of the wells, it was determined that Well 20-1 will operates as the main supply source while Well 17-1 will be used as a backup supply source. Neither well draws on groundwater under the direct influence of surface water. The methodology and conclusions of the supply evaluation have

[2] East Bay Municipal Utility District, 2013. Wastewater Control Ordinance.

been reviewed and accepted by the DDW; formal approval is anticipated with the submittal of the final evaluation to the State. The groundwater well east of Cull Creek will be abandoned, as per the requirements of DWR, ACPWA and ACDEH, because it has been deemed inadequate as a potable water source.

4.14.1.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact if it would:

- Require or result in the relocation or construction of new or expanded water treatment facilities, the construction or relocation of which could cause significant environmental effects.
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

4.14.1.4 IMPACT DISCUSSION

This section analyzes the proposed project's potential impacts to water supply and distribution facilities.

UTIL-1 The proposed project would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

The project proposes an on-site public water system that would be supplied by two on-site groundwater projection wells that are currently in place. The water demands for the proposed project were developed in consultation with DDW. A water system conceptual design report was prepared by SRT Consultants and is provided in Appendix G.

Per capita water use factors were applied to the projected peak number of people present at the site per day to determine average and maximum daily demands. The values used to size the on-site wastewater treatment system were used to estimate the projected water demands, based on schedules provided by Mosaic staff and in compliance with ACDEH standards. The water demand assumptions are provided in Table 4.14-2, *Water Demand Assumptions.*

TABLE 4.14-2 WATER DEMAND ASSUMPTIONS

Water Use Category	Per Capita Water Demand	Demand Type	Peak Occupancy
Campers and Counselors	25 gpd per person[1]	Temporary stay	108 persons
Facility Type	**Daily Water Demand Per Bedroom**	**Demand Type**	**No. of Bedrooms**
Caretaker House	150 gpd/bedroom[2]	No. of bedrooms	3
Permanent Dwelling Residence (up to 3 bedrooms)	150 gpd/bedroom	No. of bedrooms	3
Permanent Dwelling (up to 5 additional bedrooms)	150 gpd/bedroom	No. of bedrooms	5

Water Use Category	Per Capita Water Demand	Demand Type	Peak Occupancy

[1]Based on previous estimate by Northstar for similar camp operations and EPA's OWTS manual for camps.
[2]Conservative estimate of 150 gpd/bedroom based on the ACDEH standards for dwellings.
Source: 2022, The Mosaic Project – Water System Conceptual Design Report. March 2022.

The camp schedule would consist of 12 weekend programs throughout the year, 18 week-long outdoor sessions (10 in winter and spring and 8 in the fall), and five week-long summer camps. The week-long camps would be 5 day/4 night programs, starting at 11 am on Monday and ending at 1:30 pm on Friday. Therefore, the first day water demand is assumed to be half the daily demand and the last day water demand is assumed to be ¼ of the daily demand. The weekend programs would be spaced out throughout the year but would not run concurrently with the weekly sessions. In total, it is estimated that the camp would be in session approximately 140 days per year, and water demand on the remaining days is based on the usage of full-time residents (designated as "baseline use"). The peak daily water demand for the various usage scenarios is provided in Table 4.14-3, *Peak Daily Water Demand.*

TABLE 4.14-3 PEAK DAILY WATER DEMAND

Water Usage Scenario	Peak Water Demand (gpd)
Baseline Usage	1,275
Outdoor and Summer Programs	3,975
Outdoor and Summer Program – First day	3,075
Outdoor and Summer Program – Last day	2,400
Weekend Program	3,975

Source: The Mosaic Project, 2022. Water System Conceptual Design Report.

The daily water demand scenarios provided in Table 4.14-3 were applied to the proposed camp schedule prepared by Mosaic staff to estimate the total annual potable water demand, which is 786,000 gallons or about 2.4 acre-feet per year.

The average daily demand (ADD) was calculated by dividing the total annual water demand by 365 days for an estimate of 2,155 gallons/day or 1.50 gpm. The maximum daily water demand (MDD) is 3,975 gpd or 2.76 gpm, which corresponds to the peak daily water usage during a summer or outdoor program.

As shown in Table 4.14-4, *Water Demand and Supply Summary*, the production wells have a combined capacity of 7.7 gpm, and each well has the capacity to individually supply the peak daily demand. Therefore, the proposed water system has sufficient supply to meet the projected peak water demands.

TABLE 4.14-4 WATER DEMAND AND SUPPLY SUMMARY

Description	Peak Water Demand (gpm)
Average Daily Demand (ADD)	1.47
Maximum Daily Demand (MDD)	2.76
	Water Supply Capacity
Well 17-1	3.0
Well 20-1	4.7
TOTAL	**7.7**

Source: The Mosaic Project, 2022. Water System Conceptual Design Report

The proposed facilities for the PWS would include the following:

- Two groundwater production wells and approximately 1,100 linear feet of transmission piping to supply water to the system's connections.
- One 15,000-gallon plastic raw water storage tank.
- A 15-foot by 30-foot water treatment plant (WTP), which would be supplied by the raw water tank.
- Two 5,000-gallon plastic potable water storage tanks that would gravity-feed the distribution system.
- One 20,000-gallon waste tank that would temporarily store the WTP backwash and process water.
- One hydro-pneumatic tank and booster pump that would be supplied by water from the potable water storage tanks and would pressurize the distribution system to ensure adequate pressures at all water connections.
- Approximately 1,300 linear feet of 4-inch PVC distribution piping network to the identified water connections throughout the site. The proposed connections include the main hall, the bathroom building, the staff house, the caretaker house, and a minimum of two water spigots.

Based on the water quality of the groundwater production wells, recommendations from the suppliers of the water treatment plant, and compliance with CCR Title 22 regulations, the proposed treatment system will consist of a 15-gpm reverse osmosis (RO) unit with a total flow rate capacity of 15 to 23 gpm. The proposed water treatment process includes three pressure vessels, two chemical injection steps and a RO unit in series, as follows:

- Sodium hypochlorite dosing. This chlorine injection process serves as the oxidizing step to precipitate key contaminants present in the groundwater
- Multi-media filter. The multi-media pressure filter includes layers of anthracite, sand, and gravel and will result in turbidity removal
- Greensand filter. The greensand filter targets the removal of iron and manganese precipitates.
- Activated carbon filter. The activated carbon vessel removes organics, taste, and odor compounds and excess chlorine from the oxidation step
- Antiscaling dosing. A chemical to prevent scaling is injected into the pipe to inhibit the formation of mineral scales that would cause membrane fouling. This helps optimize the RO membrane operation and longevity.
- RO system. The RO system is highly effective at removing salts, minerals, and pathogens.

- **Disinfection process**. This will be implemented based on the Groundwater Rule requirements. A sodium hypochlorite injection system would be located at the outlet of the potable water break tank at the treatment system and would set the proper chlorine residual for the distribution system.

The brine produced by the RO treatment unit and backwash waste from the pre-treatment processes would be conveyed to a dedicated waste storage tank. The contents of the waste tank would be hauled offsite by an approved waste hauler on a regular basis. The anticipated wastewater volume produced by the treatment processes is provided in Table 4.14-5, *Treatment Waste Volume Calculations.*

TABLE 4.14-5 TREATMENT WASTE VOLUME CALCULATIONS

Pre-Treatment Backwash Waste: Two-Week Cycle

Treatment Trains	Backwash Flow Rate	Backwash Duration	Cycle Frequency	No. of Days of Operation	Backwash Volume
	gpm	minutes		days	gallons
Multimedia Filter	36.2	20	once/day	5	3,620
					Water Supply Capacity
Well 17-1					3.0
Greensand Filter	37.7	20	once/day	5	3,770
Activated Carbon Filter	37.7	20	once/day	5	754
TOTAL					**8,144**

RO Brine: Two-Week Cycle

	Two-Week Treated Water Volume	RO Flow Split	Two-Week Water Treated by RO	Recovery	RO Brine Volume
	gallons	percent	gallons	percent	gallons
	39,900	65%	25,935	55%	**11,671**
TOTAL – Backwash + RO Brine Volume					**19,815**

Source: The Mosaic Project, 2022. Water System Conceptual Design Report

Based on the calculations provided in Table 4.14-5, the installation of a 20,000-gallon waste tank is recommended. The waste storage tank will be sited at a location near the Staff House that can by easily accessed by a vacuum truck.

In accordance with the EBMUD Wastewater Control Ordinance and discharge limits, the RO brine and backwash waste will be accepted and can be hauled by one of EBMUD's approved haulers. The capacity of the tanker trucks is approximately 5,000 gallons. Therefore, for the peak scenario provided above, the hauling frequency is estimated to be four trucks every two weeks.

In summary, water pumped from the groundwater production wells will be conveyed to a 15,000-gallon raw water storage tank. It will then be treated to drinking water standards at the water treatment unit and conveyed to two 5,000-gallon tanks at an elevation of 162 feet. The system will be pressurized by a 1,000-gallon pneumatic tank and booster pump to ensure delivery at pressures between 40 and 80 pounds per square inch (psi) at all connections, in compliance with CCR Title 22 regulations. The water will be distributed to various connections throughout the site via 1,300 linear feet of 4-inch NSF-61 certified PVC pipes buried in trenches and backfilled with proper fill material.

The proposed water system for the project will be completely contained on-site and will meet the requirements of all State and local regulations. Therefore, the project would not result in the construction of new regional water treatment or distribution facilities and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

UTIL-2 The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

As described in Impact UTIL-1, the proposed potable water system will consist of two groundwater production wells with a total capacity of 7.7 gpm. As shown in Table 4.14-4, the average daily demand was calculated to be 1.50 gpm and the maximum daily water demand is 2.76 gpm. Therefore, each groundwater production well has the capacity to individually supply the total maximum water demand for the project. There is an excess capacity of approximately 5 gpm if both wells were operated simultaneously. Therefore, the project would have sufficient water supplies available to serve the project during normal, dry, and multiple dry years.

In addition, landscaping and gardening activities at the site would be supplied with a combination of collected rainwater and greywater. The greywater would be captured from showers and sinks, treated, and then stored in two 2,500-gallon tanks. Rainwater would be collected in two 5,000-gallon tanks and three 20,000-gallon tanks and then distributed through an irrigation system.

One 38,000-gallon tank would be provided for fire protection. The tank has been sized to support a fire flow demand of 1,000 gpm. This system would use raw well water. Once the tank is filled, the demand will be minimal with use occurring only with system testing, passive system losses, and possibly needed repairs.

The proposed project would not require the use of municipal water supplies and the PWS is sized to meet water demands during normal, single, and multiple dry years. Therefore, the impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.14.2 WASTEWATER

This section describes the existing regulatory setting and conditions as well as potential impacts of the proposed project related to wastewater collection and treatment facilities. The proposed project includes the installation of a wastewater system to treat sanitary sewage on-site.

4.14.2.1 REGULATORY FRAMEWORK

State Regulations

SWRCB Onsite Wastewater Treatment System Policy

In 2012, the SWRCB adopted Resolution No. 2012-0032, adopting the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). This Policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from these systems. In accordance with Water Code Section 13290 et seq., the OWTS Policy sets design standards; minimum operating requirements; specifications for OWTS near impaired water bodies; authorization for local agencies to implement the requirements; minimum monitoring requirements for OWTS; and a conditional waiver of waste discharge requirements. The RWQCBs are required to incorporate the standards established by the OWTS Policy into their water quality control plans. Implementation of the OWTS policy is overseen by the SWRCB and the RWQCBs and local agencies may implement their own programs if approved by the applicable RWQCB.

San Francisco RWQCB Basin Plan

The San Francisco RWQCB is required by law to develop, adopt, and implement a Water Quality Control Plan (Basin Plan) for the region. The Basin Plan is the master policy document that provides the basis for the water quality regulations for the region, including beneficial uses, water quality objective, and strategies and schedules for achieving the water quality objectives. The Water Quality Control Plan for the San Francisco Bay Basin was first issued in 1975 with the latest revision in 2013. The Basin Plan contains provisions and policies related to OWTS and greywater systems.

California Code of Regulations for Organized Camps (17 CCR 30700 et seq.)

Title 17 in the California Code of Regulations (CCR), Subchapter 6, *Organized Camps,* discusses the regulatory requirements for organized camps. Article 2, *Utilities*, provides the requirements for handwashing facilities, shower, and toilets. Section 30712 states that handwashing facilities shall be provided adjacent to all flush toilets. Single service soap dispensers shall be provided at handwashing facilities, except for those handwashing facilities located in camper housing facilities. Section 30713 states that when campers are present for three or more consecutive days and nights, showers shall be provided. Section 30714 states that toilets shall be provided at the ratio required in Table 4-4 of the California Plumbing Code. For organized camps, this is one toilet and one sink for up to 15 people, one shower for up to 15 people, and a minimum of one drinking fountain per camp. The toilet facilities shall not be

farther than 300 feet from the living accommodations they serve. Pit or chemical toilets may only be used in remote areas where a plumbing system for water distribution is unavailable.

Local Regulations

Alameda County Department of Environmental Health (ACDEH)

The Alameda County Department of Environmental Health, Onsite Wastewater Treatment Systems Program coordinates with the San Francisco RWQCB to permit OWTS for new and existing development projects in Alameda County. The Alameda County OWTS Regulations and Amendments are found in the Municipal Code, Chapter 15.18. The regulations are designed to provide for the safe and sanitary treatment and disposal of private sewage and provide minimum standards for the construction and operation of OTWS. The regulations and requirements can be found in the following documents:

- Alameda County Department of Environmental Health, 2018. *Local Agency Management Program for Onsite Wastewater Treatment Systems*. Dated June 5, 2018.
- Alameda County Municipal Code. Chapter 15.18, *Onsite Wastewater Treatment Systems Ordinance*.
- Alameda County Department of Environmental Health, 2018. *Onsite Wastewater Treatment Systems Manual*. Dated June 2018.

Alameda County Municipal Code

Most provisions related to wastewater are found in Title 13, *Public Service*, and Title 15, *Building and Construction,* as described below.

- Chapter 13.04, Sewer System. Section 13.04.040, *Private Disposal of Sewage,* states that it is unlawful to construct any privy, privy vault, septic tank, cesspool, holding tank or other facility intended for the disposal of sewer until approval has been granted and the system must meet the minimum requirements of the Alameda County Environmental Health Department and any applicable provisions of the Board of Supervisors. develop within a setback unless a written permit has been obtained from the Director of Public Works.
- Chapter 15.18, Onsite Wastewater Treatment Systems. This chapter, also known as the Onsite Wastewater Treatment Systems Ordinance, provides for the safe and sanitary treatment and disposal of wastewater from structures and buildings not served by public sewer systems, as allowed by the SWRCB Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. The chapter establishes standards for the approval, installation, and operation of the OWTS and onsite wastewater containment units (OWCU) within Alameda County, in compliance with the SWRCB State Policy and consistent with the RWQCB policies and Basin Plans. Standards and guidelines for compliance with this ordinance can be found at the ACDEH website and are listed in the previous section. A new or replacement OTWS or OWCU requires an installation permit issued by ACDEH. Depending on the size and complexity of the OWTS or OWCU, an annual operating permit may be required.
- Chapter 15.36, Grading Erosion and Sediment Control. Under Section 15.36.160, the Director of Public Works shall refer permit applications for grading work associated with the construction or reconstruction of an on-site wastewater disposal system to the ACDEH.

4.14.2.2 EXISTING CONDITIONS

There are two existing OWTS at the site. One of the systems is in the western portion of the site and serves the caretaker house. The caretaker house and the associated OWTS will remain in place for the proposed project. The existing OWTS that is located on the southeastern portion of the site, north of the existing garage, will be removed and replaced by a new OWTS and leach field dispersal system, as described below. The project site is not currently connected to the municipal sewer system and there are no plans to connect to this system in the future.

4.14.2.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact if it would:

- Require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.

The following significance criterion was eliminated in the scoping process as reported in the Initial Study (Appendix A) and will not be evaluated in this chapter:

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

There was a finding of no impact because the proposed project would not convey wastewater to a wastewater treatment plant. All wastewater generated by the project would be retained and treated onsite.

4.14.2.4 IMPACT DISCUSSION

This section analyzes the proposed project's potential impacts to wastewater facilities.

UTIL-3	**The proposed project would not require or result in the construction of new wastewater facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

The project proposes a new on-site wastewater treatment system (OWTS) and associated leach field dispersal system. The initial design for this system was developed by NorthStar and was submitted to the ACDEH for review. The basis of design follows the Alameda County *Onsite Wastewater Treatment Manual* dated June 2018. To obtain approval/clearance for the proposed project, the project applicant must submit a Service Request Application (SRA) and fees to the ACDEH Finance Department. Upon receipt of the SRA and fees, ACDEH staff will review the files and provide the applicant with a written *File Summary Review and Estimated Regulatory Path and Fees for Project Approval/Clearance* within 15 days of the submittal. Depending on the project complexity, ACDEH may schedule a consultation meeting with the project applicants and their consultants/contractors.

Wastewater flow predictions are based on the following design parameters:

- Central Meeting and Dining Hall. This 8,500 square foot multi-purpose building would be constructed south of the cabins on the southern portion of the project site. It would be used for indoor activities and will contain restrooms, a medic room, kitchen, pantry, dining area, meeting space, laundry, restrooms, shows, and offices.
- Restroom/Shower Building. A 1,025 square foot restroom/shower building would be constructed just north of the camping cabins.
- Family Dwelling. A 2,600 square foot staff dwelling would be constructed to serve as Mosaic staff's permanent home and would be located north of the cabins on the western portion of the project site.
- Camping Cabins. Twelve 400 square foot camping cabins would be placed in the southwestern portion of the project site. The cabins would have no plumbing fixtures.
- Caretaker's Unit. The existing 1,200 square foot structure would remain as the caretaker's dwelling on the northern portion of the project site and would be served by the existing septic system. Therefore, wastewater flow from this unit is not included in this analysis.

