

Draft
Environmental Impact Report for the
Bear Creek Redwoods Preserve Plan

State Clearinghouse #2015062029

September 2016



PREPARED FOR:
Midpeninsula Regional
Open Space District
330 Distel Circle
Los Altos, CA 94022

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for the
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SCH# 2015062029

PREPARED FOR

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µin/sec	microinch per second
AB	Assembly Bill
ABAG	Association for Bay Area Governments
ADT	average daily trip
APCO	Air Pollution Control Officer
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
California OSHA	Cal/Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAMUTCD	<i>2014 California Manual of Uniform Traffic Control Devices</i>
CAP	Climate Action Plan
CBC	California Building Code
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Register
CGS	California Geological Survey
CH ₄	methane
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society

CNRA	California Natural Resources Agency
CO ₂	carbon dioxide
CO ₂ e	CO ₂ -equivalent
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dba	A-weighted decibels
dbh	diameter at breast height
DEH	Department of Environmental Health
DHS	California Department of Health Services
diesel PM	diesel exhaust
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERM	Environmental Resources Management
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
gpd	gallons per day
gpm	gallons per minute
HAP	hazardous air pollutant
HCM	<i>2010 Highway Capacity Manual</i>
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management

L _{dn}	day-night level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MMI	Modified Mercalli Intensity
MMT	million metric tons
mph	miles per hour
MPO	Metropolitan Planning Organization
MROSD	Midpeninsula Regional Open Space District
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
OES	Office of Emergency
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PM ₁₀ and PM _{2.5}	respirable and fine particulate matter
PPV	peak particle velocity
PRC	Public Resources Code
RWQCB	regional water quality control board
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SCVWD	Santa Clara Valley Water District
SF ₆	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SMAQMD	Sacramento Metropolitan Air Quality Management District

SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	total maximum daily load
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VdB	vibration decibels
VTA	Valley Transportation Authority

1 INTRODUCTION

The Midpeninsula Regional Open Space District (MROSD) proposes to implement a Preserve Plan (proposed project) for the Bear Creek Redwoods Open Space Preserve (Preserve) which would direct the short-term and long-term use and management of the Preserve. The project is intended to provide for open space preservation, native habitat protection and enhancement, and low-intensity recreation on Preserve lands. The Plan includes construction and maintenance of parking areas and trails, rehabilitation and future repurposing of the former Alma College Site, and renovation, continued operation, and expanded public access of the Bear Creek Stables.

1.1 PURPOSE AND INTENDED USES OF THIS DRAFT ENVIRONMENTAL IMPACT REPORT

This Draft Environmental Impact Report (DEIR) has been prepared to evaluate the potential environmental effects of implementing the proposed project.

The DEIR has been prepared in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects. CEQA requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. The purpose of an EIR, under the provisions of CEQA, is “to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided” (Public Resources Code [PRC] Section 21002.1[a]). If a project would result in significant and unavoidable environmental impacts that cannot be feasibly mitigated to less-than-significant levels, the project can still be approved, but the lead agency’s decision-maker (i.e., Board of Directors) must issue a “statement of overriding considerations” explaining, in writing, the specific economic, social, or other considerations that they believe make those significant effects acceptable (PRC Section 21002; California Code of Regulations [CCR] Section 15093 of the State CEQA Guidelines).

In accordance with Section 15161 of the State CEQA Guidelines, this document is a project EIR that examines the reasonably foreseeable and potentially significant adverse environmental impacts of the proposed project. As a project EIR, this document examines the potential environmental effects of all phases of the project: design, construction, and operation.

MROSD is the Lead Agency for the DEIR, as defined by CEQA. The relevant statute and regulations guiding the preparation of the DEIR are:

- ▲ PRC Sections 21000 et seq., which is CEQA and
- ▲ CCR, Title 14, Division 6, Chapter 3, Section 15000 et seq., which are the State CEQA Guidelines.

This DEIR evaluates the significant or potentially significant adverse effects on the physical environment resulting from implementation of the proposed project; describes feasible measures, if needed, to mitigate any significant or potentially significant adverse effects; and considers alternatives that may lessen one or more of the significant or potentially significant adverse effects.

1.2 SCOPE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

Pursuant to CEQA, the discussion of potential effects on the physical environment is focused on those impacts that may be significant or potentially significant. CEQA allows a lead agency to limit the detail of

discussion of the environmental effects that are not considered potentially significant (PRC Section 21100, CCR Sections 15126.2[a] and 15128 of the State CEQA Guidelines). CEQA requires that the discussion of any significant effect on the environment be limited to substantial, or potentially substantial, adverse changes in physical conditions that exist within the affected area, as defined in PRC Section 21060.5 (statutory definition of “environment”).

On June 11, 2015, MROSD issued a Notice of Preparation (NOP) (Appendix A) to inform agencies and interested parties that an EIR was being prepared for the above-referenced project and invited comments on the scope and content of the document and participation at a public scoping meeting. The purpose of an NOP is to provide sufficient information about the proposed project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (14 CCR Section 15082[b]). The NOP was posted with the State Clearinghouse, posted on the MROSD website, and distributed to public agencies, interested parties and organizations. A determination of which impacts would be potentially significant was made for this project based on review of the information presented in the NOP, comments received as part of the public review process for the project, and additional research and analysis of relevant project data during preparation of this DEIR.

This DEIR includes an evaluation of the following environmental issue areas and other CEQA-mandated issues (e.g., cumulative impacts and growth-inducing impacts):

- ▲ Aesthetics;
- ▲ Air Quality;
- ▲ Biological Resources;
- ▲ Cultural Resources;
- ▲ Geology, Soils, and Seismicity;
- ▲ Greenhouse Gas Emissions;
- ▲ Hazards and Hazardous Materials;
- ▲ Hydrology and Water Quality;
- ▲ Land Use;
- ▲ Noise;
- ▲ Recreation;
- ▲ Traffic and Transportation; and
- ▲ Utilities.

1.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA requires that the discussion of any significant effect on the environment addresses substantial, or potentially substantial, adverse changes in the physical conditions that exist within the affected area. A lead agency is not required to provide a detailed discussion of the environmental effects that would not be significant, and may instead provide a brief statement of dismissal (CEQA Statutes Section 21100, CEQA Guidelines Sections 15126.2[a] and 15128). Based on a review of the information presented in the NOP, and comments received as part of the public review process (Appendix A), impacts associated with agricultural and forestry resources; mineral resources; population and housing; and public services, would not result in significant environment effects for the following reasons.