A conservative design flow of 25 gpd/person/day was determined for this project, based on water flow meters at a similar facility which registered an average water use of 19 gpd/person. The 2002 USEPA Onsite Wastewater Treatment Manual has a typical vale for "Pioneer Camps" of 25 gpd. However, compliance with the CalGreen Building Code for new construction, which was not considered in the USEPA flow rate, would result in at least a 20 percent reduction in water usage. Therefore, a value of 25 gpd/person is conservative. The predicted wastewater flow rates are provided in Table 4.14-6, *Predicted Wastewater Flow Rates.*

TABLE 4.14-6 PREDICTED WASTEWATER FLOW RATES[1]

Occupant Type	Maximum Daily Occupants	Flow per person (gpd)	Total Gallons/Day
Campers	100	25	2,500
Day Staff	8	25	200
Family Dwelling Residence	8 bedrooms	NA	825
TOTAL			3,525

1. Based on estimate by Northstar for similar camp operations and EPA's OWTS manual for camps.
Source: Northstar, 2020, Basis of Design Report for the Mosaic Project. Dated November, 2020.

The total design flow of 3,535 gpd was used for the sizing of the septic tanks, treatment system, and leach field dispersal system. An average design flow was assumed to be 80 percent of the total design flow, or 2,820 gpd. Blackwater flow reductions with future greywater use for landscape irrigation were not subtracted from the design flow, except in analyzing the impacts on secondary treatment sizing.

At this conceptual phase of the project, it is assumed that there will be primary and secondary treatment of effluent. This will require, at a minimum, grease interceptor tanks, septic tanks, secondary treatment equipment, and surge/dosing tank with pumps and controls to move wastewater evening and consistently to dispersal zones on the site.

The secondary wastewater treatment will be accomplished using an Orenco AdvanTex® textile filtration system with an AX100® treatment pod or a AXMax™ configuration. The proposed secondary treatment configuration will be provided as part of the final design report. Two scenarios for treatment sizing were evaluated:

- Scenario 1 – No greywater diversion and full blackwater flow. This scenario models when a greywater system is not active or present, primarily when regulations limit the use of greywater in high precipitation conditions.
- Scenario 2 – Reduced blackwater flow with greywater diversion. This scenario models the results when a greywater system is active, lowering the daily flow rate and potentially increasing the organic loading.

The preliminary sizing results for the treatment system are provided in Table 4.14-7, *Conceptual Wastewater Treatment System Sizing.*

TABLE 4.14-7 CONCEPTUAL WASTEWATER TREATMENT SYSTEM SIZING

Component	Size	Notes
Septic Tank	20,000 gallons	May be multiple tanks serving various locations
Secondary Treatment	175 square feet of filter area	Scenario 2 organic loading governs; may be reduced with pre-treatment conditioning in final design phase
Dosing Tanks	5,000 gallons	May be reduced with pre-treatment conditioning in final design phase

Source: NorthStar, 2020. The Mosaic Project Basis of Design

The leach field dispersal system would apply secondary treated effluent to pressure dosed chambered trenches in an area between the proposed staff house and the cabins and restroom/shower building. Soil maps indicate the presence of Yolo loam and Danville silty clay loam beneath the site. Percolation test results from the proposed leach field area had rates ranging from 8 to 48 minutes/inch, with an average percolation rate of 33 minutes/inch.

The conceptual design for the leach field is based on a peak flow rate of 3,535 gpd and a soil application rate of 1.03 gpd/square foot and 5.0 square feet of infiltrative area per lineal foot. With these conservative assumptions, the total lineal footage for the dispersal field is approximately 480 lineal feet of pressure dosed trenches. Because secondary effluent treatment is proposed, the final design may incorporate infiltrative area in the design.

There are two planned locations for the replacement area. The primary replacement area would be in the spacing between the proposed pressure dosed trenches. This would use the same configuration as the original dispersal system with 480 lineal feet of pressure dosed chambers. A backup repair alternative would be to use a drip dispersal area on the sloped areas of the property. Using a 3,535 gpd design flow and an application rate of 0.4 gpd/sf, an area of approximately 9,000 square feet for drip dispersal would be required. The details for the leach field dispersal system are provided in Table 4.14-8, *Conceptual Dispersal System Sizing.*

TABLE 4.14-8 CONCEPTUAL DISPERSAL SYSTEM SIZING

Dispersal Method	Application Rate	Size	Notes
Pressure Dosed Chambers	1.0 gpd/sf at 5 sf/lf	480 lf	Conservative application rate using enhanced application rates and infiltrative surface area
Pressure Dosed Chambers	1.0 gpd/sf at 8 sf/lf	300 lf	Conservative application rate and infiltrative surface area increased to 8 sf/lf per Chapter 27.C.3
Drip (only for replacement option on slope)	0.4 gpd/sf	9,000 sf of surface area	Future only for replacement field

sf = square feet, lf = lineal feet
Source: NorthStar, 2020. The Mosaic Project Basis of Design

Based on the classification of the project as nonresidential with a design wastewater flow of over 2,500 gpd outside the Upper Alameda Creek Watershed above Niles (Impaired Area), a groundwater mounding analysis and groundwater nitrogen loading analysis are required. The results are presented in the 2020 Northstar report titled *The Mosaic Project Basis of Design*, which is provided as Appendix G.

The results of the groundwater mounding analysis showed that groundwater could mound up to 17 feet and could be 10 feet below the bottom of the proposed dispersal trenches. However, this distance is much greater than the allowable separation distance of 5 feet and therefore, groundwater mounding would not cause a significant impact. The criterion for evaluating nitrogen loading from the proposed OWTS is that it shall not exceed a concentration of 7.5 mg/l of nitrate-nitrogen in groundwater beneath the site. The results show than less than a 25 percent nitrogen reduction is needed from the treatment system to satisfy this requirement. An additional analysis showed that if the nitrogen concentrations were 1.5 to 2.0 times higher than residential strength nitrogen with a potential greywater system increasing the loading concentrations, the nitrogen removal percentage that the system would need to achieve is approximately 50 percent. This is well within the capability of the proposed Orenco AdvanTex® system without additional denitrification enhancements.

In summary, the OWTS and dispersal system would be sized to accommodate a 3,525 gpd maximum design flow and 2,820 gpd average daily flow, with a domestic strength waste (BOD) less than 30 mg/l, and a nitrogen input ranging from 70 mg/l to 140 mg/l. The system components are as follows:

- Septic tank with a volume of 20,000 gallons
- An Orenco AX MAX textile filter system with 175 square feet of media and associated recirculation volume providing 30 mg/l BOD and 30 mg/l TSS and 50 percent nitrogen removal
- A 6,000-gallon dosing tank with the capacity to hold 1.5 days of design flow and delivery of secondary treated effluent to a subsurface dispersal field
- 400 lineal feet of 24-inch wide by 24-inch deep pressure dosed chambered dispersal trenches.

The proposed project would not result in the construction of new regional wastewater treatment facilities, because all generated wastewater would be retained onsite. The OWTS would be installed and monitored in accordance with the requirements of the Alameda County Onsite Wastewater Treatment Systems Ordinance and would be permitted and approved by the ACDEH. A final design report will be

submitted to the ACDEH for review and approval and an installation permit will be issued by the ACDEH prior to the start of construction. Upon implementation of these regulatory requirements, the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

4.14.3 STORMWATER

This section describes the potential impacts of the proposed project regarding stormwater collection and treatment. The regulatory framework for stormwater is described in detail in Chapter 4.8, *Hydrology and Water Quality.* The regulatory requirements that pertain solely to stormwater collection and treatment are repeated below.

4.14.3.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Clean Water Act

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain a state water quality certification indicating the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with US Army Corps of Engineers (USACE) Section 404 permits for dredge and fill discharges. In addition, a water quality certification must be sought for any activity that would result in the placement of structures in waters of the United States that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California, the authority to grant water quality certification or waive the requirement is delegated by the SWRCB to its nine RWQCBs.

State Regulations

Porter-Cologne Water Quality Act

As described above in Section 4.14.1, *Water*, under the Porter-Cologne Water Quality Act, the SWRCB has ultimate control over state water rights and water-quality policy. The RWQCBs adopt a Water Quality Control Plan to carry out the regulation, protection, and administration of water quality in each region.

National Pollutant Discharge Elimination System (NPDES)

Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges are also regulated under this program. The project site lies within the jurisdiction of the San Francisco Bay RWQCB (Region 2). All projects in the unincorporated areas of Alameda County are subject to the requirements of the Municipal regional stormwater Permit (MRP; Order No. R2-2015-0049 as amended by Order No. R2-2019-0004). The MRP requires new development and redevelopment projects that meet certain criteria to incorporate low impact design (LID), site design measures, source controls, and stormwater treatment measures. The

project site is in a mapped area that could requires hydromodification measures. However, the proposed project would create or replace less than one acre of impervious surfaces and therefore is exempt from these requirements.

The project applicant will be required to prepare and submit a *Stormwater Checklist for C.6/C.3 Compliance* to the Alameda County Public Works Agency for approval prior to the start of construction.

Statewide General Construction Permit

The SWRCB has adopted a statewide Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014 DWQ and 2012-0006-DWQ) for stormwater discharges associated with construction activities. Since the proposed project will disturb one acre or more of land, the project applicant is required to submit Permit Registration Documents (PRDs) to the SWRCB for coverage under the NPDES permit prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

State Water Quality Control Board's Trash Amendment

On April 7, 2015, the SWQCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to control trash. In addition, the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California added the section: Part 1, Trash Provisions. Together, they are collectively referred to as "the Trash Amendments." The purpose of the Trash Amendments is to provide statewide consistency for the RWQCBs in their regulatory approach to protect aquatic life and public health beneficial uses, reduce environmental issues associated with trash in State waters, and focus limited resources on high-trash-generating areas. The Trash Amendments apply to all permittees under the MS4 permits. Compliance with the Trash Amendment requires municipalities to install certified trash treatment control systems on all catch basins no later than December 2, 2030.

California Code of Regulations for Organized Camps (17 CCR 30700 et seq.)

Title 17 in the California Code of Regulations (CCR), Subchapter 6, *Organized Camps,* discusses the regulatory requirements for organized camps. Article 2, *Utilities*, provides the requirements for water supply and drinking water. Section 30710 states that a dependable supply of potable water adequate

Local Regulations

Alameda County Clean Water Program

Thirteen incorporated cities in Alameda County, the Alameda County Flood Control & Water Conservation District, the Zone 7 Water Agency, and Alameda County joined to form the Alameda County Clean Water Program (CWP). Members of the program are regulated waste dischargers under the MRP issued by San Francisco Bay RWQCB and are responsible for municipal storm drain systems and watercourses that they own or operate. As part of the permitting process, dischargers must submit a Stormwater Management Plan that describes a framework for management of stormwater discharges during the 5-year term of the

permit. The CWP has developed technical guidance for developers, builders, and project applicants to assist in compliance with the C.3 provisions of the MRP. The latest guidance manual was issued in February 2021. In addition, the CWP is promoting green infrastructure and has developed a Stormwater Resource Plan (SWRP) that identifies potential green infrastructure projects within the County that are eligible for State funding.

Alameda County Municipal Code

Most provisions related to stormwater are found in Title 13, *Public Service,* as described below.

- Chapter 13.12 – Watercourse Protection (Watercourse Protection Ordinance): This chapter is enacted to safeguard and preserve watercourses, protect lives and property, prevent damage due to flooding, protect drainage facilities, control erosion and sedimentation, restrict discharge of polluted materials, and enhance recreational and beneficial uses of watercourses. The chapter requires a permit from the director of public works for any activity that requires constructing, altering, enlarging, or changing any structure in a watercourse.
- Chapter 13.08 – Stormwater Management and Discharge Control: The purpose and intent of this chapter is to reduce or eliminate the pollution of receiving waters, including creeks and the San Francisco Bay, and to protect and enhance the water quality in County water bodies, including watercourses, wetlands, creeks, and flood control facilities, in a manner pursuant to and consistent with the CWA, the State Porter/Cologne Act, and the county NPDES permit, by 1) reducing and eliminating illegal or illicit non-storm discharges to the waters of the U.S., the County storm drain system, the creeks, and the bay from construction activities, new development, redevelopment, and other activities, through inspection, monitoring, and complaint response; 2) controlling discharge to the County storm drain system, creeks, and the bay from dumping or disposal of materials other than stormwater; 3) reducing pollutants in stormwater discharges to the maximum extent practicable; 4) regulating the design and construction of permanent post-development stormwater quality measures and controls, including the application of site design, source control, stormwater treatment, and hydromodification management, through the provisions of this chapter and of other county ordinances, rules, regulations, and procedures; 5) inspecting, monitoring, and regulating pollution prevention measures during construction; and 6) establishing legal authority to perform all reviewing, inspection, surveillance, and monitoring activities necessary to ensure compliance with this chapter.

4.14.3.2 EXISTING CONDITIONS

The project site is located within the San Lorenzo Creek Watershed, which includes Cull Creek. Cull Creek runs north to south through the property, generally west and parallel to Cull Canyon Road. The project site is located within the Alameda County Flood Control and Water Conservation District's (ACFCWCD's) Flood Zone 2. Within this flood zone, the ACFCWCD maintains and manages the storm drainage network, which consists of 55 miles of natural creek, four miles of earth channels, 11 miles of concrete channels, two miles of improved channels, 49 miles of underground pipe, and two pump stations.

The existing property drains toward Cull Creek which is a natural stream. Stormwater runoff from Cull Creek ultimately flows into San Lorenzo Creek, which flows generally in a westerly direction until it discharges into San Francisco Bay. Stormwater drainage on the site consists of valley gutters and drainage

swales. Existing structures on the property include a 1,200 square foot mobile home, a 970 square foot barn, and a paved parking area located adjacent to Cull Canyon Road. An existing 14-foot-wide bridge spans Cull Creek and leads to a developed area that includes a 7,500 square foot garage building, a paved patio, and driveways with drainage swales. The remainder of the site consists of steep bay and oak woodlands that generally slopes to the east and toward Cull Creek. The elevation of the property ranges from approximately 500 to 900 feet above mean sea level.

4.14.3.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant utilities and service systems impact if it would:

> Require or result in the relocation or construction of new storm water drainage facilities, the construction or relocation of which could cause significant environmental effects.

4.14.3.4 IMPACT DISCUSSION

UTIL-4	**Implementation of the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

The proposed project would be required to comply with the C.3 provisions of the MS4 permit and the design requirements of the ACFCWCD's *Hydrology and Hydraulics Manual,* which requires proposed storm drains to be sized to convey the 10-year storm event. In addition, new development projects must also comply with Chapter 13.08 of the ACMC which regulates the design of permanent post-development stormwater quality measures and controls, including the application of site design, source control, and stormwater treatment measures.

The preliminary design of stormwater features is provided as Figures 4.8-2 and 4.8-3 in Chapter 4.8, *Hydrology and Water Quality,* of this Draft EIR. The project site is divided into ten drainage management areas (DMAs) with a corresponding bioretention facility for each DMA. Each bioretention area has been designed to retain stormwater, based on the sizing criterion of 4 percent of the DMA impervious area. The project also proposes pervious pavement for portions of the roadway and parking areas to minimize potential stormwater runoff.

The project applicant has submitted a *Stormwater Checklist for C.6/C.3 Compliance* to the Alameda County Public Works Agency for approval. The preliminary design of stormwater controls must be submitted simultaneously with the preliminary site plan and landscaping plan. The stormwater plan must include: 1) the proposed finish grade, 2) storm drain system including inlets, pipes, catch basins, overland flows, outlets, and water flow direction, 3) permanent stormwater treatment system, including all design

details, 4) design details of all source control and site design measures, 5) drainage map indicating flow direction, and 6) sizing calculations used.[3]

Once the planning permit is issued, the stormwater information must be incorporated into the building permit application submittal. An operation and maintenance (O&M) plan would also be required for submittal during the building permit application process, as well as an O&M Agreement. A template for the annual O&M reporting for the stormwater treatment measures must also be submitted and the project must comply with the State's trash amendments, which require the installation of trash and debris capture devices on all storm drain inlets or catch basins.

In summary, the stormwater from the project site will be temporarily retained in bioretention areas with eventual discharge into Cull Creek. The project does not involve direct discharge into the County's storm drain system and therefore would not require the construction of new or expanded regional storm drains. Compliance with the regulatory requirements of the MS4 permit that limit runoff from new development would ensure that the project would not result in significant increases in runoff. Therefore, impacts with respect to stormwater would be *less than significant.*

Significance Without Mitigation: Less than significant.

4.14.4 SOLID WASTE

This section describes the existing regulatory setting and conditions as well as potential impacts of the proposed project regarding solid waste collection and disposal facilities.

4.14.4.1 REGULATORY FRAMEWORK

Federal Regulations

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State Regulations

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties throughout California to divert 50 percent of all solid waste from landfills as of January 1, 2000, through

[3] Alameda County Public Works Agency, 2022. Stormwater Quality Control Requirements for Unincorporated Alameda County. Accessed at http://co.alameda.ca.us/pwa/documents/brochure_9_05_final.pdf on April 16, 2022.

source reduction, recycling, and composting. To help achieve this, the act requires that each city and county prepare a source reduction and recycling element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle). AB 939 also established a goal for all California counties to provide at least 15 years of ongoing landfill capacity.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste divided by the jurisdiction's population. The California Integrated Waste Management Board was replaced by CalRecycle in 2010. CalRecycle sets a per capita disposal rate target for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.

Organic Waste Methane Emissions Reduction Act (Senate Bill 1383)

In September 2016, SB 1383 was signed into law establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants in various sectors of California's economy. SB 1383 establishes goals to reduce the landfill disposal of organics by achieving a 50 percent reduction in the 2014 level of statewide disposal of organic waste by 2020 and a 75 percent reduction by 2025. SB 1383 grants CalRecycle the regulatory authority to achieve the organic waste disposal reduction targets and establishes an additional target that at least 20 percent of currently disposed edible food must be recovered for human consumption by 2025.