1.3.1 Agricultural and Forestry Resources

The Preserve is comprised of open space, primarily second-growth Douglas fir and redwood forest, and has been identified by the Farmland Mapping and Monitoring Program as Other Land. No Important Farmland is located within the Preserve (DOC 2014). In addition, the Preserve is currently designated by the County of Santa Clara as Other Public Open Lands, which allows for lands that are open to public access, and that are

open to the public through permit only. The site is zoned Hillside, which allows for agriculture, mining, and limited recreation, among other non-urban uses. Although there may be minor tree removal associated with the construction of new facilities (e.g., parking areas, trails, restrooms), substantial tree removal would be avoided. Implementation of the Preserve Plan would focus on protecting and preserving open space forest lands. The proposed Preserve Plan includes management guidelines that include forest management to promote forest health; however, implementation of the Plan would not result in conversion of forest land to non-forest use. Therefore, this issue area is not discussed further in this DEIR.

1.3.2 Mineral Resources

The *Santa Clara County General Plan* lists eight existing resource extraction sites or quarries (Santa Clara County 1994). None are located within the Preserve. In addition, the Preserve does not meet the criteria to be listed or considered for a future mineral resource extraction site, and is therefore zoned accordingly. The Preserve Plan intends to expand public access to key areas and preserve the natural ecology of the site, which would not result in the loss of any known mineral resources, or preclude future access to any mineral resources. Therefore, no impact to mineral resources would occur and this issue is not discussed further in this DEIR.

1.3.3 Population and Housing

A project is considered to be growth-inducing if it fosters economic or population growth, directly or indirectly, in the surrounding environment. These impacts could result from projects that include housing construction or the removal of an obstacle to growth, such as expansion of a wastewater treatment plant, extending transportation routes into previously undeveloped areas; and establishing major new employment opportunities. Implementation of the Preserve Plan would provide recreational facilities within the Preserve and expansion of existing facilities on-site. Although existing structures may be rehabilitated, upgraded, or replaced, no additional housing would be constructed within the Preserve. Expansion of existing facilities would not result in population growth through the provision of additional homes, new major employment centers, or in any other manner. In addition, all proposed facilities would be within the existing Preserve, and, thus, would not displace existing housing or people such that replacement housing would be required to be constructed elsewhere. Therefore, no impacts would occur to population and housing and this issue area is not discussed further in this DEIR. The potential for growth-inducing effects of implementing the Preserve Plan are discussed further in Chapter 5, under Section 5.2, "Growth-Inducing Effects."

1.3.4 Public Services

MROSD collaborates with other local agencies in providing public services. MROSD employs 28 badged rangers to augment police and fire protection services provided by other agencies. Rangers are peace officers that patrol MROSD lands to enforce federal, State, and local laws and to perform emergency response and fire suppression duties as needed. Supervising rangers are responsible for overseeing the ranger activities as well as for coordinating with police, fire, and other park agencies regarding public safety concerns on or adjacent to MROSD lands.

MROSD participates in fire protection of its properties, which includes the Preserve, in collaboration with other agencies. MROSD primarily relies on California Department of Forestry and Fire Protection (CAL FIRE) and Santa Clara County Fire Department (SCCFD), with first response and support to the jurisdictional fire agencies by MROSD staff. Fire protection within Santa Clara County is currently provided by 10 municipal fire districts, six county fire districts, two local fire districts, and CAL FIRE. The unincorporated areas of the county, including the Preserve, are served by the Santa Clara County Central Fire Protection District and CAL FIRE (Santa Clara County 1994). CAL FIRE and SCCFD provide fire suppression, basic and advanced rescue,

advanced life support first response medical services, hazardous materials and technical rescue response, fire inspection, fire investigation, disaster preparedness, and public education. There are 259 full time firefighters and 40 volunteer firefighters within the county that are based at 17 fire stations (SCCFD 2015).

The Preserve Plan would not include additional housing or other project elements that would increase the permanent resident population in the Preserve or surrounding area. There could be a slight increase in the demand for police, fire, emergency services related to opening the Preserve to the public; however, this increase would be minimal and would be covered by the existing police and fire facilities. Moreover, MROSD would add one patrol staff as part of the Preserve opening to ensure adequate patrol and visitor safety coverage (a total of two patrol staff would be added over the life of the plan). There would be no increased demand on schools. In addition, there are no police, fire, school facilities located within the Preserve or in the immediate project vicinity; therefore, the proposed improvements would have no direct effect on public services. This issue will not be evaluated further in the EIR.

1.4 PUBLIC REVIEW AND PARTICIPATION PROCESS

Consistent with the requirements of CEQA, effort has been made during the preparation of this DEIR to contact affected agencies, organizations, and individuals who may have an interest in the project. As described above, this effort included the circulation of the NOP on June 11, 2015, and a public scoping meeting in Los Altos on June 24, 2015. Early consultation with relevant agencies, organizations, and individuals assisted in the preparation of this DEIR.

MROSD has filed a Notice of Completion with the State Clearinghouse of the Governor's Office of Planning and Research, indicating that this DEIR has been completed and is available for review and comment by the public. The public review period will last 45 days, beginning September 16, 2016, and ending October 31, 2016.

1.4.1 Public Information Meeting

A public information meeting on this DEIR will be held during the review period. The meeting will be held in the Board Room, at the MROSD Administrative Office located at 330 Distel Circle, Los Altos, CA 94022, on, September 28, 2016 at 7 p.m.

A Public Notice of Availability of the DEIR, which also includes the date, times, and specific location for the public meeting, has been published in the San Jose Mercury News.

A public hearing to consider the Final Environmental Impact Report has been tentatively scheduled for December 14, 2016, at 7 p.m. The meeting will be held in the Board Room, at the MROSD Administrative Office located at 330 Distel Circle Los Altos, CA 94022. Notices of the upcoming meeting will be sent to all interested parties.

1.4.2 Written Comments

Comments on the DEIR may be made in writing before the end of the comment period (October 31, 2016). Written comments should be mailed or e-mailed to the address provided below. After the close of the public comment period, responses to the comments received on the DEIR will be prepared and published, and together with this DEIR will constitute the Final EIR.

Please mail, e-mail, or fax comments on the DEIR by the deadline to:

Midpeninsula Regional Open Space District
Attention: Lisa Infante Bankosh, Open Space Planner III
Mailing Address: 330 Distel Circle, Los Altos, CA 94022
Email: lbankosh@openspace.org (Subject line: Bear Creek Redwoods EIR Comment)
Fax: (650) 691-0485

Hard copies of the DEIR can be reviewed at the locations listed below and an electronic version can be viewed online at http://www.openspace.org/news/public_notices.asp.