Starting January 2022, SB 1383 regulations will be implemented under the Alameda County Organics Reduction & Recycling Ordinance. The new law affects all generators of organic waste, including businesses, institutions, and non-profit organizations, multi-family property owners or managers of buildings with five or more units, residents in single-family homes, apartments, and condos, public and private schools, and government agencies, such as State agencies and park districts.

Mandatory Commercial Recycling Requirements (Assembly Bill 341)

Assembly Bill 341 (Chapter 476) set a statewide solid waste diversion goal of 75 percent by 2020. AB 341, which was passed in 2011 and took effect July 1, 2012, mandates recycling for businesses producing four or more cubic yards of solid waste per week or multi-family residential dwellings of five or more units. Under AB 341, businesses and multi-family dwellings of five or more units must separate recyclables from trash and either subscribe to recycling services, self-haul their recyclables, or contract with a permitted private recycler.

Mandatory Commercial Organics Recycling (Assembly Bill 1826)

AB 1826, which was enacted in 2014, mandates organic waste recycling for businesses and multifamily dwellings with five or more units. The commercial organics recycling law took effect on April 1, 2016, and organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Currently, businesses and multi-family residences of five or more units that generate four or more cubic yards per week of solid waste (including recycling and organic waste) must arrange for organic waste recycling services. In the fall of 2020, CalRecycle will review the annual reports from various jurisdictions, and if the statewide goal of 50

percent reduction in organic waste as compared to 2014 has not been met, the organic recycling requirements will cover businesses and multi-family residences that generate two or more cubic yards of solid waste per week.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act requires development projects to set aside areas for collecting and loading recyclable materials. This act required CalRecycle to develop a model ordinance for adoption by any local agency to provide adequate areas for the collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own that establishes standards, including space allocation, for the collection and loading of recyclable materials.

CALGreen Building Code

Sections 4.408 and 5.408, *Construction Waste Reduction Disposal and Recycling*, of the CalGreen Building Code mandate that, in the absence of a more stringent local ordinance, a minimum of 65 percent of nonhazardous construction and demolition debris generated during most new construction must be recycled or salvaged. CALGreen requires developers to prepare and submit a waste management plan for on-site sorting of construction debris, which is submitted to the County for approval, or use a waste management company with verifiable documentation. The waste management plan must:

- Identify the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
- Specify if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identify the diversion facility where the material collected can be taken.
- Identify construction methods employed to reduce the amount of waste generated.
- Specify that the amount of materials diverted shall be calculated by weight or volume, but not by both.

California Code of Regulations for Organized Camps (17 CCR 30700 et seq.)

Title 17 in the California Code of Regulations (CCR), Subchapter 6, *Organized Camps,* discusses the regulatory requirements for organized camps. Article 5, *Solid Waste*, provides the requirements for garbage and refuse. Section 30735 states that all garbage and refuse shall be deposited and stored in flytight containers, removed and disposed of at a frequency and in a manner satisfactory to the local health officer.

Local Regulations

Alameda County Environmental Health Department

The ACDEH is certified by CalRecycle as the Local Enforcement Agency (LEA) for Alameda County. The LEA is responsible for ensuring the correct operation and closure of solid waste facilities. The ACDEH also has

the responsibility to ensure the proper storage and transportation requirements of solid wastes. The LEA regulates solid waste facilities to ensure compliance with regulations and standards through permitting, inspection, and enforcement efforts. The LEA permits and inspects landfills, transfer stations, composting and construction and demolition operations and facilities, and refuse collection vehicles. The ACDEH also provides information to the public and assistance to solid waste facilities.

Alameda County StopWaste

StopWaste is a public agency tasked with reducing waste in Alameda County since 1976. It is governed by the Alameda County Waste Management Authority, the Alameda County Source Reduction and Recycling Board, and the Energy Council. There are 17 member agencies: Alameda County, the fourteen cities within the County, and the two sanitary districts that serve the County (Castro Valley Sanitary District and Oro Loma Sanitary District). The following policies are part of the StopWaste program:

- Countywide Integrated Waste Management Plan. The Countywide Integrated Waste Management Plan (CoIWMP) provides guidelines for achieving Alameda County's solid waste management and recycling goals. The Countywide Siting Element demonstrates the ability of Alameda County to provide 15 years of permitted disposal capacity for all jurisdictions within the County. The Summary Plan provide an overview of waste management issues in the County, along with specific steps to be taken by member agencies. Each member agency is also responsible for preparing and updating the Source Reduction and Recycling Element (SRRE), Household Hazardous Waste Element (HHWE) and the Non-Disposal Facility Element (NDFE) within its jurisdiction.
- Measure D. Alameda County voters approved Measure D, the Alameda County Waste Reduction and Recycling Act in 1990. This measure established the Alameda County Source Reduction and Recycling Board and mandated that the Board periodically update a plan for a comprehensive source reduction and recycling program.
- Reusable Bag Ordinance. As of January 1, 2013, grocery stores and other food retailers in Alameda County can no longer provide single-use plastic carryout bags at checkout.
- Mandatory Recycling Ordinance. This ordinance requires certain businesses, institutions, and multi-family buildings to provide recycling and composting services.
- Plant Debris Landfill Ban. Disposal of plant debris, including grass, leaves, shrubs, vines, and tree branches, are prohibited from disposal in Alameda County landfills. Residents must dispose of plant waste and food scraps in their green bin.
- Facility Fee. Alameda County Waste Management Ordinance 2009-01 established procedures and reporting requirements for the collection of the Countywide solid waste facility fee, which is applies to solid waste originating in Alameda County that is deposited in landfills outside of the County.
- Household Hazardous Waste Fee. In February 2014, the Alameda County Waste Management Authority Board adopted a new household hazardous waste fee, which is currently set at $6.64 per year per residential unit. Revenue from the fee is used to support the Countywide household hazardous waste program.

Alameda County Organics Reduction and Recycling Ordinance

As of January 2022, SB 1383 regulations will be implemented by the Alameda County Organics Reduction and Recycling Ordinance. Under this regulation, edible food currently thrown away must be recovered and donated for people to eat. The remaining organics must be collected for composting and recyclables must be kept out of landfills. Free indoor food scrap bins are available to qualifying Alameda County businesses, institutions, and multi-family residential properties.

Alameda County Municipal Code

Most provisions related to solid waste are found in Title 6, *Health and Safety*, and Title 15, *Building and Construction,* as described below.

- Chapter 6.40, Solid Waste Collection and Organics Waste Reduction. This chapter is also known as the Alameda County Solid Waste Collection and Organics Waste Reduction Ordinance and requires single family, multi-family, and commercial properties to subscribe to regular solid waste, recyclable materials, and organic waste collection services. This chapter only applies to the unincorporated areas of Alameda County that are not included in the Castro Valley Sanitary District and Oro Loma Sanitary District, which have their own regulatory requirements.
- Chapter 6.76, Solid Waste Management. This chapter states that businesses that engage in collection services, solid waste disposal facilities, and transfer or processing stations must pay solid waste management fees.
- Chapter 4.38 – Construction Debris Management and Green Building Practices. Section 470.3 states that any non-residential construction project where the work area exceeds 3,000 square feet or residential construction project where the work area exceeds 1,000 square feet must comply with the construction and demolition debris management requirements. These requirements specify that 75 percent of the inert solids and 50 percent of all remaining construction and demolition waste be diverted from the landfill. Submission of a Debris Management Plan is required to be submitted to the Building Inspection Division of the Alameda County Public Works Agency for review and approval prior to issuance of a demolition or building permit.

Castro Valley Sanitary District

The Castro Valley Sanitary District (CVSD) provides solid waste collection services to the unincorporated area of Alameda County that includes the project site. The CVSD contracts with Alameda County Industries (ACI), which drives the collection trucks. ACI has provided recycling, organics, and garbage collection services since 2019 within the District boundaries. The Zero Waste Department does public outreach to keep the community informed about legislation, new programs, and the best recycling practices. Castro Valley Sanitary District is on track to meet the goal of zero waste (90 percent or more diversion) by the year 2029.

4.14.4.2 EXISTING CONDITIONS

Castro Valley Sanitary District (CVSD) provides solid waste collection, transportation, and disposal services to Castro Valley Canyonlands, which is an unincorporated area in Alameda County that includes the

project site. CVSD contracts with Alameda County Industries (ACI) for curbside collection. Recyclables are transported from the collection routes to the ACI Material Recovery Facility in San Leandro. Organics are transported to the ACI transfer facility in San Leandro and then taken to the Napa Recycling and Composting Facility in Napa, California. Garbage is transported to the Davis Street Transfer Station in San Leandro, where it is eventually transferred to Altamont Landfill by Waste Management. Household hazardous waste (HHW) can be disposed of at various one-day drop-off events or at four HHW disposal sites in Oakland, Hayward, Livermore, and Fremont, by appointment.

Garbage that is not recycled, composted, or reused is transported to the Altamont Landfill in Livermore, California. The landfill is operated by Waste Management of Alameda County and has a maximum throughput of 11,150 tons/day. In 2019, the total tonnage of solid waste shipped to Altamont Landfill was 1,099,100 tons.[4] Assuming 300 disposal days/year, this would equate to about 3,664 tons/day, which is well below the maximum permitted capacity of 11,150 tons/day. The landfill has a remaining capacity of approximately 124,400,000 cubic yards, which is over 50 percent of its total capacity, as of 2016. The closure date for this landfill is 2070.

As of 2020, Alameda County had a landfill diversion rate of 67 percent. Per capita disposal rates are one of several factors used by CalRecycle to determine compliance with AB 939. As of 2020, the disposal rate for Alameda County was 3.2 pounds of waste per day (ppd) per resident and 19.0 ppd per employee, which are below the CalRecycle targets of 4.9 ppd per resident and 19.0 ppd per employee.[5]

4.14.4.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a solid waste impact if it would:

- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

4.14.4.4 IMPACT DISCUSSION

UTIL-5	**Implementation of the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.**

[4] CalRecycle, 2022. Jurisdiction of Origin Waste Disposal, Altamont Landfill. Accessed at https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Origin/FacilitySummary on April 18, 2022.

[5] CalRecycle, 2022, Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report. Accessed at https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/slcp/capacityplanning/recycling/DiversionDisposal on April 18, 2022.

The amount of solid waste generated on a daily and annual basis for the project was based on a study conducted by USEPA for campgrounds, lodges, and organized overnight scout, church, and city camps.[6] Two different solid waste generation rates were used: one for the campers and counselors at 1.81 lb/person/day and one for the permanent residences on the property at 2.13 lb/person/day. The study also estimated that approximately 59 percent of the solid waste generated is food waste. The number of days that the campers and counselors would be at the site were determined, assuming 18 outdoor 5-day sessions, four 5-day summer sessions, and 12 weekend programs. The people in the permanent residences were assumed to be present 350 days/year. The solid waste generated by the project is provided in Table 4.14-9, *Solid Waste Generation Rates.*

TABLE 4.14-9 SOLID WASTE GENERATION RATES

Category	No. of People	Solid Waste Generation Rate (lb/person/day)	Solid Waste Generated (lb/day)	Total Days Per Year	Solid Waste Generated (lb/year)
Campers and Counselors	108	1.81	195	146	28,540
Family Residence	8	2.13	17	350	5,964
Caretaker's Residence	3	2.13	6	350	2,237
TOTAL			**219**		**36,741**

Source: The Mosaic Project, 2022; USEPA, 1971. Solid Waste Management in Recreational Forest Areas

The estimated solid waste generation rates of 1.81 lb/day for campers and counselors and 2.13 lb/day for permanent residents are well below the CalRecycle target of 4.9 ppd per resident. Therefore, the proposed project would not generate solid waste that exceeds State and local standards and would not impair the ability to attain the solid waste reduction goals. A total of 36,741 pounds/year or approximately 18 tons/year. This is a negligible quantity as compared to the annual disposal rate at Altamont Landfill of 1,099,100 tons/year. Since the landfill has an excess capacity of approximately 7,500 tons/day and the landfill is not scheduled to close until 2070, the amount of waste generated by the project would not affect the capacity of the landfill.

In addition, these calculations conservatively assume that all solid waste generated by the project would be transported to the local landfill. Over 59 percent of the waste generated by outdoor recreation facilities is food waste that can be recycled and composted. The project would incorporate solid waste reduction features, including a composting program and a food waste program. The proposed composting program would use manure from the chickens and goats mixed with food waste and green waste to provide mulch for an organic garden. Because the composting operation would store less than 500 cubic yards of materials at any given time and would process less than 5,000 cubic yards per year, it would be exempt from the SWRCB's Waste Discharge Requirements (WDRs) for commercial composting operations.

[6] US Environmental Protection Agency, 1971. Solid Waste Management in Recreational Forest Areas.

The Castro Valley Sanitary District provides solid waste collection and curbside services to residents for garbage, recyclables, and organic waste in the Canyonlands area. It has not been determined if the project would use these weekly services or plan to recycle and compost most of the waste materials on-site and contain the remaining waste in a roll-off trash enclosure for periodic pickup and disposal by ACI. Prior to the issuance of the building permit, the project applicant will submit a design for the refuse and recyclable storage facilities to the County for review and approval. In addition, the project will prepare a Debris Management Plan for construction and demolition debris that would divert 75 percent of inert waste and 50 percent of all remaining waste to the County for review and approval prior to the issuance of demolition and building permits.

Both construction and operational waste generated by the project represent an insignificant amount compared to the capacity of Altamont Landfill. Also, the project will implement a robust composting and food waste program, which will also serve as an educational opportunity for the campers. Therefore, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and the impact would be *less than significant.*

Significance Without Mitigation: Less than significant.

UTIL-6	**Implementation of the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.**

As discussed above, the project would comply with State requirements to reduce the volume of solid waste through recycling and organic waste diversion. Its per capita disposal rate of 2.13 lb/day or less for campers and permanent residents is well below the CalRecycle target of 4.9 ppd per resident. In addition, the project would comply with the ACMC, which requires that at least 75 percent of the inert solids and 50 percent of all remaining construction and demolition waste be diverted from the landfill. A Debris Management Plan will be developed and submitted to the County for approval prior to the issuance of demolition and construction permits.

Alameda County currently has a 67 percent landfill diversion rate and complies with all State and local regulations and requirements. In addition, the project plans to incorporate a food waste program and a small composting operation, which will further reduce the amount of organic and green waste generated during project operations. Compliance with applicable State and local regulations would result in a *less than significant* impact.

Significance Without Mitigation: Less than significant.

4.14.5 CUMULATIVE IMPACTS

UTIL-7	**The proposed project, in combination with past, present, or reasonably foreseeable projects, would not result in a significant cumulative impact with respect to utilities and service systems.**

Regarding water supply impacts, the project is proposing to develop its own public water system, using two on-site groundwater production wells. The project would have a cumulative impact if these wells would result in a decrease in groundwater supply for the area surrounding the project site. The area surrounding the site is sparsely populated, with scattered residential properties to the south and east and the Twining Vine Winery and Event Center to the north.

The project site and surrounding area are not in a designated groundwater basin and therefore are not subject to the requirements of a groundwater sustainability plan. The on-site groundwater wells will be pumped on an intermittent basis, typically less than 150 days/year, when the camp is in session. The average daily demand is 1.5 gpm and the maximum daily demand is 2.76 gpm, whereas the rated capacity of the wells is 7.7 gpm. Given the low pumping rates, the drawdown radius would not extend to or impact the neighboring properties. The project site is located in the Agriculture (A) zoning district of Alameda County and future dense residential development is not anticipated in this area. Therefore, cumulative impacts related to water supply would be *less than significant.*

All wastewater from the proposed project will be treated on-site with a wastewater treatment system and a leach field dispersal system. Therefore, the project would not convey wastewater to a municipal sewer system and would not be treated at a wastewater treatment plant. Therefore, cumulative impacts related to wastewater would be *less than significant.*

Stormwater generated at the project site would be conveyed to ten bioretention areas scattered throughout the site and temporarily retained and treated prior to discharge into Cull Creek. The project would comply with the MS4 permit requirements of the SF RWQCB and ACMC that require new development to mitigate impacts on downstream drainages. Potential changes related to stormwater flows, drainage, impervious surfaces, and flooding would be minimized by the implementation of stormwater control measures, retention, infiltration, and low-impact-development measures and review by the County's Public Works Agency to integrate measures to reduce potential stormwater drainage and flooding impacts. All cumulative projects in Alameda County would be subject to similar permit requirements and would be required to comply with various municipal codes and policies and County ordinances, as well as water quality regulations that control construction-related and operational discharge of pollutants in stormwater. Therefore, impacts related to stormwater infrastructure are *less than significant.*

The project site would generate minimal solid waste, because of the intermittent usage of the facilities and the robust food waste and organic composting program that would be implemented at the site. The amount of waste generated when camp is in session would be about 219 lb/day. Assuming 50 percent of the waste is recycled and composted on-site, the amount potentially transported to Altamont Landfill would be about 110 lb/day. Since Altamont Landfill has a maximum permitted capacity of 11,150 tons/day

and typically accepts only 33 percent of its daily permitted capacity, there is sufficient capacity for future development within Alameda County in terms of solid waste disposal. Also, Altamont Landfill has a closure date of 2070. Therefore, the project coupled with projected growth in the County would not exceed the capacity of the landfill and cumulative impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.15 WILDFIRE

This chapter describes the regulatory framework and existing conditions of the project site related to wildfire and the potential for the proposed project to result in wildfire impacts.

4.15.1 ENVIRONMENTAL SETTING

4.15.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations set forth to identify wildfire hazard areas and to reduce wildfire risks to new and existing structures. There are no federal regulations related to wildfires that are applicable to the proposed project.

State Regulations

CAL FIRE

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Board of Forestry and Fire Protection is a regulatory body within CAL FIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. The Board of Forestry and Fire Protection also promulgates regulations and reviews general plan safety elements that are adopted by local governments for compliance with statutes. Together, the Board and CAL FIRE protect and enhance the forest resources of all the wildland areas of California that are not under federal jurisdiction.

CAL FIRE Strategic Plans

CAL FIRE produced the *2019 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. The *2019 Strategic Fire Plan for California* focuses on fire prevention and suppression activities to protect lives, property, and ecosystems. In addition, CAL FIRE provides regulatory oversight to enforce State fire laws and delivers a land use planning and defensible space inspection program to local governments across the state.

CAL FIRE Fire Hazard Severity Zone Mapping

CAL FIRE designates fire hazard severity zones (FHSZs) as authorized under California Government Code Section 51175 et seq. CAL FIRE considers many factors such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather for the area.

The maps identify lands in California as falling within one of the following management areas: local responsibility area (LRA), state responsibility area (SRA), or federal responsibility area (FRA). Within each of these areas, a single agency has direct responsibility: in LRAs, local fire departments or fire protection districts are responsible; in SRAs, CAL FIRE is responsible; in FRAs, federal agencies, such as the US Forest

Service, National Park Service, Bureau of Land Management, US Department of Defense, US Fish and Wildlife Service, or Department of the Interior, are responsible.[1]

Within the LRAs, CAL FIRE designates lands as being within a Very High FHSZ or not. The LRA maps also show the Very High FHSZ and non-Very High FHSZ areas within the SRA and FRA, but do not differentiate lands within the SRA and FRA from each other (that is, SRA and FRA areas are mapped together).

Within the SRA, CAL FIRE designates Moderate FHSZs, High FHSZs, and Very High FHSZs. The SRA maps also indicate which lands are within the LRA and which are within the FRA, but do not show the hazard zones within the LRA and FRA.

California Office of Emergency Services

The California Office of Emergency Services (Cal OES) was established on January 1, 2009, and created by Assembly Bill (AB) 38, which merged the duties, powers, purposes, and responsibilities of the former Cal OES with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of State agency response to major disasters in support of local governments. Cal OES is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, man-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. In 2018, Cal OES completed a State Hazard Mitigation Plan, which designates FHSZs and Wildland Urban Interface (WUI) areas (Cal OES 2018).

California Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards posed by overhead power lines and nearby aerial communication facilities. The CPUC published a fire threat map—under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024—that adopted a work plan for the development of a utility high fire-threat district where enhanced fire safety regulations in Decision 17-12-024 apply.[2] The fire regulations require electrical utilities to:[3]

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in "Tier 2" (elevated fire threat) areas in the CPUC high fire-threat district within 12 months, and in "Tier 3" (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines in the high fire-threat district.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the high fire-threat district.

[1] Association of Bay Area Governments and Metropolitan Transportation Commission, 2018, White Paper: Bay Area Wildland Urban Interface Review of Risks, Plans, and Strategies, page 7.

[2] California Public Utilities Commission, https://ia.cpuc.ca.gov/firemap/, accessed March 29, 2021.

[3] California Public Utilities Commission, press release: CPUC Adopts New Fire-Safety Regulations, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF, accessed March 29, 2021.

California Code of Regulations

Title 14, California Code of Regulations, Chapter 7, *Fire Protection*, contains requirements for fire hazard reduction around buildings and structures in the SRA.

Subchapter 3, *Fire Hazard*, Section 1299.03, requires two zones of defensible space to be maintained at all times, whenever flammable vegetative conditions exist: Zone 1 extends 30 feet from each structure (or to the property line) and is more restrictive than Zone 2, and Zone 2 extends to 100 feet from each structure. Within Zone 1, all dead or dying vegetation within yards and on roofs or gutters must be removed; all dead tree and shrub branches must be removed and maintained around structures; exposed firewood piles are prohibited; and flammable vegetation and items are prohibited under combustible decks, balconies, and stairs. Within Zone 2, horizontal and vertical fuel separation must be created among shrubs and trees, dead and dying woody fuels must be removed; annual grasses and robs must be cut down to a maximum height of 4 inches; and all wood piles must have a minimum of 10 feet of clearance. Within both Zones 1 and 2, outbuildings and liquid propane gas storage tanks shall have minimum clearance distances of 10 feet to bare mineral soil and an additional 10 feet to flammable vegetation, and soil disturbance must be kept to a minimum on steep slopes.

Subchapter 2, *SRA/VHFHSV Fire Safe Regulations*, contains requirements for new development with the SRA and Very High FHSZ related to emergency access and egress, signing and building numbering, emergency water standards, and fuel modification standards.

California Government Code

The State of California is responsible for the prevention and suppression of wildfires on land outside incorporated boundaries of a city. In 1991, the State Legislature adopted the Bates Bill (Government Code Sections 51175 through 51189) following the fires in the Oakland Hills. The bill requires CAL FIRE to identify and classify areas in LRAs that have a “very high fire severity” hazard for wildfires. A local agency is required to adopt CAL FIRE’s findings within 120 days of receiving recommendations from CAL FIRE, pursuant to Government Code Section 51178(b), or propose modifications in accordance with State law.

California Public Resources Code

The Board of Forestry and Fire Protection is authorized in the Public Resources Code (PRC Sections 4290 and 4291) to adopt minimum fire safety standards for new construction in Very High FHSZs in SRAs. The Board published its fire safety regulations in the California Code of Regulations, Title 14. (These standards may differ from those in Appendix D of the California Fire Code.) Fire safe regulations currently address:

- Article 1: Administration of ordinance and defensible space measures (Chapter 49)
- Article 2: Emergency access and egress standards (roadways) (Appendix D)
- Article 3: Standards for signs identifying streets, roads, and buildings (Chapter 5)
- Article 4: Emergency water standards for fire use (Appendix B, BB)
- Article 5: Fuel modification standards (Chapter 49)

PRC Sections 4291 et seq. require that brush, flammable vegetation, or combustible growth be removed within 100 feet of buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials.

PRC Section 4290 requires the State Board of Forestry and Fire Protection to adopt regulations implementing minimum fire safety standards for defensible space that would be applicable to lands within the SRA and lands within Very High FHSZs.

PRC Section 4442 regulates the use of internal combustion engines that use hydrocarbon fuels on forest-covered land, brush-covered land, and grass-covered land. Internal combustion engines, like those used in construction, must be equipped with a spark arrester, which is a device used for removing and retaining carbon and other flammable particles from the exhaust flow for engines that use hydrocarbon fuels. These engines must be maintained in effective working order or be constructed, equipped, and maintained for the prevention of fire.

California Building Code

The California Building Code (CBC), contained in Part 2 of Title 24 of the California Code of Regulations, identifies building design standards, including those for fire safety. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Chapter 7A of the CBC, *Materials and Methods for Exterior Wildfire Exposure*, prescribes building materials and construction methods for new buildings in a FHSZ (referred to in the CBC as a "Wildland-Urban Interface Fire Area"). Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. In addition to the CBC, Section 2327, *Camping Cabins*, of Chapter 2.2, Division 1 of Title 25 of the California Code of Regulations includes special requirements that are specifically applicable for camping cabins.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Chapter 49 of the CFC, *Requirements for Wildland-Urban Interface (WUI) Fire Areas*, prescribes construction materials and methods in FHSZs. These requirements generally parallel CBC Chapter 7A.

Local Regulations

Alameda County Community Wildfire Protection Plan

The *Alameda County Community Wildfire Protection Plan*[4] (CWPP), adopted in January 2015, is intended to provide a foundation for and facilitate continued collaboration between the multiple agencies providing fire protection within Alameda County. The purpose of the CWPP is to protect human life and reduce the loss of property, critical infrastructure, and natural resources due to wildfire. The CWPP provides fire risk reduction measures through the following actions:

- Increased collaborative planning and cooperative actions that will build useful relationships between communities and agencies.
- Reduction of hazardous fuels in the WUI.
- Creation and maintenance for defensible space for structures and properties.
- Reduction of structural ignitability hazards.
- Planning of evacuation protocols and drills.

Chapter 5 of the CWPP provides information about building techniques to reduce the risk of structure ignition, and lists retrofit options to improve the ability of existing structures to survive wildfires.

Alameda County Emergency Operations Plan

The Alameda County Office of Homeland Security and Emergency Services' (OHSES) Emergency Operations Plan (EOP), adopted in August 2012, establishes policies and procedures, in addition to assigning responsibilities to ensure the effective management of emergency operations within the Alameda County Operational Area. Cities and communities within the county participate in the Alameda County OHSES coordination of emergency management activities. Emergency operations are split in to five phases: 1) Prevention Phase, 2) Preparedness Phase, 2) Response Phase, 3) Recovery Phase, and 4) Mitigation Phase.

Castro Valley General Plan

The Alameda County General Plan consists of three area plans, which contain goals, policies, and actions for circulation, land use, open space, conservation, safety, and noise for their respective geographic areas. The proposed project is located within the planning area for the Castro Valley General Plan. Section 10.1 of the Castro Valley General Plan addresses fire hazards in this area of the county. Table 4.15-1 lists goal and policy from the Natural Hazards and Public Safety chapter of the Castro Valley General Plan that are relevant to the proposed project.

[4] Diablo Fire Safe Council, 2015, Community Wildfire Protection Plan Update, Alameda County, http://www.diablofiresafe.org/pdf/2015_Draft_AlCo_CWPP_Update.pdf, accessed on March 29, 2021.

TABLE 4.15-1 RELEVANT CASTRO VALLEY GENERAL PLAN WILDFIRE POLICIES

Policy No.	Text
Goal 10.1-1	Protect lives, property, and the environment by working with Alameda County Fire Department to reduce fire hazards.
Policy 10.1-1	**Wildland Fire Preparedness.** Increase preparedness for and reduce impacts from wildland fires.

Source: Alameda County Community Development Agency, 2012, Castro Valley General Plan.

4.15.1.2 EXISTING CONDITIONS

Wildfire Background

Wildfires burn in many types of vegetation, including forest, woodland, scrub, and grassland. The San Francisco Bay area's Mediterranean-like climate, lack of summer rains, wind-conducive topography with steep canyons and swales, and fire-adapted vegetation predisposes the area to periodic burns. Wildfires have grown in frequency and intensity throughout the western United States during the past several years, particularly in California, where prolonged drought and hot, dry temperatures have been common.

Types of Wildfires

There are three basic types of wildland fires:

- Crown fires burn trees to their tops; these are the most intense and dangerous wildland fires.
- Surface fires burn surface litter and duff. These are the easiest fires to extinguish and cause the least damage to the forest. Brush and small trees enable surface fires to reach treetops and are thus referred to as *ladder fuels*.
- Ground fires occur underground in deep accumulations of dead vegetation. These fires move very slowly but can be difficult to extinguish.[5]

Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in either of two ways: 1, woody root crowns or burls below the soil surface that survive a fire and re-sprout; and, 2, shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire and produce seeds requiring intense heat from a fire to germinate.[6] Many species of conifers have seed cones requiring fire to open.[7] Between 2010 and 2017 wildfires in California burned about 265,000 acres of forest land, 207,000 acres of shrub vegetation, 99,000 acres of grassland, 18,000 acres of desert vegetation, and 14,000 acres of other vegetation types.[8]

[5] Natural Resources Canada, 2021, Fire Behavior, https://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/13145, accessed February 4, 2022.

[6] Rundel, Philip, and Gustafson, Robert, April 2005, *Introduction to the Plant Life of Southern California*.

[7] California Department of Forestry and Fire Prevention, 1999, *Learning to Live with Fire*, https://www.lmfire.org/sites/default/files/fileattachments/prevention/page/1941/92a44bde016842a920f79387ce8f6312.pdf, accessed February 11, 2022.

[8] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, *2018 Strategic Fire Plan for California*, https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf, accessed February 4, 2022.

Wildfire Causes

Though wildfires can occur from natural origins (e.g., lightning) and can play an important role in certain ecosystems, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires and accounted for 44 percent of acreage burned.[9] A study by the East Bay Municipal Utility District, which is the utility district serving the project site and surrounding area, observing fires in their watershed, found that only 2 of the 174 fires analyzed were caused by lightning, the rest being human-caused.[10] Human-caused wildfires can be from debris burning, arson, equipment use, and power-line failures.

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires occurred within half a mile of a road; and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within about 650 feet of a road. The study concluded that the increase in human-caused ignition greatly outweighed the benefits of increased access for firefighters.[11]

The number of large wildfires in California (i.e., greater than 1,000 acres) has increased from approximately 25 to 55 per year since the 1960s.[12] At the same time, the average mean temperature and length of fire season are increasing. The warmer temperatures, reduced snowpack, and earlier spring snowmelt result in longer and more intense dry seasons that make forests more susceptible to wildfires.[13] The encroachment of urban development into wildland areas has been another contributing factor that increases the risk of human-caused wildfires.

Power lines can ignite wildfires several ways:

- Downed lines: downed power lines can produce arcing that can ignite vegetation.
- Vegetation contact: a branch contacting two conductors for a sufficient duration may ignite the branch; a tree falling on a line can cause a downed line.
- Conductors can slap together, creating arcing and ejecting hot metal particles that can ignite flammable matter on the ground.
- Equipment failures: As circuit components deteriorate, they can arc and spark and thus ignite nearby flammable matter.[14]

[9] Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11, https://www.pnas.org/content/pnas/114/11/2946.full.pdf, accessed March 29, 2021.

[10] Alameda County, 2015. Community Wildfire Protection Plan 2015 Update. http://www.diablofiresafe.org/pdf/Alameda_County_CWPP_Update_3_2015.pdf, accessed March 29, 2021.

[11] Pacific Biodiversity Institute, 2007, Roads and Wildfires, http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf, accessed March 29, 2021.

[12] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, *2018 Strategic Fire Plan for California*.

[13] California Department of Forestry and Fire Protection, 2020, 2020 Fire Season, https://www.fire.ca.gov/incidents/2020/, accessed March 29, 2021.

[14] Texas Wildfire Mitigation Project, 2014, How Do Power Lines Cause Wildfires? https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires, accessed February 11, 2022.

Wildfire Trends in Recent Decades

Wildfire season in the West recently has lengthened from an average of five to seven months, and the number of large wildfires (>1,000 acres) has increased from 140 to 250 per year. This is occurring as average annual temperature in the West has risen by nearly two degrees Fahrenheit since the 1970s and the winter snowpack has declined. Increases in acres burning can now be attributed, in part, to climate change.[15] Wildfires now burn year-round in California.[16] Warming and drying due to human-caused climate change is estimated to have approximately doubled the total area burned by forest fire in the western United States between 1984 and 2015 compared to the total area expected to have burned without climate change.[17] Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate after fire—and increase invasion of non-native grasses, that is, tend to convert native shrublands to non-native grassland.[18] Non-native grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced; thus, such conversion exacerbates wildfire hazards.[19]

Reducing Wildfire Hazards

Wildfire hazards are reduced by reducing the amount of fuel in the target area. This is done several ways:

- Prescribed burns: An intentionally set fire used to reduce fuel load in an area; the *prescription* is a set of conditions that considers the safety of the public and fire staff, weather, and probability of meeting the burn objectives.
- Allowing naturally occurring wildfires in remote areas to burn.
- Thinning vegetation: Cutting and removal of surface vegetation, shrubs, and small trees and, in some cases, thinning dense stands of trees.[20] Areas where vegetation is reduced include fuel breaks, which are strips of vegetation that have been modified to control a fire burning into it.[21]

[15] GEOS Institute, 2018, Open Letter to Decision Makers Concerning Wildfire in the West, https://world.350.org/climate-convos-ncw-2020/files/2018/08/scientist-letter-wildfire-signers-2018-08-27-1.pdf, accessed February 4, 2022.

[16] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, *2018 Strategic Fire Plan for California*, https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf, accessed February 4, 2022.

[17] Abatzoglou, John, and Williams, A. Park, 2016, *Impact of Anthropogenic Climate Change on Wildfire Across Western US Forests*, https://www.pnas.org/content/113/42/11770, accessed February 11, 2022.

[18] United States Geological Survey, 2012, *Fire-Driven Alien Plant Invasion in a Fire-Prone Community*, https://pubs.er.usgs.gov/publication/70124288, accessed February 11, 2022.

[19] Non-native annual grasses are more flammable than trees and shrubs because the grasses complete their life cycle in the winter and spring, leaving highly flammable dead plant material in the summer and fall fire season; and because they burn in a wider variety of weather conditions than native shrubs and trees do. See University of California Division of Agriculture and Natural Resources, 2009, *Invasive Plants and Wildfires in Southern California*, https://anrcatalog.ucanr.edu/pdf/8397.pdf, accessed February 4, 2022.

[20] California Department of Forestry and Fire Prevention, 2022, Vegetation Management Program, https://www.fire.ca.gov/programs/resource-management/resource-protection-improvement/vegetation-management-program/, accessed February 11, 2022.

[21] California Department of Forestry & Fire Protection, 2019, *CAL FIRE Fuel Breaks and Use During Fire Suppression*, https://www.fire.ca.gov/media/5585/fuel_break_case_studies_03212019.pdf, accessed February 4, 2022.

However, many scientists assert that vegetation thinning is ineffective at reducing wildfire risk. Thinning large trees can increase the rate of fire spread by opening up the forest to increased wind velocity, damage soils, introduce invasive species that increase flammable understory vegetation, and impact wildlife habitat. As the climate changes, most fires will occur in extreme fire-weather, that is, high winds and temperatures, low humidity, and low vegetation moisture. Fires will affect large landscapes in such weather, regardless of thinning.[22] Such experts also dispute the effectiveness of *forest* thinning at reducing wildfire risk, noting that most of the large wildfires in California in 2017 to 2018 were not in forest habitat.[23] These scientists instead recommend ensuring that existing homes are as fire-resistant as possible—for example, through fire-resistant building materials, spark arresting vents, rain-gutter guards, and creating defensible space within 100 feet of structures; and discouraging further residential growth in ecosystems that evolved with fire.[24]

Wildfire Risks

Wildfire Spread to Structures

Wildfires ignite structures in three ways: burning embers landing on the structure or flammable material next to the structure, direct flame contact, and radiant heat from fire close to the structure.[25] Embers are the most important cause of home ignition. Two out of every three homes destroyed during the 2007 Witch Creek fire in San Diego County were ignited either directly or indirectly by wind-dispersed, wildfire-generated, burning or glowing embers and not from the actual flames of the fire.[26] Embers ignite structures by entering through attic vents; igniting flammable materials around the home (litter in the roof gutter; wood stacks; or wood fencing); or finding their way under roofing materials.[27]

CAL FIRE estimated in 2010 that there were about three million housing units in California in FHSZs and potentially at risk from wildland fire—that is, just over 20 percent of the total housing units in the state.[28]

According to CAL FIRE data, approximately 95 percent of structures seriously damaged in California wildfires from 2013 to 2020 took place in FHSZs in the FRA, SRA, or LRA.[29]

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[22] GEOS Institute, 2018, Open Letter to Decision Makers Concerning Wildfire in the West, https://world.350.org/climate-convos-ncw-2020/files/2018/08/scientist-letter-wildfire-signers-2018-08-27-1.pdf, accessed February 4, 2022.