Midpeninsula Regional Open Space District
Administrative Office
330 Distel Circle
Los Altos, CA 94022-1404
(650) 691-1200
Office hours: 8:30 a.m. to 5:00 p.m., Monday through Friday (except holidays)
Go here for directions to this office: <http://www.openspace.org/contact-us>

Los Gatos Library
100 Villa Avenue
Los Gatos, CA 95030
Hours: 11:00 a.m. – 8:00 p.m. Monday and Tuesday, 10:00 a.m. – 6:00 p.m. Wednesday through Friday, 10:00 a.m. – 5:00 p.m. Saturday, 12:00 p.m. – 5:00 p.m. Sunday.

1.5 AGENCY ROLES AND RESPONSIBILITIES

1.5.1 Lead Agency

For this EIR, MROSD is the lead agency under CEQA, as defined in Section 15367 of the State CEQA Guidelines.

1.5.2 Responsible and Trustee Agencies

Responsible and trustee agencies are consulted by the lead agency to ensure the opportunity for input during the environmental review process. Under CEQA, a responsible agency is a public agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (PRC Section 21069). The project may be subject to the permitting requirements of the County of Santa Clara, California Department of Fish and Wildlife (CDFW), San Francisco Bay Regional Water Quality Control Board, and Bay Area Air Quality Management District.

Under CEQA, a trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070). CDFW is a trustee agency with jurisdiction over fish and wildlife and their habitats that may be affected by this program.

1.6 DOCUMENT ORGANIZATION

This DEIR is organized as follows:

Chapter 1: Introduction, provides an introduction to the environmental review process; describes the purpose of the EIR; identifies lead, responsible, and trustee agencies; and outlines the organization of the DEIR.

Chapter 2: Executive Summary, summarizes the EIR process and the objectives of the proposed project; provides a brief overview of the project description; describes the project alternatives; identifies areas of controversy; and summarizes the next steps in the public review process. The Executive Summary also contains a table that summarizes the significance of the environmental impacts that would result from the proposed project.

Chapter 3: Project Description, describes the background and need for the proposed project, identifies project objectives, and provides a detailed description of the proposed project.

Chapter 4: Environmental Setting, Impacts, and Mitigation Measures, is divided into sections for each environmental issue area that was not scoped out as part of the environmental review process. For each environmental issue area, the section describes the existing environmental setting (i.e., baseline conditions) and regulatory framework, presents significance criteria or thresholds for determining the significance of impacts, evaluates environmental impacts on the physical environment associated with the proposed project, identifies mitigation for any potentially significant and significant impacts, and identifies the level of significance following implementation of the mitigation. Sections 4.1 through 4.13 analyze the potential impacts associated with Bear Creek Stables Alternative B, unless otherwise noted. Alternative B would include the greatest number of facilities, would have the largest footprint, and proposes a more intensive use at Bear Creek Stables; therefore, analysis of this alternative would encompass all potential impacts associated with Alternatives A, B, C and A2.

Chapter 5: Other CEQA Considerations, discusses cumulative impacts that could result from implementing the proposed project in combination with other past, present, and reasonably foreseeable future projects in the area; discusses the potential for the proposed project to induce growth; discloses any significant and unavoidable impacts identified in the environmental impact analysis; and describes the potential for the proposed project to result in a significant and irreversible commitment of resources.

Chapter 6: Alternatives, describes alternatives to the proposed project, including the No-Project Alternative and potentially feasible alternatives that would avoid, reduce, or eliminate significant impacts identified in Chapter 3, and identifies the environmentally superior alternative. Alternatives that have been proposed and rejected from further consideration are also identified, along with an explanation of the reasons for their rejection. Alternatives are not analyzed at the same level of detail as the proposed program, consistent with the provisions of CEQA Guidelines section 15126.6(d).

Chapter 7: References, lists the references used in preparation of this DEIR.

Chapter 8: Report Preparation, identifies report preparers.

2 EXECUTIVE SUMMARY

2.1 INTRODUCTION

This Executive Summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123. As stated in the State CEQA Guidelines Section 15123(a), “[a]n EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical.” State CEQA Guidelines Section 15123(b) states, “[t]he summary shall identify: (1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; (2) areas of environmental controversy known to the Lead Agency, including issues raised by agencies and the public; and (3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.” Accordingly, this summary includes a brief synopsis of the proposed project and project alternatives, environmental impacts and mitigation, areas of known environmental controversy, and issues to be resolved during environmental review. Table 2-1 (at the end of this section) presents the summary of potential environmental impacts, their level of significance without mitigation measures, the mitigation measures, and the levels of significance following the implementation of mitigation measures.

2.2 PROJECT COMPONENTS

Midpeninsula Regional Open Space District (MROSD) is the Lead Agency for the Bear Creek Redwoods Preserve Plan (Preserve Plan or proposed project). The Preserve is located in the south-central portion of Santa Clara County (and one parcel within Santa Cruz County), just west of Lexington Reservoir and 9 miles south of Monte Sereno/Los Gatos. The Preserve is currently open for use by-permit-only for stable riders and hikers. Existing facilities located on-site include trails, a small informal parking area, the former Alma College Site, and Bear Creek Stables. The Preserve Plan would include opening new areas to low-intensity recreation at the Preserve and construction of additional trails and parking areas for public use, enhancement of native habitats and protection of sensitive biotic resources, interpreting and protecting cultural resources, and maintaining and operating Preserve facilities over the long term. The Preserve Plan also includes renovations to Bear Creek Stables and rehabilitation and interpretation of the former Alma College site. Expansion of Preserve public access facilities and implementation of resource protection and enhancement projects will be phased over the course of 15-20 years.

The Preserve Plan includes four elements applicable to the entire Preserve: 1) Public Use and Facilities, 2) Natural Resource Management, 3) Cultural Resource Management, and 4) Maintenance and Operations. In addition, the Preserve Plan includes specific use and management actions and proposed facility improvements for the Bear Creek Stables and the former Alma College areas of the Preserve.

A detailed description of the project components is included in Chapter 3, “Project Description,” of this document.

2.3 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Pursuant to State CEQA Guidelines Section 15382, a significant effect on the environment is defined as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” Chapter 4 of this Draft EIR describes in detail the significant environmental impacts that would result from implementation of the proposed project. Chapter 5 provides a

discussion of cumulative and growth-inducing impacts. Table 2-1 summarizes the environmental impacts and mitigation measures discussed in these chapters.