[23] California Chaparral Institute, 2018, It's about Flammable Homes, not Forests, https://californiachaparralblog.wordpress.com/2018/11/17/its-about-flammable-homes-on-flammable-terrain/, accessed February 11, 2022.

[24] GEOS Institute, 2018, Open Letter to Decision Makers Concerning Wildfire in the West, https://world.350.org/climate-convos-ncw-2020/files/2018/08/scientist-letter-wildfire-signers-2018-08-27-1.pdf, accessed February 4, 2022.

[25] Congressional Research Service, 2012, *Wildfire Damages to Homes and Resources: Understanding Causes and Reducing Losses*, https://fas.org/sgp/crs/misc/RL34517.pdf, accessed February 4, 2022.

[26] FIRESafe MARIN, 2022, Embers, http://www.firesafemarin.org/wildfire-embers, accessed February 11, 2022.

[27] California Chaparral Institute. Protecting Your Home from Fire, https://www.californiachaparral.org/fire/protecting-your-home/, accessed February 11, 2022.

[28] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, *2018 Strategic Fire Plan for California*, https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf, accessed February 4, 2022.

[29] CapRadio, 2021, *After years of delays, CalFire says updated and expanded wildfire hazard maps are on their way*, https://www.capradio.org/articles/2021/12/20/after-years-of-delays-calfire-says-updated-and-expanded-wildfire-hazard-maps-are-on-their-way/, accessed March 6, 2022.

Air Pollution from Wildfire

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into the lungs. They can cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is even linked to premature death. Some populations are more sensitive than others to smoke: for instance, people with heart or lung diseases; the elderly; children; people with diabetes; and pregnant women.[30]

During the Camp Fire in Butte County, California in November 2018 portions of northern California were identified as having the worst air pollution in the world.[31]

Power Outages

Power outages relating to wildfire can occur either from deliberate shutoff of power in order to reduce the risk of wildfires that might occur from power lines damaged during dry, hot winds, or as a result of wildfire damage to utilities. This has obvious consequences, such as the inability to operate vulnerable and critical systems for day-to-day life, such as fuel, water, communication, heating and cooling, and other systems that require electricity.

Debris Flows After Wildfire

Post-fire landslide hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high-intensity rainfall events, and flows that are generated over longer time periods that are accompanied by root decay and loss of soil strength. Post-fire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles.

Fires increase the potential for debris flows in two ways:

- Fires may bake soil into a hard crust that repels water; and
- Destroying vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil.[32]

Post-fire debris flows are most common in the two years after a fire; they are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas. In southern California, as little as 0.3 inches of rainfall in 30 minutes has triggered debris flows, and any

[30] Airnow, 2017, How Smoke from Fires Can Affect Your Health, https://www.airnow.gov/air-quality-and-health/how-smoke-from-fires-can-affect-your-health/#:~:text=The%20biggest%20health%20threat%20from,even%20linked%20to%20premature%20death, accessed February 11, 2022.

[31] Vox.com, 2018, Northern California still has dangerous air quality due to wildfire smoke, https://www.vox.com/energy-and-environment/2018/11/16/18098461/aqi-san-francisco-worst-air-quality-world-epa, accessed February 11, 2022.

[32] United States Geological Survey, 2018, New post-wildfire resource guide now available to help communities cope with flood and debris flow danger, https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news_science_products=1#qt-news_science_products, accessed February 11, 2022.

storm that has intensities greater than about 0.4 inches per hour can produce debris flows.[33] The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses.[34]

Debris flows killed 23 people in Montecito in Santa Barbara County in January 2018 after the Thomas Fire burned near the area in December 2017.[35]

Wildland Urban Interface

According to Cal OES, a WUI is defined as any area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.[36] Developments in the WUI exacerbate fire occurrence and fire spread in several ways, including:

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to buildup of fuel and increasing wildfire hazard further.[37]

Wildfire Hazards in the Project Area

Wildfire History

The varied geography, vegetation, and weather contribute to a history of fires in Alameda County. The Oakland Hills Fire in 1991, also known as the Tunnel Fire," was among the most damaging, with 25 deaths, 150 injuries, displacement of 10,000 persons, and destruction of over 3,400 dwellings.[38] The wildfire closest to the project occurred in July 1954 and burned approximately 312 acres approximately 3 miles north of the project site.[39] Fifteen fires between 1923 and 1991 in the vicinity of Alameda County show a pattern of ignitions during critical Diablo Wind conditions in the fall.[40]

[33] United States Geological Survey, California Water Science Center, 2018, Post-Fire Flooding and Debris Flow, https://ca.water.usgs.gov/wildfires/wildfires-debris-flow.html, accessed February 11, 2022.

[34] United States Geological Survey, 2019, Post-Fire Debris Flow Facts, https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx, accessed February 11, 2022.

[35] United States Geological Survey, 2019, Post-Fire Debris Flow Facts, https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx, accessed February 11, 2022.

[36] California Governor's Office of Emergency Services, 2018, *2018 California State Hazard Mitigation Plan*, Section 8.1, page 515.

[37] Radeloff, Volker; Helmers, David; Kramer, H., et al., 2018, Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk. Proceedings of the National Academy of Sciences (PNAS): Volume 115 No. 13, https://www.pnas.org/content/pnas/115/13/3314.full.pdf, accessed June 28, 2022.

[38] Alameda County Community Development Agency, 2014. Safety Element, Alameda County. https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf, accessed March 29, 2021.

[39] California Department of Forestry and Fire Protection, California Fire Perimeters 1878-2020, https://databasin.org/maps/new/#datasets=fbbc0115307748bab3887dcfc81e1aa5, accessed April 26, 2022.

[40] Alameda County, 2015. Community Wildfire Protection Plan 2015 Update. http://www.diablofiresafe.org/pdf/Alameda_County_CWPP_Update_3_2015.pdf, accessed March 29, 2021.

Wildfire Hazard Areas

The FHSZs relative to the project site are shown in Figure 4.15-1, *Fire Hazard Severity Zones*. The project site is located within a High FHSZ in the SRA.[41] The nearest Very High FHSZ to the project site is approximately 2 miles west of the project site.

The CPUC high fire-threat districts relative to the project site is shown in Figure 4.15-2, *California Public Utilities Commission High Fire-Threat Districts*. The project site is located in a Tier 3 high fire-threat district for extreme fire threat, which is the highest fire threat classification under the CPUC.[42]

CAL FIRE has also identified WUIs statewide. The CAL FIRE WUI around the project site is shown in Figure 4.15-3, *Wildland Urban Interface*. CAL FIRE separates the WUI into "influence," "intermix," and "interface" zones. CAL FIRE maps the project site as being within the WUI intermix zone, which is characterized by housing development interspersed in an area dominated by wildland vegetation subject to wildfire.

Project Site Conditions Relevant to Wildfire

Topography and Landcover

As described in Chapter 3, *Project Description*, of this Draft EIR, the project site is heavily vegetated. Cull Creek runs through the eastern portion of the site from north to south, generally parallel with and west of Cull Canyon Road. Development on-site includes an existing garage building, paved patio, and driveways with drainage swales. The site elevation ranges from approximately 72 feet above mean sea level (msl) along Cull Creek to approximately 150 feet above msl in the southwestern portion of the site, as described in Chapter 4.5, *Geology and Soils*, of this Draft EIR. There are large, semi-flat, open areas adjacent to the garage. Areas of development under the proposed project are contained in these large semi-flat areas. The remainder of the project site is covered in steep bay/oak woodlands on an east-facing slope, with minor drainages.

Weather and Winds

The San Francisco Bay area has a Mediterranean-like climate with a rainy season during the winter and dry season during the summer. The National Weather Service issues "red flag" weather day warnings when certain weather elements could lead to increased wildfire risk, such as low relative humidity and strong winds. Extreme but periodic red-flag weather days occur in the area surrounding and including the project site from the presence of strong, hot, dry offshore winds, referred to in the San Francisco Bay area as "Diablo Winds" since they come from the north and northeast toward Mount Diablo, which is roughly 12 miles northeast of the project site. These winds carry dry air at high velocity and are especially dangerous during the drier months of the year in late summer and fall. The warmer weather, lower humidity, and presence of these winds make wildfires more likely to occur in the region during this time of year.[43]

[41] California Department of Forestry and Fire Protection, 2007, Fire Hazard Severity Zones in SRA, Alameda County. https://osfm.fire.ca.gov/media/7271/fhszs_map1.pdf, accessed March 29, 2021.

[42] California Public Utilities Commission, 2019, CPUC Fire Map, https://ia.cpuc.ca.gov/firemap/, accessed March 29, 2021.

[43] Diablo Fire Safe Council, 2015, Community Wildfire Protection Plan 2015 Update, Alameda County.

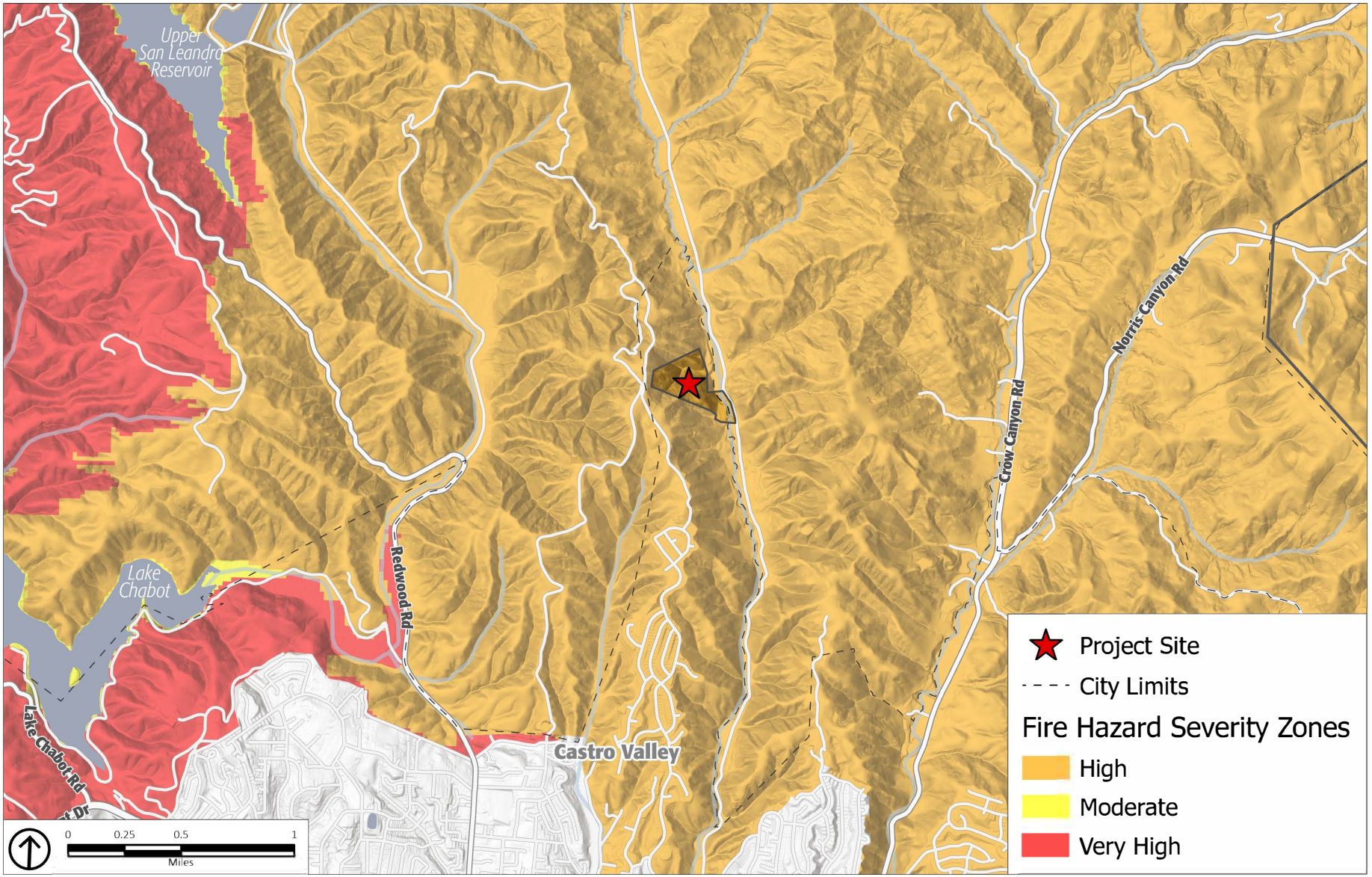
Fire Protection Resources

CAL FIRE is the State level resource for fire management and forestry protection. Alameda County has various local fire protection agencies associated with the County, incorporated cities, and others. The governing body for the Alameda County Fire Department (ACFD) is the Alameda County Board of Supervisors, and it was formed in 1993 as a consolidation of the Castro Valley Fire Department, Eden Consolidated Fire Protection District, and County Fire Patrol. The ACFD serves unincorporated Alameda County (excluding Fairview), including the project site, as well as the cities of San Leandro, Dublin, Newark, Union City and Emeryville, the Lawrence Berkeley National Laboratory, and the Lawrence Livermore National Laboratory. The ACFD is comprised of 29 fire stations and 35 companies serving a population of around 394,000, and includes over 400 personnel and 100 reserve firefighters offering advanced life support, fire suppression, hazardous materials response, urban search and rescue, water rescue, community outreach and education, disaster preparedness, fire prevention and code compliance, and regional dispatch.[44]

In addition, the Alameda County Sheriff's Office operates the County Office of Emergency Services. This includes, among other responsibilities, coordinating response to and recovery from any disaster or unusual occurrence, including fire and rescue, and serving as the Operational Area Coordinator of emergency management impacting Alameda County.[45]

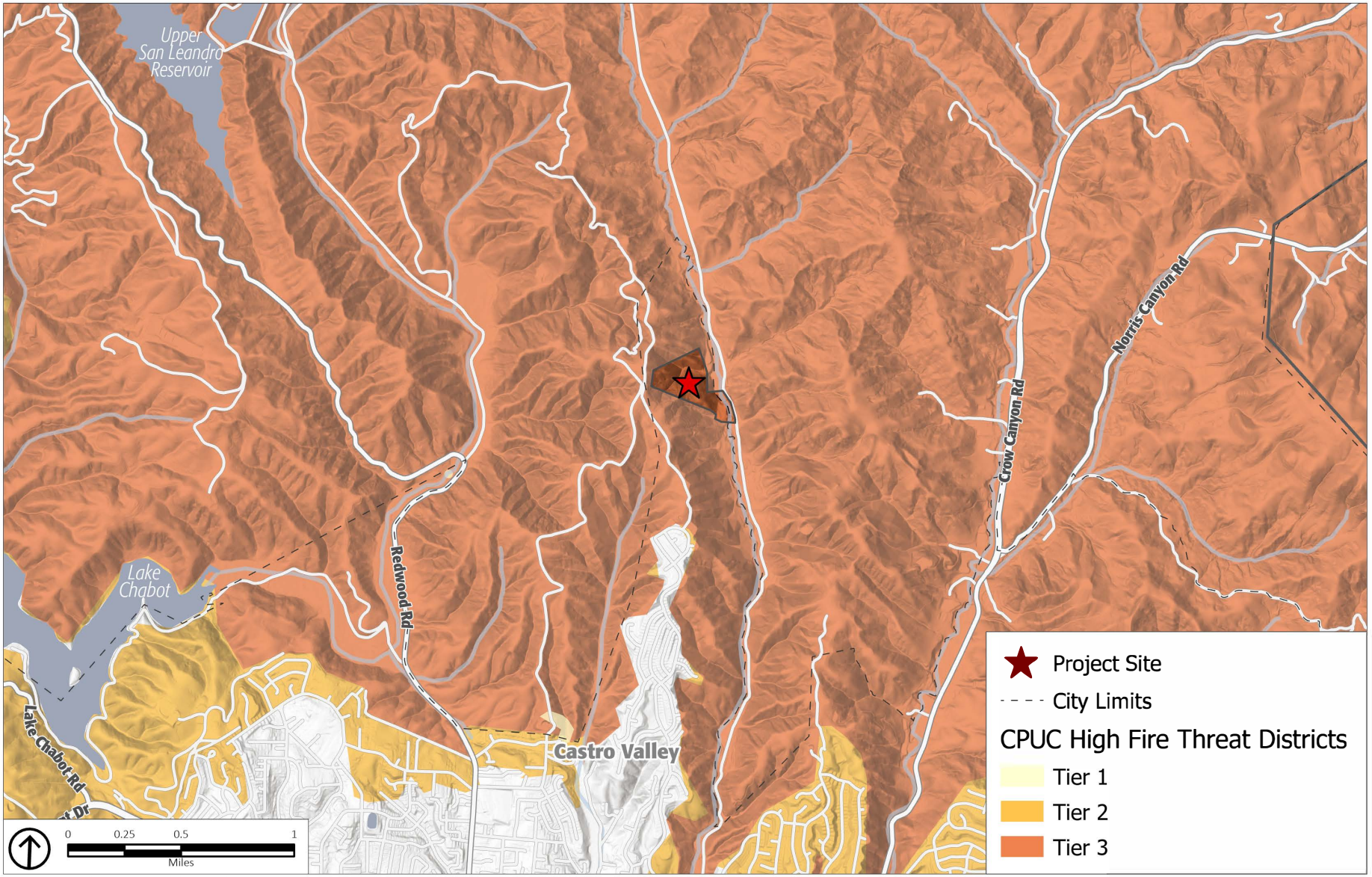
[44] Alameda County Fire Department, About Us, https://fire.acgov.org/AboutUs/aboutus.page?, accessed March 29, 2021.

[45] Alameda County Sheriff's Office, Public Policies: 5.15 GO – Emergency Management, https://www.alamedacountysheriff.org/about-us/public-policies, accessed December 9, 2021.



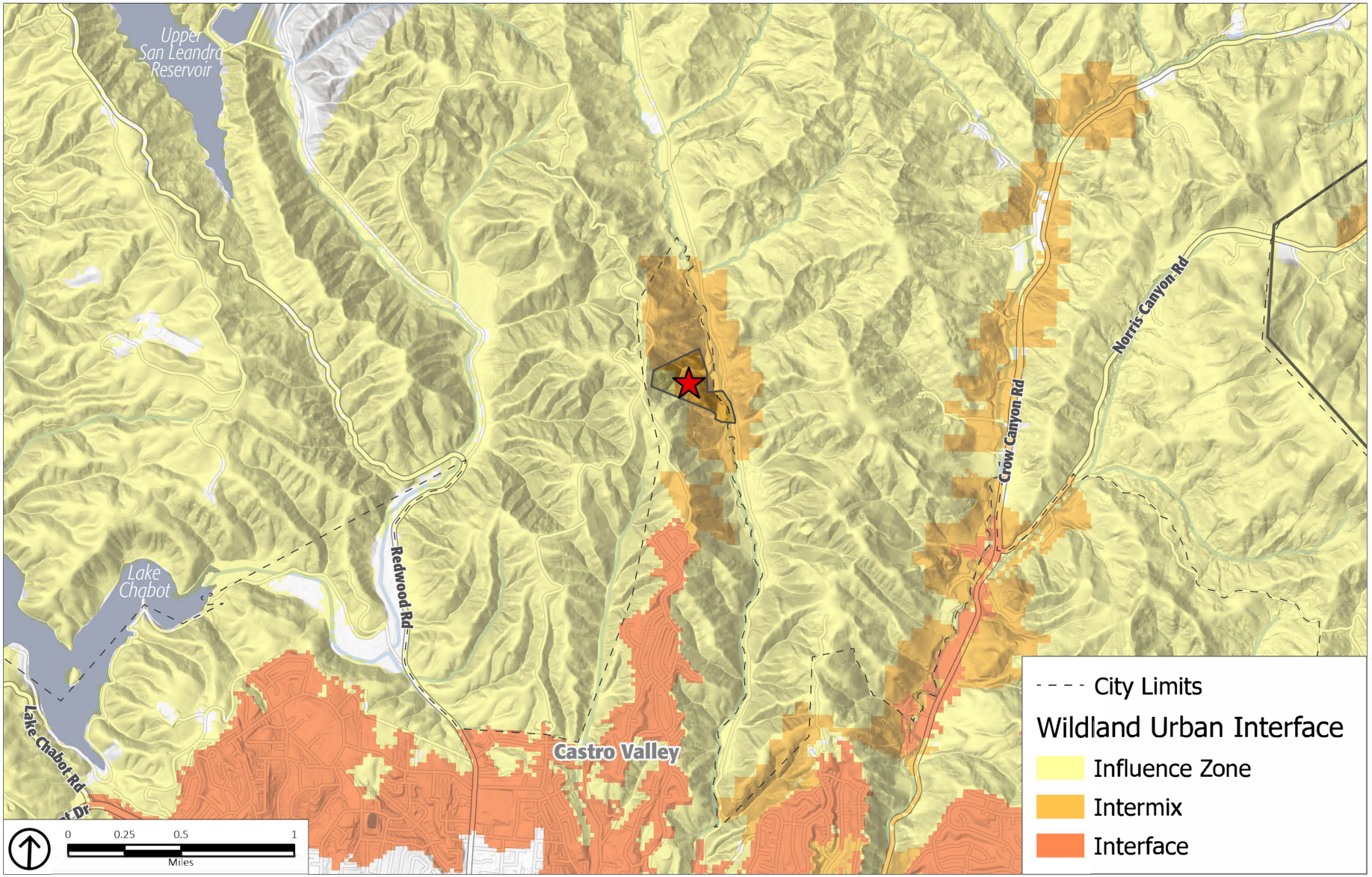
Source: California Department of Forestry and Fire Protection, 2020.

Figure 4.15-1
Fire Hazard Severity Zones



Source: California Public Utilities Commission, 2021; CalFIRE, 2021.

Figure 4.15-2
CPUC High Fire Threat Districts



Source: California Department of Forestry and Fire Protection Fire and Resource Assessment Program (FRAP), 2021.

Figure 4.15-3
Wildland Urban Interface

4.15.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant wildfire impact if, in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, it would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
5. In combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to wildfire.

4.15.3 IMPACT DISCUSSION

WF-1	**The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.**

The proposed project would create a significant impact if it would substantially impair an emergency response plan or emergency evacuation plan during construction or operation.

Chapter 4.7, H*azards and Hazardous Materials*, evaluates potential impacts associated with emergency response and evacuation plans and impact discussion HAZ-6 finds that the proposed project would not impair implementation of or physically interfere with an emergency response plan or emergency evacuation plan.

As described in Section 4.15.1.2, Existing Conditions, emergency response and evacuation issues are primarily addressed by the Alameda County Sheriff's Office, in coordination with the ACFD and CAL FIRE. In addition, the proposed project would fall under the Alameda County CWPP and the Alameda County EOP, which provide a foundation for fire protection within Alameda County and establish policies and procedures for emergency situations, such as wildfire, respectively. Compliance with these regulations helps to reduce the occurrence or likelihood of fire-related emergencies, and therefore helps to avoid impairment of an adopted emergency response or evacuation plan.

The proposed project would not alter any existing roadways. Emergency vehicle access to the project site would be provided via two driveways on Cull Canyon Road and a 20-foot-wide fire access lane extending through the site to the proposed cabin area of the project.

In addition, as described in Chapter 4.12, *Transportation*, due to the size and nature of the proposed project, the proposed project would contribute a nominal amount of traffic to the local roadway system.

WILDFIRE

The project would not add permanent on-site residents, and traffic to and from the project site would be concentrated during specific timeframes of the week. During the months of the year in which the project is operational, students, along with teachers and aids, attending the camp for the week would be transported to and from the site in two to three buses, and occasionally one or two vans/shuttles as well. A small number of teachers and/or aids may travel to the site via personal vehicle and would be expected to travel outside of the student arrival/departure time as they would be on-site prior to arrival for setup and would stay on-site following departure for cleanup. Employees would reside on-site during camp weeks. Arrival would occur on Mondays (between 10:00 a.m. and 12:00 p.m.) and departure would occur on Fridays (between 1:00 p.m. and 3:00 p.m.). For the purpose of traffic capacity analysis, the Transportation Research Board's *Highway Capacity Manual* sets forth that bus trips be converted to passenger car equivalents; given the rolling terrain of Cull Canyon Road, a larger conversion factor is used. Using the methodology in the Highway Capacity Manual, the proposed project would generate the equivalent of 22 vehicle trips during the Monday arrival period and Friday departure period.[46] Taking into account project staff and delivery vehicles, the proposed project is expected to generate 51 maximum daily trips.[47] Cull Canyon Road has a daily volume of 420 vehicles; the project's maximum daily trip volume therefore represents 12 percent of Cull Canyon Road's daily volume.[48]

During an evacuation event, project occupants would evacuate to the south via Cull Canyon Road, as Cull Canyon Road does not provide through access to any roadways to the north. As described in Chapter 3, *Project Description*, the project includes a Fire Safety and Emergency Response Plan to establish protocols for training employees about emergency response and fire prevention, protection, and suppression activities. Under the proposed Fire Safety and Emergency Response Plan, the project would implement the following procedures related to emergency response and emergency evacuation:

- All staff and employees would be trained in evacuation and notification procedures. All staff would be required to attend a training session yearly to learn and practice evacuation procedures.
- Project staff would be tested to verify that they know how to evacuate their work areas and perform their fire drill duties during in an emergency.
- An emergency drill would be held within the first 24 hours of the beginning of each program session. When conducting the emergency drill, project staff would identify people needing special assistance and put in place any necessary special accommodations.
- Project staff would conduct interactive role plays to practice how to respond during different scenarios. Prior to the role plays and drills, the following measures would be implemented:
  - Ensure that staff is familiar with the location of all fire alarms and extinguishers, evacuation routes, and Safety Zones.
  - Demonstrate how to properly use fire extinguishers, fire blankets, and fire hoses.
- The Mosaic Project subscribes to Zonehaven AWARE "ACALERT '' used by Alameda County Emergency Services to report zone-specific emergencies, e.g., area wildfires.
- When evacuation is required, the project would employ all available notification methods to notify occupants (e.g., intercom, alarms, walkie talkies).

[46] W-Trans, 2022, Focused Traffic Study for the Mosaic Project, page 2.
[47] W-Trans, 2022, Focused Traffic Study for the Mosaic Project, Table 1.
[48] W-Trans, 2022, Focused Traffic Study for the Mosaic Project, page 1.

- At least once per quarter, the project would invite a fire department representative to review the fire drill exercise to verify its effectiveness.
- Copies of a project-specific Fire Safety & Emergency Response Guide would be kept easily accessible for all on-site staff. Staff would review and update the Guide and its procedures a minimum of once per calendar quarter.
- Emergency numbers would be posted in easily visible places throughout the site. All buildings would have posted written fire evacuation procedures, included detailed instructions and numbers for contacting emergency personnel. All buildings would also have posted maps of evacuation routes that indicate the locations of fire alarms, fire extinguishers, and safe gathering zones.
- Appropriate safety signage would be posted nearby each building and throughout the site.
- Through an emergency evacuation agreement that was been established between the proposed project and the Castro Valley Unified School District, in case of the need for emergency evacuation, the Castro Valley Unified School District will provide two available school buses. Each school bus holds 50 individuals, and would bring the campers to Canyon Middle School, located seven minutes away from the proposed project. In the event that Canyon Middle School is not a safe evacuation site, another Castro Valley Unified School District facility will be used.
- Prior to their child's session, parents would be given the following instructions in case of an emergency: "Do NOT come in individual cars to pick up your child. This would cause traffic and disrupt evacuation procedures. We will utilize nearby school buses to quickly evacuate everyone to a nearby school. Your child's school will arrange further transportation."
- When there is a need to evacuate, all staff and campers would gather in the parking lot. If this area is not accessible, everyone would gather between the creek and the road on the south side of the property. Campers would line up according to their cabin group (as practiced in the emergency drills) and assigned staff would conduct a roll call.
- Staff would comply with all emergency direction as provided by the County of Alameda Fire Department.
- If deemed safe, the project site and project buildings may be utilized as a shelter center for local residents to secure safety in the event of an emergency.

The proposed project would not alter the existing area in a way that could result in emergency evacuation impairment, such as with adding a significant permanent population to the area or altering traffic routes. The proposed project would also adhere to fire protection-related regulations and emergency procedures applicable within Alameda County and implement rigorous protocols for emergency response and emergency evacuation, as described above. Therefore, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and impacts would be *less than significant.*

Significance Without Mitigation: Less than significant.

WF-2	**The proposed project could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.**

The project site is in a High FHSZ in the SRA. The proposed project would not change prevailing winds. However, due to project site's location within a High FHSZ, future occupants of the project site, like all residents within or in proximity to FHSZs, would be subject to risks associated with wildfire hazards, including exposure to pollutant concentrations and the potential for the spread of a wildfire. This impact analysis considers whether the proposed project would exacerbate these risks.

Development under the proposed project would occur within the semi-flat areas of the project site; the remainder of the project site is covered in steep, east-facing slopes with minor drainages. The site elevation ranges from approximately 72 feet above msl to approximately 150 feet above msl. Grading activities would occur during site preparation for the development of the proposed project's buildings and on-site driveway and pedestrian paths. On-site pathways and parking areas would require site grading and site preparation to ensure adequate drainage and compaction for access and parking. Grading for the buildings, roads, and parking would occur within 2 acres of the project site. Apart from scattered areas graded for new building areas, access, and parking, the overall topography of the project site would remain. The proposed project has been designed to largely conform to the existing terrain of the project site and would not alter slope conditions such that fire-related hazards would be exacerbated due to changes in slope.

The project site is largely vegetated with bay/oak woodlands. The proposed project would be required to comply with all applicable regulations, including the CBC and CFC, which require, among other things, clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas and material requirements for new buildings within a FHSZ. Other applicable regulations include the California PRC, which requires and that internal combustion engines, like those used in construction, must be equipped with a spark arrester, which is a device used for removing and retaining carbon and other flammable particles from the exhaust flow for engines that use hydrocarbon fuels. These engines must be maintained in effective working order or be constructed, equipped, and maintained for the prevention of fire. The California PRC also requires that brush, flammable vegetation, or combustible growth be removed within 100 feet of buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials. More specifically, Subchapter 3, *Fire Hazard*, Section 1299.03, of Title 14, California Code of Regulations, requires two zones of defensible space to be maintained at all times around new structures in the SRA, with Zone 1 extending 30 feet from each structure and Zone 2 extending 100 feet from each structure.

Due to its location within a High FHSZ, all exterior building materials for the proposed project (including the cabins as according to Section 2327 of Title 25 of the CCR)[49] would be required to be constructed to comply with the most recent wildland-urban interface building code (Chapter 7A of Title 24, Part 2, of the CBC), which requires ignition-resistant materials, non-combustible materials, non-impregnatable vents, and double-paned windows with one pane of tempered glass.

[49] California Code of Regulations, Title 25, Section 2327, *Camping Cabins*, states that camping cabins installed in a FHSZ in an SRA or Very High FHSZ in an LRA, as indicated on the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone Maps, shall comply with the materials, systems, and methods of construction as defined in the CBC, Title 24, Part 2, Chapter 7A.

Due to the project site's location in a wooded environment, and the fact that the proposed project would bring people and vehicles to a High FHSZ in the SRA, the proposed project's vegetation may have the potential to exacerbate wildfire risks. Regulatory requirements, when adhered to, would minimize the exposure of people to a significant risk of loss, injury, or death due to wildfires. However, the project's proposed landscaping plans are not consistent with required wildfire hazard reduction features. Therefore, the impact would be *significant*.

Impact WF-2: Proposed project landscaping plans are not consistent with applicable defensible space requirements. Therefore, the project has the potential to exacerbate wildfire risks and expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire.

Mitigation Measure WF-2: Prior to issuance of building permits, the applicant shall submit revised landscape plans as well as a vegetation management plan to the Alameda County Fire Department for review and approval. The project site plan shall be revised, if necessary, to conform to the revised landscaping plan and vegetation management plan.

Significance Without Mitigation: Less than significant.

WF-3	**The proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.**

Project development would include construction of infrastructure on-site to support the proposed project, including a new fire access road, pedestrian trails, and utility connections. The project proposes an on-site public water system that would be supplied by two on-site groundwater projection wells that are currently in place, and a new on-site wastewater treatment system and associated leach field dispersal system. Construction and maintenance of these facilities would introduce new people and equipment to the project site, which could increase the risk of fire hazard. Based on the analysis in Chapter 4.14, *Utilities and Service Systems*, the proposed project would not result in the need for expanded utility infrastructure off-site. The proposed project would improve trails and parking areas and create a new 20-foot-wide, partially paved fire road. The proposed project does not include the installation of fuel breaks, power lines, or other similar utilities. All construction activities and improvements would be limited to the project site. Power lines have the potential to ignite wildfires if overhead lines fall down and come into contact with vegetation. However, the proposed project would connect to existing electricity infrastructure and would not require the installation of new electrical lines.

Development of the proposed project would result in a new on-site, partially paved driveway. Paved areas create an opportunity for vehicles to create accidental wildfires, since dragging chains or vehicle parts, worn brakes, and exposed wheel rims have the potential to create sparks on the driveway. Building new structures, accommodating vehicles, and bringing new occupants onto the project site inherently increases risk of hire hazards. However, the proposed on-site driveway would include limited paved areas, separated by areas of pervious gravel surfacing. All parking areas would be unpaved, with the exception of parking spaces designed for Americans with Disabilities Act compliance. The driveway would

accommodate emergency vehicles, improving emergency vehicle accessibility within the site when compared to existing conditions. Nevertheless, the introduction of new paved areas within a High FHSZ in the SRA would increase vehicle access through the site, which poses an inherent risk of accidental wildfire ignition. Therefore, this impact is considered to be *significant*.

Impact WF-3: The proposed on-site driveway has the potential to exacerbate fire risk on the project site.

Mitigation Measure WF-3a: Implement Mitigation Measure WF-2.

Mitigation Measure WF-3b: The proposed Fire Safety & Emergency Response Guide shall include education information regarding the wildfire risks associated with vehicle fires. In addition, signage shall be posted at or near the entrance to the project driveway to inform occupants of entering vehicles of current fire danger levels and the dangers of roadway sparks.

Significance Without Mitigation: Less than significant.

WF-4	**The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.**

As described in Chapter 4.5, *Geology and Soils*, the Geotechnical Engineering Investigation (GEI) Report prepared for the proposed project (see Appendix E) identifies that the project site contains relatively firm to very stiff soil conditions, and therefore the site has low susceptibility to erosion. Although the project site itself is located within a region of known historical landslides, the GEI report found there were no mapped or observed indication of historic landslides, including debris flows, rock falls, or deep and shallow failure on the project site. Therefore, the GEI Report concluded that the potential for the occurrence or reoccurrence of a landslide hazard within the proposed building areas is low. As described in Chapter 4.8, *Hydrology and Water Quality*, the existing property drains toward Cull Creek which is an unlined natural channel. The existing storm drain system on the site consists of valley gutters and drainage swales.