2.4 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Detailed mitigation measures are identified in Chapter 4 of the DEIR that are intended to mitigate project effects to the extent feasible. These mitigation measures are identified in Table 2-1. After implementation of the proposed mitigation measures, nearly all of the adverse effects associated with the project would be reduced to a less-than-significant level. However, the proposed project would result in significant, unavoidable impacts related to historic buildings.

As discussed in Impact 4.4-2, the former Alma College Site has been fully documented and evaluated for historic significance and historic integrity. It has been determined that none of the buildings retain enough integrity to be considered individually eligible resources, but that they do provide value to the cultural landscape. The Alma College Cultural Landscape Rehabilitation Plan, incorporated into Preserve Plan, includes demolition of three dilapidated buildings and partial demolition of a fourth building, stabilization of the 1909 chapel and the 1934 library superstructure, rehabilitation of a number of landscape features, and extensive interpretation. These actions would result in less-than-significant impacts to the cultural landscape, and would allow the public to visit and understand the multi-layered history of the site. However, the “Alma College Complex” remains listed on the Santa Clara County Heritage Resource Inventory; it was originally listed in 1995. Due to listing on this local register, individual buildings at the site are considered historic resources under CEQA. Demolition of these historic resources would result in a **significant and unavoidable** impact because the historic resources would no longer exist. The Preserve Plan includes actions to reduce the impact by requiring documentation of the resources; however, implementation of the mitigation does not reduce the impact to a less-than-significant level.

2.5 SUMMARY OF PROJECT ALTERNATIVES

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed project with alternatives to the project that are capable of attaining most of the project’s basic objectives, but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a “range of reasonable” alternatives, including the “no project” alternative. Chapter 6, “Alternatives to the Project,” of this Draft EIR provides an analysis of the comparative impacts anticipated from three alternatives to the proposed project: 1) the No Project Alternative, which assumes no future/new demolition, environmental restoration, or public access and associated facilities would occur; 2) the No Alma College Rehabilitation Alternative, which includes all of the components of the proposed project with the exception of the rehabilitation of the former Alma College Site, including structure demolition; 3) the No Special Events Alternative, which includes all of the components of the proposed project with the exception of special events at the Bear Creek Stables site and the former Alma College site.

As discussed in Chapter 6, the No Special Events Alternative is considered the environmentally superior alternative because it slightly reduces several impacts associated with the proposed project including air quality, GHG emissions, and noise, and, unlike the No Project Alternative or the No Alma College Rehabilitation Alternative, the No Special Events Alternative would not result in greater impacts to historic structures compared to the Preserve Plan. Also, the No Special Events Alternative would meet all of the project objectives.

In addition, Section 4 of this Draft EIR evaluated the potential for environmental impacts resulting from multiple options for the Bear Creek Stables (see Chapter 3, “Background and Project Description,” for details). Because the stables options are similar from an environmental impact standpoint, most sections of the Draft EIR discuss them together. In some instances, they are discussed separately when individual components of each alternative require specific analysis.

2.6 AREAS OF CONTROVERSY

Section 15123 of the State CEQA Guidelines requires the summary section of a Draft EIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public. The following provides a summary of issues raised through scoping and comments on the Notice of Preparation (NOP) that could be considered controversial. The comment letters received on the NOP are included in Appendix A of this document.

- ▲ Water supply and improvements.
- ▲ Food facilities/Special events.
- ▲ Noise.
- ▲ Manure management.
- ▲ Regional trail connectivity.
- ▲ Access to Parks properties.
- ▲ Sewage.
- ▲ Minimizing disturbance by limiting the new facilities constructed at Bear Creek Stables.
- ▲ Improving drainage.
- ▲ Adding a restroom compliant with the Americans with Disabilities Act.
- ▲ Installing upgrades to catch rain water.
- ▲ Improving ingress and egress throughout the site.
- ▲ Maintaining existing capacity at Bear Creek Stables.

The Draft EIR addresses the above issues to the extent that the issue is an environmental issue that is likely to result from the project. However, it does not address impacts that are speculative and not reasonably foreseeable. Substantive issues raised in the NOP comment letters that are not related to environmental impacts will be addressed separately under a different cover.

2.7 ISSUES TO BE RESOLVED IN THE EIR

Section 15123 of the State CEQA Guidelines requires the summary section of a Draft EIR to identify issues to be resolved in the EIR including the choice among alternatives and whether or how to mitigate the significant project effects. The Draft EIR includes an evaluation of potential environmental impacts resulting from the various Bear Creek Stables options used for environmental analysis (see Chapter 3, “Project Description,” for details). The Draft EIR does not recommend one option over another. The MROSD Board of Directors will determine the appropriate Bear Creek Stables alternative based on the information included in this Draft EIR, the merits of each option, as well as other information that may be submitted as part of the administrative record.

Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
4.1 Aesthetics			
<p>Impact 4.1-1: Effects to a scenic vista or substantial degradation of the site's existing visual character or quality. The project site is part of the overall scenic vista associated with the Santa Cruz Mountains portion of the Pacific Coast Range. This scenic vista, including the project site, is visible from Highway 17, SR 35, and surrounding rural residences. The visual character of the project site is primarily a natural setting dominated by views of dense evergreen and deciduous forests. Proposed improvements at Bear Creek Stables would not result in a substantial adverse change to the scenic vista or degrade the visual character or quality of the site. Instead, it would provide a more unified appearance to the existing developed area of the Stables property. At the former Alma College site, the visual character of the project site would change with proposed demolition of several existing dilapidated and hazardous structures. Although the change would be noticeable to those familiar to the site, because the former Alma College site access is currently restricted, any changes to the visual character would be mostly unnoticed. In addition, the change to the visual character would not be considered an adverse visual change, but would rather benefit from the overall rehabilitation and reuse of the former Alma College site, which would allow the public to gain access and appreciate the visual qualities of the site and structures proposed for rehabilitation. Other project components, such as trails, restrooms, and parking areas, would be designed consistent with County and MROSD policies related to visual quality. Overall, changes in the views of the Preserve's recreational facilities would be barely perceptible and would not obstruct the panoramic views of the site and surrounding areas. Therefore, these activities would not substantially degrade the visual quality and character of the sites or have a substantial adverse effect on a scenic vista. This would be considered less-than-significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.1-2: Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or local scenic road. Activities proposed that may result in tree removal include the establishment of new recreation trails and construction of parking areas and driveway access. Specifically, construction of parking areas near the former Alma College site would result in removal of several medium- to small-sized trees, and construction of the driveway to the Lower Parking Lot would require removal of several trees (to maintain</p>	LTS	No mitigation measures necessary.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
adequate line of site) near Bear Creek Road, a Santa Clara County local scenic roadway. Two of the trees to be removed would likely qualify as heritage trees, due to their species (coast live oak) and size. No tree removal is proposed within view of SR 35 and Highway 17, and rock outcroppings located on the site would not be removed or altered. Historic-era buildings located at the former Alma College site are proposed for demolition or rehabilitation; however, views of the former Alma College site are not available from Highway 17 or SR 35, and are only fleetingly available from Bear Creek Road. Some distant and limited views of proposed structures within the Bear Creek Stables property may become available to Highway 17 motorists and distant views of new recreational trails may become available to Bear Creek Road, Highway 17, and SR 35 motorists. Consistent with MROSD Policy SA-1, proposed trails and associated signage would be located in areas that minimize their visibility from a distance and in a way that blends in with the natural environment. In addition, implementation of Environmental Protection Measures AES-1 and AES-2 would ensure that proposed trail alignments blend in with the surrounding natural setting and that siting of trails would avoid noticeable changes to open hillsides and ridgelines. Overall, these activities would not have a substantial adverse effect on scenic resources within the vicinity of a state scenic highway or local roadway. This would be a less-than-significant impact.			
Impact 4.1-3: Substantial new source of light or glare. Limited nighttime lighting is currently used at the Bear Creek Stables arenas. This lighting would continue to be used with implementation of the Preserve Plan. New lighting associated with proposed structures on the Bear Creek Stables property would be limited to safety lighting. Outdoor lighting is not provided within MROSD preserve parking areas, and limited special events at the former Alma College site or Bear Creek stables would occur only during posted Preserve (daytime) hours. Environmental Protection Measure AES-4 requires that new lighting includes light shields and other devices to ensure that no new light or glare will impact sensitive receptors. This would be a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS
4.2 Air Quality			
Impact 4.2-1: Short-term construction-generated emissions of criteria air pollutants and precursors. Short-term construction-generated emissions would not exceed BAAQMD's significance threshold for criteria air pollutants and precursors (i.e., ROG, NO _x , exhaust PM ₁₀ and PM _{2.5}). The project also includes dust control and other	LTS	No mitigation measures necessary.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>construction-related measures required in BAAQMD’s Best Management Practices. Therefore, fugitive dust emissions would not contribute to concentrations of PM₁₀ and PM_{2.5} that exceed the NAAQS or CAAQS and other construction-related emissions would not exceed recommended thresholds. This would be a less-than-significant impact.</p>			
<p>Impact 4.2-2: Long-term operational emissions of criteria air pollutants and precursors. Operation of the proposed plan under full buildout would not result in emissions of ROG, NO_x, PM₁₀, or PM_{2.5} that exceed applicable mass emission thresholds. Thus, long-term operational emissions of criteria air pollutants and precursors would not conflict with the air quality planning efforts or contribute substantially to the nonattainment status of Santa Clara County with respect to the NAAQS or CAAQS for ozone, PM₁₀, or PM_{2.5}. This would be a less-than-significant impact.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.2-3: Mobile-source carbon monoxide emissions. Though buildout of the plan would result in additional vehicle trips on the surrounding roadway network, project operation would not result in increases in traffic such that the BAAQMD screening criteria for local carbon monoxide (CO) concentrations would be triggered. Therefore, the project would not result in increased concentrations of CO that would expose sensitive receptors to unhealthy levels. This would be a less-than-significant impact.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.2-4: Exposure of sensitive receptors to toxic air contaminants. Construction activities would not result in substantial emissions of diesel PM, even during the most intense construction season, and would not take place in the same locations affecting the same off-site receptors in the plan area every construction season during the buildout period. During major construction of proposed project features, the Preserve area under construction would be closed to the public (consistent with MROSD practice), avoiding exposure of Preserve users to toxic air contaminants. TACs associated with long-term operations of the BCRPP would also be intermittent and relatively low. Therefore, levels of TACs from project-related construction and operations would not result in an increase in health risk exposure at off-site sensitive receptors. This impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.2-5: Exposure of sensitive receptors to odors. The proposed project would not result in any new sources of odor into the area or introduce new odor-sensitive receptors where they would be exposed to substantial objectionable odors. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
4.3 Biological Resources			
<p>Impact 4.3-1: Loss of special-status plants. Although there have been no documented occurrences of special-status plants within the Preserve, there is potential habitat for a number of special-status plant species on-site. Special-status species are protected under ESA, CESA, or CEQA. Ground-disturbing activities related to the trail construction, road improvements, water conveyance pipelines, improvements to Bear Creek Stables and the former Alma College site, or road and trail improvements/maintenance could result in disturbance or removal of habitat for special-status species; however, implementation of environmental protection measures, which includes pre-construction surveys and avoidance measures would further minimize potential effects on special-status plants. In addition, recreational use of the Preserve is expected to be primarily limited to previously disturbed areas. Therefore, the potential for loss of special-status plants would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.3-2: Loss of bat colonies or special-status individuals. Implementation of the Preserve Plan would involve modifications to existing abandoned buildings within the former Alma College site and some tree removal. Previous surveys have documented the presence of bat colonies within several of the former Alma College buildings. Rehabilitation, demolition, sealing, or other construction activities at these facilities could result in disturbance to active bat colonies that could affect the survival of young or adult bats. In addition, removal of large trees that provide roosting habitat could affect survival of young or adult bats. Loss of an active bat colony or special-status bats would be potentially significant.</p>	PS	<p>Mitigation Measure 4.3-2: Implement measures to protect bat colonies. To mitigate for activities requiring removal of roosting bats from buildings, pre-construction surveys for roosting bats within areas of potential disturbance in the Preserve will be conducted by a qualified biologist. Surveys will consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and/or an evening emergence survey to note the presence or absence of bats. The type of survey will depend on the condition of the buildings. If no bat roosts are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts, but are not required.</p> <p>If roosts of Townsend's big-eared bats, pallid bats, or western red bats are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in coordination with CDFW and may include construction and installation of bat boxes or other structures suitable to the bat species and colony size excluded from the original roosting site.</p>	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		<p>Roost replacement will be implemented before bats are excluded from the original roost sites. MROSD has successfully constructed bat boxes elsewhere that have subsequently been occupied by bats. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the structures may be removed or sealed.</p> <p>To mitigate for removal of large trees during the April through August nursery season to tree roosting bats:</p> <ul style="list-style-type: none"> ▲ Avoid removal of trees greater than 16 inches in diameter at breast height (dbh) during the April through August nursery season when possible. ▲ If removal of trees greater than 16 inches dbh during the April through August nursery season cannot be avoided, a qualified biologist will conduct surveys for roosting bats where suitable large trees are to be removed. Surveys will consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to note the presence or absence of bats. If evidence of roosting bats is found, the number and species of roosting bats will be determined. If no evidence of bat roosts is found, then no further study will be required. ▲ If bat roosting sites are located in trees to be removed during the nursery season, no nursery sites will be disturbed until a qualified biologist confirms that there are no lactating females and that young are fully independent of flight and thermoregulation. If a non-nursery bat roost is to be removed, a roost removal plan shall be prepared and submitted to CDFW. The roost removal plan will describe the method of exclusion of bats from the roost. Possible methods include installation of one-way doors or sealing roost entrances for bats that roost within tree cavities. Netting or other methods may be used to prevent bats from roosting within vegetation. No bats will be excluded until the plan is approved by CDFW and alternative roosting habitat is available. The bats will be excluded from the roosting site before the site is closed. 	
<p>Impact 4.3-3: Loss of special-status wildlife. Implementation of environmental protection measures (See Appendix C) as part of Preserve Plan would ensure that proposed activities would not result in the degradation of habitat and loss of special-status wildlife species, including nesting birds and special-status mammals. However, improvements proposed in or adjacent to ponds, waterways, or wetlands could affect special-status amphibians and reptiles. Special-status species are protected under ESA, CESA, California Fish and Game Code, CEQA, or other regulations. Ground-</p>	PS	<p>Mitigation Measure 4.3-3a: Implement measures to protect special-status amphibians and western pond turtle.</p> <p>MROSD shall implement the following measures during construction within suitable habitat for special-status amphibians:</p> <ul style="list-style-type: none"> ▲ Construction within or adjacent to waterways will be avoided during the breeding season for California red-legged frog and foothill yellow-legged frog (November – March) and western pond turtle (May – mid-July). If construction 	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>disturbing activities related to construction could result in disturbance or removal of habitat for these species or loss of individuals. Therefore, the potential loss of special-status wildlife would be potentially significant.</p>		<p>cannot be avoided within or adjacent to waterways during the breeding season, a qualified biologist shall conduct a pre-activity survey for California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, and western pond turtle prior to implementing actions that include ground disturbance, vegetation removal, or other activities within or adjacent to potential habitat that could otherwise harm California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, or western pond turtle. A qualified biologist shall inspect the work area while vegetation and debris is removed during the initial phase of construction. Because Santa Cruz black salamander lay and brood eggs below ground, prior to ground disturbance, rocks, logs, and other debris shall be turned over and visually inspected. If no California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, or western pond turtle are observed during either the pre-activity survey or during removal of vegetation and debris, then work may proceed without a qualified biologist present. If any of these sensitive species are observed at any time before or during construction within the work area by anyone involved in the project, work shall cease and USFWS and/or CDFW shall be contacted. Measures to avoid and minimize disturbance to sensitive reptiles and amphibians shall be implemented and may include delaying the disturbance until after eggs or larvae have metamorphosed, redesigning the project footprint to avoid the species, moving individuals to areas of suitable habitat outside of the disturbance area, or other feasible measures acceptable to the wildlife agencies.</p> <p>Mitigation Measure 4.3-3b: Implement measures to protect nesting birds. To minimize potential disturbance to nesting birds, project activities shall occur during the non-breeding season (September 16 through February 14), unless it is not feasible to do so, in which case the following measures shall be applied:</p> <ul style="list-style-type: none"> ▲ During trail construction, road improvements, and other construction activities, removal of trees greater than 6 inches dbh shall be limited to the greatest degree possible. ▲ If construction activity is scheduled to occur during the nesting season (February 15 to September 15), a qualified biologist shall conduct pre-construction surveys to identify active nests that could be affected by construction. The surveys shall be conducted before the approval of grading and/or improvement plans and no less than 14 days and no more than 30 	