As described in Chapter 4.8, *Hydrology and Water Quality*, during construction, the project would be required to comply with the requirements in the State's General Construction Permit, including preparation of a Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) prior to the start of construction activities. The SWPPP would identify best management practices (BMPs) to be used during construction that would minimize erosion and control runoff. BMPs would include retaining eroded sediments and other pollutants on-site, controlling dust, stabilizing construction entrances and exits, installing storm drain inlet protection measures, and installing sediment control measures. The project site design includes bioretention areas for stormwater.

As described above, the project site has low risk of erosion and landslides. Management of stormwater and erosion using the BMPs described above would help to prevent risk of downslope or downstream folding or landslides as a result of runoff, post-fire slope instability, or drainage changes. Therefore, the

project would not expose people or structures to significant risks related to runoff, slope instability, or drainage changes, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

WF-5	**The proposed project would not, in combination with past, present, or reasonably foreseeable projects, result in a significant cumulative impact with respect to wildfire.**

The analysis of cumulative wildfire impacts is based on impacts of the proposed project plus cumulative development within and near the SRA. Future projects may be proposed within the SRA could subject people and structures to wildfire hazards. As discussed previously, future development under the proposed project would not interfere with implementation of emergency response plans or result in significant wildfire-related impacts, with the implementation of mitigation measures. Potential impacts from the proposed project associated with wildfires would be reduced through compliance with existing local, regional, State, and federal regulations, and through the implementation of Mitigation Measures WF-2 and WF-3. Cumulative development in adjacent jurisdictions would be subject to the same federal, State, and regional regulations, as well as regional safety plans, such as the Alameda County CWPP. Cumulative projects would also be required to comply with the requirements of the CBC Chapter 7A, CFC Chapter 49, PRC Sections 4291 et seq. and the SRA Fire Safe regulations for areas in the SRA. Furthermore, overhead powerlines would be required to comply with the CCR Title 14 Sections 1250 et seq. and CPUC fire safety regulations. Compliance with these requirements would reduce cumulative, development-related impacts that relate to wildfire hazards and emergency response.

Compliance with regulatory requirements, the inclusion of project components that would reduce wildfire risks to project site visitors, and the implementation of Mitigation Measures WF-2, WF-3a, and WF-3b would reduce the impacts from the proposed project to less than significant. Accordingly, the proposed project would not contribute to a cumulative increase in wildland fire hazards in the SRA and the potential for cumulative impacts associated with wildfire hazards would be *less than significant*.

Significance Without Mitigation: Less than significant.

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5. Alternatives to the Proposed Project

5.1 INTRODUCTION

The following evaluation was prepared to evaluate whether there may be feasible alternatives to the project that could avoid or substantially lessen any of the significant effects of the project. Section 15126.6, *Consideration and Discussion of Alternatives to the Project*, of the California Environmental Quality Act (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.

A "No Project" Alternative is required as part of a "reasonable range of alternatives."

5.2 SIGNIFICANT IMPACTS

As described above, apart from the No Project Alternative, other alternatives chosen as part of the reasonable range of alternatives should be chosen based upon their ability to feasibly attain most of the basic objectives of the project and avoid or lessen the project's significant impacts. The project would result in 13 significant impacts, all of which would be reduce to less than significant with mitigation (please see Chapter 1, *Executive Summary*, for a complete list of impacts and mitigation measures):

Air Quality

- AQ-2: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standards.
- AQ-4: The proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
- AQ-5: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, could cumulatively contribute to air quality impacts in the Air Basin.

Biological Resources

- Impact BIO-1: The proposed project would 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 US Fish and Wildlife Service.
- Impact BIO-4: The proposed project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Cultural Resources

- CULT-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.
- CULT-3: The proposed project would not disturb any human remains, including those interred outside of dedicated cemeteries.

Geology and Soils

- GEO-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Greenhouse Gas Emissions

- GHG-1: The proposed project would generate greenhouse gas emissions, either directly or indirectly, that result in a significant impact on the environment.
- GHG-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to greenhouse gas emissions.

Tribal Cultural Resources

- TCR-1: The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: (a) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or (b) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency will consider the significance to a California Native American tribe.

Wildfire

- WF-2: The proposed project could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- WF-3: The proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

5.3 OVERVIEW OF PROJECT ALTERNATIVES

This chapter evaluates the following two alternatives:

- No Project Alternative. Under the No Project Alternative, the project would not be developed, and the project site would remain developed with a mobile home, barn, parking area and driveway with bridge, garage, patio, and the existing trails traversing the site.
- Reduced Development Alternative. Under the Reduced Development Alternative, the number of cabins would be reduced in half (six cabins versus twelve under the proposed project). In addition, to accommodate the reduced number of cabins, the multi-use building would be reduced in size accordingly to accommodate less people on-site, including less students and staff. Under the proposed project, there would be up to approximately 108 people on-site during camp sessions. The Reduced Development Alternative would reduce the student count from 100 to 50, and would assume that the number of staff (8) would remain the same.

Table 5-1, *Comparison of Project Alternatives*, compares the impact of each alternative to impacts of the project.

TABLE 5-1 COMPARISON OF PROJECT ALTERNATIVES

Topic	No Project Alternative	Reduced Development Alternative
Agriculture and Forestry Resources	0	0
Air Quality	–	–
Biological Resources	–	0
Cultural Resources	–	–
Geology and Soils	–	–
Greenhouse Gas Emissions	–	–
Hazards and Hazardous Materials	0	0
Hydrology and Water Quality	–	–
Land Use and Planning	0	0
Noise and Vibration	–	0

Public Services	0	0
Transportation	–	–
Tribal Cultural Resources	–	–
Utilities and Service Systems	0	0
Wildfire	–	0

Notes:
– Reduced impact in comparison to the proposed project.
0 Similar impact in comparison to the proposed project.
+ Greater impact in comparison to the proposed project.

5.4 ALTERNATIVES CONSIDERED BUT REJECTED

Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reasons underlying the lead agency's determination. 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.

5.4.1 ALTERNATIVE LOCATION

An alternative location for the proposed project was considered infeasible due to availability of sites that would support the project's objectives. The presence of an alternative location does not necessarily mean that it can be considered for a proposed project, based on land use designations and zoning, size of site to support the proposed project, other future plans for the site, and property ownership. Additionally, the current proposed project site achieves the project objectives of supporting small agricultural uses and providing recreational trails in a way that would not conflict with allowed land use or surrounding uses.

5.5 IMPACT ASSESSMENT

5.5.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the project would not be developed and the existing uses on the project site would remain.

5.5.1.1 AGRICULTURE AND FORESTRY RESOURCES

As described in Chapter 4.1, *Agriculture and Forestry Resources*, of this Draft EIR, the proposed project would not result in significant impacts to agriculture and forestry resources. The proposed project would not conflict with zoning for agricultural use or a Williamson Act contract, or convert Farmland or forest land to non-agricultural or non-forest use. Under the No Project Alternative, the project would continue

to not be in conflict with agricultural or forestry resources. Therefore, the No Project Alternative would result in *similar* impacts to agriculture and forestry resources in comparison to the proposed project.

5.5.1.2 AIR QUALITY

As described in Chapter 4.2, *Air Quality*, of this Draft EIR, the proposed project would not conflict with or obstruct implementation of an air quality plan, or expose sensitive receptors to substantial pollution concentrations. The proposed project would potentially result in a cumulatively considerable net increase of particulate matter and result in odors adversely affecting a substantial number of people, which would be reduced to less than significant with implementation of Mitigation Measures AQ-2 and AQ-4, respectively.

Under the No Project Alternative, the project would not increase particulate matter or odors with could result in air quality impacts, and therefore would result in a *lesser* impact to air quality in comparison to the proposed project.

5.5.1.3 BIOLOGICAL RESOURCES

As described in Chapter 4.3, *Biological Resources*, of this Draft EIR, the proposed project would have the potential to have a substantial adverse effect on nesting birds, roosting bats, the San Francisco dusky-footed woodrat, and the Alameda whipsnake, California red-legged frog, and western pond turtle. This impact would be reduced to less than significant with implementation of mitigation measures BIO-1.1 through BIO-1.4. Additionally, proposed night-time lighting and increased human activity from the proposed project could disrupt native wildlife movement, which would be reduced to a less-than-significant impact with implementation of mitigation measure BIO-4.

Under the No Project Alternative, conditions on-site would not change. As such, the No Project Alternative would not alter the on-site landscape and result in the same impacts as the proposed project, and therefore would result in *lesser* impacts compared to the proposed project.

5.5.1.4 CULTURAL RESOURCES

As described in Chapter 4.4, *Cultural Resources*, of this Draft EIR, the proposed project would not cause a substantial adverse change to a historical resource, but could cause a substantial adverse change to an archaeological resource or disturb human remains. These impacts would be reduced to less than significant with implementation of Mitigation Measures CULT-2 and CULT-3.

Under the No Project Alternative, no development would result on-site which could potentially disturb unknown archaeological resources or human remains. As such, the No Project Alternative would result in a slightly *lesser* impact to cultural resources in comparison to the proposed project.

5.5.1.5 GEOLOGY AND SOILS

As described in Chapter 4.5, *Geology and Soils*, of this Draft EIR, the proposed project would not result in significant impacts to geology and soils regarding earthquakes, landslides, erosion, unstable soil, expansive

soil, or soils inadequate of supporting septic systems, or other similar hazards. From further ground disturbance, the proposed project could destroy an unknown unique paleontological resource or geologic feature that might exist. This would be reduced to less than significant with implementation of Mitigation Measure GEO-6.

Under the No Project Alternative, there would not be further ground disturbance than what has currently occurred on-site. As such, there would not be the risk of disturbing a previously unknown paleontological resource or unique geologic feature as compared with the proposed project, and the No Project Alternative would have a slightly *lesser* impact.

5.5.1.6 GREENHOUSE GAS EMISSIONS

As described in Chapter 4.6, *Greenhouse Gas Emissions*, of this Draft EIR, the proposed project would generate GHG emissions that would result in a significant impact on the environment based on BAAQMD's *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* adopted in April 2022. This would be reduced to less than significant with the implementation of Mitigation Measure GHG-1.1a, 1.1b, and 1.2, which would require the use of all-electric energy systems and implementation of EV capable charging stations consistent with CALGreen standards; purchase of voluntary carbon offsets; and addition of electric vehicle (EV) capable charging stations.

The No Project Alternative would not result in GHG emissions above what is occurring now. Current site uses that generate GHG emissions include energy usage and vehicular travel to the site. These uses are not quantified to compare with the proposed project. While the proposed project would increase vehicular uses to and from the site and increase energy consumption due to more people on-site, it would also require buildings to be to all-electric, and be required to include EV-capable parking and include GHG offsets. However, current uses on-site are minimal compared to the proposed project and only support the amount of people that can reside in the current caretaker's home. Therefore, the No Project Alternative would result in slightly *lesser* impacts compared to the proposed project.

5.5.1.7 HAZARDS AND HAZARDOUS MATERIALS

As described in Chapter 4.7, *Hazards and Hazardous Materials*, of this Draft EIR, the proposed project would not result in significant impacts regarding hazardous materials. The proposed project would not introduce hazards or hazardous materials that would result in a significant impact. Currently there is no hazardous materials usage on-site. As such, the No Project Alternative would result in *similar* impacts compared to the proposed project.

5.5.1.8 HYDROLOGY AND WATER QUALITY

As described in Chapter 4.8, *Hydrology and Water Quality*, of this Draft EIR, the proposed project would not result in impacts to hydrology or water quality. The proposed project would not violate water quality standards; substantially decrease groundwater supplies; substantially alter existing drainage; result in substantial erosion or surface runoff; exceed existing or planned stormwater drainage; impede or redirect

flood flows; or conflict with a water quality control or sustainable groundwater management plan. The project site is also not located in a 100-year floodplain, dam inundation, tsunami, or seiche zone.

The No Project Alternative would keep the site as is, and would therefore also not result in hydrology or water quality impacts. However, under the No Project Alternative, there would be less people on-site and therefore less demand for water. Because of this ,the No Project Alternative would result in slightly *lesser* impacts to hydrology and water quality.

5.5.1.9 LAND USE AND PLANNING

As described in Chapter 4.9, *Land Use and Planning*, of this Draft EIR, the proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and would therefore not result in a significant impact. The No Project Alternative would not result in any changes to the existing uses on-site, which are consistent with applicable County land use designations. Therefore, the No Project Alternative would result in *similar* impacts to the proposed project.

5.5.1.10 NOISE AND VIBRATION

As described in Chapter 4.10, *Noise and Vibration*, of this Draft EIR, the proposed project would not result in impacts with respect to noise and vibration. However, under the No Project Alternative, there would be less activity for noise under present uses on-site, and there would not be any noise or vibration generated from construction. Therefore, the No Project Alternative would *slightly lessen* noise and vibration impacts compared to the proposed project.

5.5.1.11 PUBLIC SERVICES

As described in Chapter 4.11, *Public Services*, of this Draft EIR, the proposed project would not result in impacts to fire protection or police services. The proposed project would not introduce new populations into the area as the project would serve students in the region, which would therefore not introduce substantial new populations that the Alameda County Fire Department or Sheriff's Office would need to potentially provide services for. The project would also not require an expansion of the territory served by the existing fire protection and police services. Therefore, the No Project Alternative, which would not result in any changes to existing conditions including new development or new populations on-site, would result in a *similar* impact compared to the proposed project.

5.5.1.12 TRANSPORTATION

As described in Chapter 5.12, *Transportation*, of this Draft EIR, the proposed project would not result in significant impacts regarding transportation. The project would not conflict with a transportation-related plan, ordinance, or policy; would not result in impacts regarding vehicle miles traveled (VMT); would not substantially increase transportation-related hazards due to a design feature or incompatible uses; and would not result in inadequate emergency access.

Under the No Project Alternative, the site would continue to generate very little uses and traffic. While the proposed project would not result in significant transportation impacts, including regarding VMT, it would generate more VMT and traffic to the site than under existing conditions. Therefore, the No Project Alternative would result in slightly *lesser* impacts to transportation.

5.5.1.13 TRIBAL CULTURAL RESOURCES

As described in Chapter 4.13, *Tribal Cultural Resources*, of this Draft EIR, development from the proposed project could cause a substantial adverse change to an unknown tribal cultural resource, including human remains, as a result of ground disturbance, which would be reduced to less than significant with implementation of Mitigation Measures TCR-1.1 and TCR-1.2.

Under the No Project Alternative, no development would result on-site which could potentially disturb unknown tribal cultural resources or human remains. As such, the No Project Alternative would result in a slightly *lesser* impact to tribal cultural resources in comparison to the proposed project.

5.5.1.14 UTILITIES AND SERVICE SYSTEMS

As described in Chapter 5.14, *Utilities and Service Systems*, of this Draft EIR, the proposed project would not result in significant impacts regarding utilities and service systems. The proposed project would not require or result in construction or expansion of new water, wastewater, or stormwater facilities; would have sufficient water supplies available to serve the project; and would not generate excessive solid waste or conflict with regulations related to solid waste.

Under the No Project Alternative, the project site would continue to operate on an on-site septic system for wastewater treatment, use on-site groundwater wells for water supply, and be required to comply with regulations pertaining to solid waste. The proposed project would also use an on-site septic system and groundwater wells for water supply, and would also be required to comply with regulations for solid waste. Both present and proposed uses on-site would not generate excessive amounts of solid waste that would exceed capacity of regional landfills. As such, the No Project Alternative would result in *similar* impacts to utilities and service systems.

5.5.1.15 WILDFIRE

As described in Chapter 5.15, *Wildfire*, of this Draft EIR, the proposed could, due to slope, prevailing winds, or other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire, which would be reduced to a less than significant impact with implementation of mitigation measure WF-2. In addition, the project could result require the installation or maintenance of associated infrastructure that may exacerbate fire risk, which would be reduced to a less than significant impact with implementation of mitigation measure WF-3a and WF-3b.

Under the No Project Alternative, site conditions would not change, and this alternative would therefore not exacerbate conditions to result in potentially significant wildfire impacts. Because nothing on site would occur to exacerbate wildfire risks or require installation or maintenance of infrastructure that may

exacerbate fire risk, impacts regarding wildfire would be *lesser* under the No Project Alternative when compared to the proposed project.

5.5.2 REDUCED DEVELOPMENT ALTERNATIVE

Under the Reduced Development Alternative, the number of cabins would be reduced in half (six cabins versus twelve under the proposed project). In addition, to accommodate the reduced number of cabins, the multi-use building would be reduced in size accordingly to accommodate less students on-site. The Reduced Development Alternative would reduce the number of staff and students on-site from 108 to 58, and would reduce the development by over 2,400 square feet (6 400-square foot cabins, with some square footage reduced from the multi-use building.

5.5.2.1 AGRICULTURE AND FORESTRY RESOURCES

The proposed project would not result in any significant impacts to agricultural or forestry resources. The project would comply with allowable uses on-site and would also include some agricultural uses including a garden and small farm animals (goats and chickens). The proposed project would also leave 35 of the 37-acre site undeveloped.

Under the Reduced Development Alternative, the project would result in slightly less development to accommodate approximately half of the students on-site at a time compared to the proposed project. This would have a small impact on the overall area developed, and would not alter the proposed uses on-site. The Reduced Development Alternative would therefore have *similar* impacts to agriculture and forestry resources compared to the proposed project.

5.5.2.2 AIR QUALITY

Similar to the proposed project, the Reduced Development Alternative, being a slightly smaller size and accommodating a smaller population on-site, would not conflict with or obstruct implementation of an air quality plan, or expose sensitive receptors to substantial pollution concentrations.

The proposed project would potentially result in a cumulatively considerable net increase of particulate matter and result in odors adversely affecting a substantial number of people, which would be reduced to less than significant with implementation of Mitigation Measures AQ-2 and AQ-4, respectively. The Reduced Project Alternative would still contribute a cumulatively considerable net increase in particulate matter requiring mitigation, and it not alter operations of the project to reduce potential odors, also requiring mitigation. Therefore, the Reduced Development Alternative would result in *similar* air quality impacts to the proposed project.

5.5.2.3 BIOLOGICAL RESOURCES

While the Reduced Development Alternative would result in less development compared to the proposed project, many of the project components would remain unchanged. Additionally, the proposed uses on-site would not change. Development under the Reduced Development Alternative then would have the potential to impact biological resources in the same manner as the proposed project. Because

development under this alternative would still result in potential impacts to certain species and wildlife movement, impacts to biological resources would be *similar* to the proposed project.

5.5.2.4 CULTURAL RESOURCES

The proposed project would not result in significant impacts to cultural resources with implementation of mitigation during ground disturbance, where potentially unknown resources could exist below the ground surface. There is potential for cultural resources to exist below ground where ground disturbance has not yet occurred, which could be discovered or disrupted during grading and site preparation of the proposed project. Under the Reduced Development Alternative, the project would disrupt slightly less land than under the proposed project. As such, this alternative would result in a slightly lesser chance of disrupting unknown cultural resources during ground disturbance, and result in slightly *lesser* impacts to cultural resources.

5.5.2.5 GEOLOGY AND SOILS

The proposed project would not result in significant impacts to geology and soils, including paleontological resources with implementation of mitigation. Similar with cultural resources, which could potentially exist below ground that has not yet been disturbed, the proposed project could result in impacts to paleontological resources during ground disturbance. Under the Reduced Development Alternative, the project would disrupt slightly less land than under the proposed project. As such, this alternative would result in a slightly lesser chance of disrupting unknown paleontological resources during ground disturbance, and result in slightly *lesser* impacts to paleontological resources.

5.5.2.6 GREENHOUSE GAS EMISSIONS

Similar to the proposed project, the Reduced Development Alternative would generate GHG emissions from vehicular travel to and from the site, and from energy usage. As site uses would not change compared to the proposed project, mitigation measures GHG-1.1a, GHG-1.1b, and GHG-1.2 would still apply. However, the Reduced Development Alternative would accommodate roughly half the student population in comparison to the proposed project, which would require less energy usage and vehicular traffic. Therefore, impacts regarding GHG emissions under this alternative would be slightly *lesser* than the proposed project.

5.5.2.7 HAZARDS AND HAZARDOUS MATERIALS

The proposed project would not result in significant impacts regarding hazards and hazardous materials. The Reduced Development Alternative would result in a slightly smaller development footprint and would not change uses proposed under the proposed project. Because the Reduced Development Alternative would not increase nor reduce the potential for significant impacts regarding hazardous materials, impacts under this alternative would be *similar* to the proposed project.

5.5.2.8 HYDROLOGY AND WATER QUALITY

The proposed project would not result in significant impacts regarding hydrology and water quality. The Reduced Development Alternative would result in a slightly smaller development footprint and population on-site. This would result in smaller amounts of water supply required for the project. While the proposed project would not have a significant impact on hydrology and water quality, a lesser demand would have a slightly *lesser* impact in comparison.

5.5.2.9 LAND USE AND PLANNING

The Reduced Development Alternative would not result in any changes to the proposed land uses on-site. Therefore, the Reduced Development Alternative would result in *similar* impacts to the proposed project.

5.5.2.10 NOISE AND VIBRATION

The Reduced Development Alternative would generate similar noise as the proposed project during construction, and similar noise during operation, as proposed uses for the project would not change, and the bulk of construction (i.e., staff house, multi-use building, bathrooms, etc.) would not significantly change. As such, the Reduced Development Alternative would result in *similar* impacts regarding noise and vibration.

5.5.2.11 PUBLIC SERVICES

Similar to the proposed project, the Reduced Development Alternative would not introduce substantial new populations into the area, nor would it require an expansion of the territory served by the existing fire protection and police services. Therefore, the Reduced Development Alternative would result in a *similar* impact compared to the proposed project.

5.5.2.12 TRANSPORTATION

Similar to the proposed project, the Reduced Development Alternative project would not conflict with a transportation-related plan, ordinance, or policy, as it would not change roadway patterns or proposed uses from the proposed project. It would therefore also not substantially increase transportation-related hazards due to a design feature or incompatible uses or result in inadequate emergency access. The Reduced Development Alternative would accommodate approximately half the amount of students as the proposed project, which would require slightly less vehicular traffic to and from the site. While the proposed project does not result in significant impacts regarding VMT, the Reduced Development Alternative would result in a slightly lesser VMT, and therefore a slightly *lesser* impact.

5.5.2.13 TRIBAL CULTURAL RESOURCES

Similar with cultural resources, the proposed project would not result in impacts to tribal cultural resources with implementation of mitigation during ground disturbance, where potentially unknown resources could exist below the ground surface. Under the Reduced Development Alternative, the project would disrupt slightly less land than under the proposed project. As such, this alternative would result in a

slightly lesser chance of disrupting unknown tribal cultural resources during ground disturbance, and result in slightly *lesser* impacts to tribal cultural resources.

5.5.2.14 UTILITIES AND SERVICE SYSTEMS

Similar to the proposed project, the Reduced Development Alternative would operate with an on-site septic system for wastewater treatment, use on-site groundwater wells for water supply, and be required to comply with regulations pertaining to solid waste. This alternative would not change the utilities and service systems proposed under the proposed project. As such, the Reduced Development Alternative would result in *similar* impacts to utilities and service systems in comparison with the proposed project.

5.5.2.15 WILDFIRE

Under the Reduced Development Alternative, the site layout would not alter significantly from the proposed project, and proposed uses would remain the same. Population on-site at a given time would be less than under the proposed project. Similar to the proposed project, it would therefore not substantially impair an adopted emergency response or evacuation plan, nor would it result in exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Because this alternative would not result in a change in overall landscaping, except where there would be less cabins, the Reduced Development Alternative would still therefore require implementation of mitigation measure WF-2 (and WF-3a) which would require revised landscape plans and a vegetation management plan. Additionally, since this alternative would not alter the Fire Safety & Emergency Response Guide included as part of the proposed project, it would also require implementation of mitigation measures WF-3b requiring the inclusion of education information and signage regarding wildfire risks associated with vehicle fires. Therefore, the Reduced Development Alternative would result in *similar* impacts in comparison with the proposed project.

5.6 OBJECTIVES ASSESSMENT

As listed in Chapter 3, *Project Description*, of this Draft EIR, the project applicant has developed the following project objectives:

- Provide state-of-the-art experiential educational programs.
- Develop a project focused site within 30 miles of the majority of the partner elementary schools.
- Provide chickens and goats as a learning experience for the youth in the program as well as natural maintenance of the property.
- Provide an organic garden for the site and program. Produce from the garden would be used in student meals and sold to the community. Students would learn about the history of cultivation in the area and the growing of produce.

- Provide improved pedestrian trail and site maintenance. Dirt roads and trails exist on the property and extend within the bay/oak woodland habitat that covers the slopes on the western side of the project site. These existing roads/trails would be repurposed to serve as a recreational pedestrian trail system, with undergrowth maintained by the goats housed on the property.
- Provide a caretaker's residence to watch over the facilities and animals when not in session.
- Meet the development standards of the Alameda County Castro Valley Jurisdiction, including fire access, storm water management, and site development restrictions.
- Provide parking to meet Alameda County's standards.
- Replace existing utilities to accommodate the proposed project including a small private water system and expanded private wastewater system.
- Provide a greywater irrigation system that can be used as a test project for Alameda County Environmental Health.

5.6.1 NO PROJECT ALTERNATIVE

The No Project Alternative would not meet any of the project objectives.

5.6.2 REDUCED DEVELOPMENT ALTERNATIVE

The Reduced Development Alternative would be able to meet all of the following project objectives. However, it would not be able to accommodate as many students at one time, potentially limiting the reach of the proposed project if the amount of sessions per year are also not increased.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. In addition to the discussion and comparison of impacts of the project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection be disclosed. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the project applicant or Petaluma.

As shown in Table 5-1, the No Project Alternative would, in comparison to the project, result in fewer impacts when compared to those of the proposed project for all of the environmental impacts. However, the No Project Alternative would not address project objectives of the proposed project. Regardless, the No Project Alterative is 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. In comparison to the project, the Reduced Development Alternative would result in less impacts than the proposed project.

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6. CEQA-Mandated Sections

This chapter provides an overview of the impacts of the proposed project based on the analyses presented in Chapter 4 of this Draft Environmental Impact Report (EIR). The topics covered in this chapter include impacts found not to be significant, significant irreversible changes, and growth inducing impacts. A more detailed analysis of the effects the proposed project would have on the environment and proposed mitigation measures to minimize significant impacts is provided in Chapters 4.1 through 4.15.

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 "scoped out" and not analyzed further in the EIR. This section explains the reasoning by which it was determined that certain impacts to aesthetics, agriculture and forestry resources, energy, hazards and hazardous materials, land use and planning, mineral resources, population and housing, public services, recreation, and utilities potentially resulting from buildout of the proposed project would be less than significant or no impact. As previously discussed in this Draft EIR, these criteria are based on the CEQA Guidelines Appendix G Checklist. These issues were scoped out as described in the project's Initial Study included with the Notice of Preparation, which is attached in Appendix A of this Draft EIR.

6.1.1 AESTHETICS

The proposed project is not near a State Scenic Highway, and would therefore not affect views from a State Scenic Highway. Due to the project site's location between a public roadway obstructed by large, existing trees and vegetation and the sloped hills to the west, as well the low one- and two-story building heights of the existing and proposed project, scenic vistas of the adjoining hillsides would not be blocked by construction of the project. The design of the proposed buildings as well as the scale and massing, would be consistent with the adjoining development including one- and two-story homes and supporting buildings. Finally, proposed lighting would be designed so that the lights are shielded or directed in such a way that there would be no impact on the adjacent land uses or nearby residences. Therefore, new sources of light installed for the proposed project would have *no impact* on day or nighttime views in the area.

6.1.2 AGRICULTURE AND FORESTRY RESOURCES

The proposed project is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and therefore would not impact lands classified under these categories.[1] Other agriculture and forestry resource impacts are analyzed in Chapter 4.1, *Agriculture and Forestry Resources*, of this Draft EIR.

6.1.3 ENERGY

The proposed project would be designed to maximize natural lighting, use high-performance glazing, incorporate passive heating and cooling strategies, and employ low-flow fixtures to minimize energy consumption and exceed Title 24 energy requirements. The proposed project would connect to existing electrical utilities and would continue to use one of the two 499-gallon liquid propane tanks currently on-site to serve existing facilities, while upgrading the other existing tank to serve the new multi-use building and shower building.

Energy use from equipment and transportation during construction of the proposed project would vary during different construction phases, and only be temporary. Construction equipment would meet the appropriate tier ratings per CALGreen or EPA emissions standards. Operation of the proposed project would create additional energy demands compared to existing conditions and would result in increased transportation energy use. However, the project would be built to meet Building Energy Efficiency Standards, and would not result in wasteful or unnecessary natural gas demands. The proposed project would also be required to comply with all applicable energy regulations, including, for example, the Building Energy Efficient Standards, and CALGreen, which would contribute to minimizing wasteful energy consumption and promoting renewable energy sources. Therefore, the proposed project would not result in wasteful energy or conflict with renewable energy goals, and there would be no impact.

6.1.4 HAZARDS AND HAZARDOUS MATERIALS

The proposed project would not involve the routine transport of hazardous waste, thus, no impacts to the public or the environment would occur in this regard. Potential impacts during construction of the proposed project could include potential spills associated with the use of fuels and lubricants in construction equipment. These potential impacts would be short-term in nature and would be reduced to less-than-significant levels through compliance with applicable local, State, and federal regulations, as well as the use of standard equipment operating practices by experienced, trained personnel. Additionally, during the operation phase of the proposed project, common cleaning substances, facility maintenance products, and similar items could be used on the project site. These potentially hazardous materials, however, would not be of a type or occur in sufficient quantities to pose a significant hazard to public health and safety or the environment. Compliance with the applicable laws, regulations, and conditions of

[1] California Department of Conservation, 2021, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed May 11, 2021.

approval, would minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent practicable.

Additionally, the project site does not contain any known hazardous materials spills or storage, nor is it within 0.25 miles of a school or located within 2 miles of an airport. Therefore, there would be no impacts related to hazardous materials spills or storage, hazardous materials in the vicinity of a school, or impacts from proximity to airports.

Impacts related to impairment of an emergency response or evacuation plan, or related to wildfires are addressed in Chapter 4.7, *Hazards and Hazardous Materials*, and Chapter 4.15, *Wildfire*, of this Draft EIR.

6.1.5 LAND USE AND PLANNING

The proposed project would retain existing roadway patterns and would not introduce any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers. Therefore, the proposed project would not divide any established community there would be no impact related to division of an established community.

Impact related to conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect is analyzed in Chapter 4.9, *Land Use and Planning*, of this Draft EIR.

6.1.6 MINERAL RESOURCES

The California Surface Mining and Reclamation Act (SMARA) classification for the area encompassing the project area is MRZ-4, which denotes areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.[2] The MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather that there is a lack of knowledge regarding mineral occurrences. However, no minerals are currently mined within the project site and no known mineral resources occur in the project vicinity. Therefore, the proposed project would not result in the loss of or access to mineral resources and there would be no impact.

6.1.7 POPULATION AND HOUSING

The proposed project would not involve new housing or employment centers. As an outdoor recreation facility, it would serve existing populations within the region. Thus, it would not induce substantial population growth in the area. The existing caretaker home would remain on-site, and no additional long-term housing is proposed as part of the project. Therefore, the proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Therefore, there would be no impact to population and housing.

[2] California Department of Conservation, 1983, Special Report 146 Plate 2.10, https://filerequest.conservation.ca.gov/, accessed August 24, 2021.

6.1.8 PUBLIC SERVICES AND RECREATION

As stating in Section 6.1.7, Population and Housing, the project would not induce substantial population growth that would result in increased school, park, and library facilities. No schools exist within two miles of the project area, and no changes would occur that would affect existing schools or require additional schools or school personnel, therefore the proposed project would not impact schools. The proposed project consists of an outdoor recreation facility that would serve disadvantaged youth throughout the region. All proposed visitor activities would occur on-site and would not involve the use of public parks. Although the multi-use trail on the western portion of the project site would ultimately lead to the Juan Bautista De Anza Trail, the connection is not intended to increase use of the regional trail because all activities are limited to the boundaries of the site. Thus, the proposed project would not result in impacts to parks and recreation facilities. Finally, due to the nature of the project, an outdoor recreational facility with no increase in permanent residents, visitors to the facility would not require increased use of regional libraries, therefore there would be no impacts to libraries.

Impacts to fire protection and police services are analyzed in Chapter 4.11, *Public Services*, of this Draft EIR.

6.1.9 UTILITIES AND SERVICE SYSTEMS

The proposed project would use an on-site septic system for wastewater treatment, and therefore would not require connection to a sewer system and wastewater treatment provider. As such, the proposed project would not have an impact on wastewater treatment providers.

Impacts to other utilities and service systems are analyzed in Chapter 4.14, *Utilities and Service Systems*.

6.2 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project or plan would commit nonrenewable resources to uses that future generation would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

6.2.1 LAND USE CHANGES THAT COMMIT FUTURE GENERATIONS

As described in Chapter 3, *Project Description*, the proposed project involves developing approximately 2 acres of the 37-acre project site with an outdoor recreational facility, including a staff house, multi-use building, cabins, restroom and shower building, garden, and amenities. Most of the proposed project would fit in the footprint of the existing development, which includes a roadway and driveways with drainage swales, bridge, barn, caretaker's unit, garage building, patio, and parking area. Existing trails throughout the project site would be repurposed and maintained to be used for recreation. Comparison between the existing and proposed development would not significantly alter the land use on-site that would commit future generations. It would change the uses on-site to serve more people in an educational and recreational capacity, and include agricultural uses (keeping of farm animals and garden)

as well as removing and replacing most of the current structures on-site with new structures and amenities.

6.2.2 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 local agencies and would follow professional industry standards for safety and construction. Additionally, the land use proposed by the proposed project would not include any uses or activities that are likely to 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.

6.2.3 LARGE COMMITMENT OF NON-RENEWABLE 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 electric service, long-term propane usage, and 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), electricity and two 499-gallon liquid propane tanks would provide energy, and gasoline would be used for the transportation of people and goods 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 also be required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. Buildings would be sited to maximize natural lighting, use high-performance glazing, incorporate passive heating and cooling strategies, and employ low-flow fixtures to minimize energy consumption and exceed Title 24 energy requirements.

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.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project or plan 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 be 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 projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by, or attracted to, a new project.

The proposed project would not result in direct growth-inducing impacts because it would not involve the creation of significant new off-site transportation or utility infrastructure that would allow or spur growth in the surrounding area. The project site is already served by roadways and electricity lines and would not require the construction of new roadways or off-site infrastructure to serve the project. Since the proposed project would provide its own water supply and wastewater processing through on-site well and treatment systems, it would not require extension of water or wastewater infrastructure. Given that it would not result in the creation of new infrastructure that could be used by other new development, construction of the proposed project would not directly induce growth in the surrounding area.

The proposed project would also not result in significant indirect growth inducement in the surrounding environment. Construction of the proposed project as an educational and outdoor recreation facility would serve existing students in the region who would visit the site temporarily during camp sessions. A caretaker’s facility currently exists on-site and would be included as part of the proposed project. It is estimated that the majority of the remainder of the project-generated employment, which would not consist of a large population, would be absorbed by the regional labor force; therefore, project employment would not attract considerable numbers of workers into the region.

Overall, the proposed project would not be considered to have substantial adverse growth-inducing impacts.

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