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		<p>days before the beginning of construction in a particular area. If no nests are found, no further measures are needed.</p> <ul style="list-style-type: none"> ▲ If active nests are found, impacts on nesting birds shall be avoided by establishment of appropriate buffers around the nests. No project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged or the nest is no longer active. A 500-foot buffer for large raptors such as buteos, 250-foot buffer for small raptors such as accipiters, and 250-foot for passerines are generally adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with CDFW depending on site-specific conditions. For trail construction, use of non-power hand-tools may be permitted within the buffer area if the behavior of the nesting birds would not be altered as a result of the construction. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. <p>Mitigation Measure 4.3-3c: Implement measures to protect San Francisco dusky-footed woodrat.</p> <p>To minimize potential disturbance to San Francisco dusky-footed woodrat, the following measures will be implemented:</p> <ul style="list-style-type: none"> ▲ Prior to removal of any buildings or vegetation within riparian, oak woodland, montane hardwood, or coastal scrub, redwood or Douglas fir forests, a qualified biologist will conduct a survey for woodrat nests within the area to be disturbed. If no woodrat nests are found, no further measures are necessary. ▲ If woodrat nests are found, they should be avoided if possible and a minimum buffer of 10 feet shall be established around the nest(s). This buffer may be adjusted in consultation with CDFW. ▲ If the nests cannot be avoided, MROSD will consult with CDFW in areas where removal of San Francisco dusky-footed woodrat nests is required. Consultation will occur prior to removal of the nests. Actions needed to protect woodrat nests will be determined in consultation with CDFW and may include the live capture and relocation of woodrats to suitable adjacent habitats and removal of nesting sites. Trapping activities will occur prior to April and after July each year to prevent impacts to woodrats rearing young or young woodrats. Nest middens will be dismantled by hand under the supervision of a biologist. Nest material will be moved to suitable adjacent areas that will not be disturbed. As 	

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		<p>woodrats exhibit high site fidelity, buildings with previous woodrat nests will be regularly inspected for potential intrusion to prevent infestation.</p> <p>Mitigation Measure 4.3-3d: Implement measures to protect ringtail. If any trees that are 6 inches or greater in dbh need to be removed, MROSD and its contractors shall implement the following measures to protect ringtail:</p> <ul style="list-style-type: none"> ▲ A qualified biologist will conduct pre-construction surveys to identify any potential ringtail den sites. If no den sites are identified, no further measures are needed. ▲ If a ringtail den site is identified, it will not be removed from May through August. The den site may be removed or sealed from September through April. A qualified biologist will verify the den is not occupied immediately prior to removing or sealing the den. 	
<p>Impact 4.3-4: Loss of sensitive natural communities and fill of waters of the United States. Although pipelines, trails, bridges, and other recreational facilities would be located to avoid sensitive natural communities and wetlands to the extent possible, construction of these facilities, including temporary use of cofferdams, could require removal of riparian and wetland vegetation and could result in the placement of fill material into waters of the United States. This impact would be potentially significant.</p>	PS	<p>Mitigation Measure 4.3-4: Avoid and minimize impacts to sensitive natural communities and compensate for loss of riparian and wetland habitats. MROSD will seek to avoid wetland impacts through siting, design, and other avoidance measures. However, if avoidance is not possible, MROSD will review its Routine Maintenance Agreements with CDFW and the RWQCB to determine if the proposed activities are covered by these permits. If so, MROSD will comply with the terms of these existing agreements.</p> <p>If MROSD determines that one or more activities are not covered by existing permits, a jurisdictional wetland delineation will be conducted by a qualified wetland specialist for sensitive areas that cannot be avoided. The preliminary delineation shall be submitted to USACE for verification. The wetlands may be subject to CDFW regulation under Section 1602 of the Fish and Game Code. No grading, fill, or other ground disturbing activities shall occur until all required permits, regulatory approvals, and permit conditions for effects on wetland habitats are secured.</p> <p>If the wetlands are determined to be subject to USACE jurisdiction, the project may qualify for use of a Nationwide Permit if certain criteria are met. For those wetlands that cannot be avoided, MROSD shall commit to replace, restore, or enhance on a “no net loss” basis (in accordance with USACE, RWQCB, and CDFW) the acreage of all wetlands and other waters of the United States that would be removed, lost, and/or degraded with project implementation. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, RWQCB, and CDFW, as appropriate, depending on agency jurisdiction, and as determined during the permitting processes.</p>	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>Impact 4.3-5: Effects of increased recreation on wildlife and inference with wildlife movement. Implementation of the Preserve Plan would result in increased public access to wildlife habitats that previously have experienced limited human disturbance. Proposed trail connections would provide recreational opportunities for hikers, mountain bikers, and equestrians. However, these activities are unlikely to substantially adversely affect native wildlife or plant communities. The construction and use of trails are also not likely to substantially interfere with wildlife movement in the region. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.3-6: Introduction or spread of invasive plants. Invasive species have been documented within the Preserve, and construction, recreational use, and maintenance has the potential to introduce additional invasive plants or cause invasive plant populations to spread. Noxious weeds and other invasive plants could inadvertently be introduced or spread within the Preserve during grading and construction and maintenance activities if nearby source populations passively colonize disturbed ground, or if personnel and equipment is transported to the site from an infested area. Soil, vegetation, and other materials transported to the Preserve from off-site sources could contain invasive plant seeds or plant material that could become established on-site. Additionally, invasive species could be introduced or spread through use of trails by hikers and equestrians. The introduction and spread of invasive species would degrade terrestrial plant, wildlife, and aquatic habitats, including sensitive communities within the Preserve. However, implementation of environmental protection measures and measures in MROSD's <i>IPM Guidance Manual</i> would minimize the introduction and spread of invasive species. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.3-7: Conflict with any local applicable policies protecting biological resources. Although some tree removal would be required for the Preserve Plan, tree removal would be avoided to the extent possible and any trees removed would be done in accordance with local policies and ordinances. Because the proposed project is a plan, detailed improvement programs and grading plans will not be prepared until specific improvements are funded and authorized, which would occur after approval of the Preserve Plan. Once these detailed plans are available, MROSD will coordinate with Santa Clara County to adhere to the requirements of the Ordinance. However, impacts to trees are considered potentially significant until MROSD complies with the County's Tree Preservation and Removal Ordinance.</p>	PS	<p>Mitigation Measure 4.3-5: Remove and replace trees consistent with the Santa Clara County Tree Preservation and Removal Ordinance (County Code, Sections C16.1 to C16.17). MROSD will comply with the requirements of the Santa Clara County Tree Preservation and Removal Ordinance as applied to parcels greater than 3 acres in lands zoned HS and as applied to trees located within County right-of-way. For removal of large oak trees, MROSD will replace each oak tree removed at a 3:1 ratio with 15-gallon trees, in-kind, or other ratio approved by the County. MROSD will maintain each of the replacement trees.</p>	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
4.4 Cultural Resources			
<p>Impact 4.4-1: Change the significance of a historic resource (cultural landscape). The Rehabilitation Plan includes a variety of design features that, when incorporated, result in overall compliance with eight out of ten of the <i>Secretary of the Interiors Standards for Rehabilitation</i>. The alterations proposed in the Rehabilitation Plan would allow the site to convey its layered historic significance and retain its eligibility as a CRHR. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.4-2: Change the significance of a historical resource (Structures). Many extant structures on the Preserve have been evaluated for eligibility for listing on the CRHR. Structures at Bear Creek Stables were found to be ineligible. The classroom, 1934 and 1950 library, chapel, and garage at Alma College have also been found ineligible for listing on the CRHR, nor is the site eligible as a historic district. However, the “Alma College Complex” remains listed on the Santa Clara County Heritage Resource Inventory; it was originally listed in 1995. The proposed project would result in the demolition of four buildings that are listed as part of the “Alma College Complex” on the Santa Clara County Heritage Resource Inventory. There are also other unevaluated historic-era structures, or structural remnants, that could be affected by the project. Demolition of historic resources would result in a significant impact because the historic resources would no longer exist.</p>	S	<p>Mitigation 4.4-2: Document historic buildings prior to removal. The Preserve Plan includes documentation of buildings before demolition; however, because the buildings are considered historical resources, a higher level of documentation is necessary. MROSD will complete documentation of the classroom building, 1950 library, utility garage, and 1934 library, prior to any construction/demolition work initiated at these buildings. Documentation shall consist of a written history of the property and drawings and photographs, as described below.</p> <ul style="list-style-type: none"> ▲ Written History. The Knapp Architects report, <i>Alma College Conditions Assessment Project Phase I: Assessment of Existing Conditions</i>, shall be used for the written history of each building. The report shall be reproduced on archival bond paper. ▲ Drawings and Photographs. An architectural historian (or historical architect, as appropriate) shall conduct research into the availability of plans and drawings of the classroom building, 1950 library, utility garage, and 1934 library as the buildings currently exist. <ul style="list-style-type: none"> ▼ Drawings: select existing drawings, where available, may be photographed with large-format negatives or photographically reproduced on Mylar in accordance with the U.S. Copyright Act, as amended. ▼ Photographs: photographs with large-format negatives of exterior and interior views, or historic views where available and produced in accordance with the U.S. Copyright Act, as amended <p>The documentation shall be prepared by an architectural historian, or historical architect as appropriate, meeting the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards. The documentation shall be submitted to the Santa Clara County Library and the Jesuit Archives in Berkeley.</p>	SU

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>Impact 4.4-3: Cause a substantial change in the significance of an archaeological resource. Implementation of the proposed project could cause a substantial change in the significance of an archaeological resource. Archaeological resources are known to exist on the project site. Some are documented, some are undocumented. Not all of the resources have been evaluated for eligibility for listing on the state or national register. The existence of these resources suggests that there is potential that unknown archaeological resources also exist on the project site. Also, project-related ground-disturbing activities could cause a substantial change in the significance of an as yet undiscovered archaeological resource as defined in CEQA Guidelines Section 15064.5. Implementation of MROSD’s Resource Management Policies and environmental protection measures would minimize impacts to archaeological resources. This impact is less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.4-4: Disturb Human Remains. Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains, if they are present. This impact would be potentially significant.</p>	PS	<p>Mitigation Measure 4.4-4: Halt ground-disturbing activity. If human remains are encountered, all work within 100 feet of the remains will cease immediately. MROSD will contact the Santa Clara County coroner to evaluate the remains and follow the procedures and protocols set forth in §15064.5(e) of the CEQA Guidelines. No further disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains will occur until the County Coroner has made a determination of origin and disposition, which will be made within two working days from the time the Coroner is notified of the discovery, pursuant to State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98. If the remains are determined to be Native American, the Coroner will notify NAHC within 24 hours, which will determine and notify the Most Likely Descendant (MLD). The MLD may recommend within 48 hours of their notification by the NAHC the means of treating or disposing of, with appropriate dignity, the human remains and grave goods. In the event of difficulty locating a MLD or failure of the MLD to make a timely recommendation, the human remains and grave goods shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.</p>	LTS
<p>Impact 4.4-5 Potential impacts to archaeological resources due to increased visitor use. Increased visitor use associated with implementation of the Preserve Plan, including development of new trails and visitor serving facilities, could place people in the vicinity of documented and undocumented archaeological resources. Implementation of MROSD’s Resource Management Policies and environmental protection measures would minimize visitor-related impacts to cultural resources. This impact is less than significant.</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>Impact 4.4-5: Destroy a unique paleontological resource. No paleontological resources are known to occur within the project site or a one-mile radius of the site. However, because paleontological sites have been recorded in Santa Clara Formation sediments, earth-disturbing activities could potentially damage previously unknown paleontological resources. Resource Management Policy CR-3 requires that MROSD staff receive training in the recognition of sensitive cultural resources and that in the event of a find, work in the area is halted until a qualified archaeologist can evaluate the significance of the find; Resource Management Policy GS-3 calls for the protection of paleontological resources by identifying locations and documenting the condition of unique or exceptional geologic features. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
4.5 Geology, Soils, and Seismicity			
<p>Impact 4.5-1: Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or strong seismic ground shaking. The Preserve Plan includes demolition of several structures that currently occupy the former Alma College site, including the classroom and garage, as well as the 1950 library. It would include rehabilitating the 1909 chapel, and potentially retaining only the roof structure of the 1934 library. Existing retaining walls would either be structurally improved or have measures in place, such as planting dense vegetation or installing low fences to act as barriers in order to maintain distance between the walls and future site visitors. Rehabilitation of the preserved structures and any new development would be conducted in compliance with applicable building codes, which regulate the proximity of buildings to identified faults, as well as their design. This impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.5-2: Result in substantial soil erosion or loss of topsoil. The project site sits atop a deep layer of gravelly, sandy loam with a high potential for soil erosion to occur. The loose, coarse quality of the loam allows it to move easily and requires special consideration to prevent soil degradation. Construction of trails, parking areas, and public restrooms could cause temporary erosion. The continued use of the Bear Creek Stables may also result in erosion on the project site. However, through implementation of environmental protection measures combined with measures included in the Preserve Plan to reduce erosion, the project's effect on soil erosion or the loss of topsoil would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact 4.5-3: 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. The Preserve is located on an inactive, deep seated landslide in an area that is potentially unstable because of identified faults. In addition, soils in the area are susceptible to shallow landsliding where slopes are oversteepened or excessive precipitation results in saturated soils. However, because the geotechnical studies for new, habitable structures required by Environmental Protection Measure GEO-6 would include design recommendations for site-specific geologic conditions that would avoid contributing to potential for on- or offsite landsliding, there would be a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS
Impact 4.5-4: Be located on expansive soils, creating a substantial risk to life or property. Soils on the project site have a low shrink-swell potential and are not considered expansive. Additionally, new structures would be constructed in accordance with the California Building Code. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.5-5: Installation of septic tanks or alternative wastewater disposal system on soils incapable of adequately supporting such use. The project would require new and upgraded septic systems. Santa Clara County regulations require a site evaluation to allow proper system design and to determine compliance with the site suitability criteria identified in the applicable ordinance and the 2014 Onsite Systems Manual. Potential effects related to installation of septic tanks or alternative wastewater disposal system on soils incapable of adequately supporting such use would be reduced through compliance with Santa Clara County's regulations related to septic system location and design. This would be a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS
4.6 Greenhouse Gas Emissions			
Impact 4.6-1: Project-generated greenhouse gas emissions. The level of GHG emissions associated with the proposed project would not exceed the threshold of 1,100 metric tons of CO ₂ equivalents per year (MT CO ₂ e/year). Therefore, implementation of the proposed project would not be considered a substantial cumulative contribution to climate change and the project would be consistent with statewide efforts to reduce GHGs. This would be a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS
Impact 4.6-2: Impacts of climate change on the project. Climate change is expected to result in a variety of effects that would influence conditions on the project site. These effects include increased temperatures, increased wildfire risk and sea level rise; and	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
changes to timing and intensity of precipitation, resulting in increased stormwater runoff and flood risk. However, numerous state and County programs and policies would enhance the project's resiliency to these risks. Therefore, this impact would be less than significant.			
4.7 Hazards and Hazardous Materials			
Impact 4.7-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Construction and maintenance activities would increase the regional transportation, use, storage, and disposal of hazardous materials and petroleum products. Improper handling, unsound disposal methods, transportation accidents, or fires, explosions or other emergencies could expose construction workers, nearby persons or residents, and the surrounding environment to accidental releases of potentially hazardous materials. However, MROSD and its contractors would be required to comply with applicable federal, state, and local regulations for handling hazardous materials, including requirements related to reporting accidental releases. Compliance with these regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.7-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment. Hazardous materials could be associated with building materials, other historical uses of the Preserve (such as USTs and chemical application to Mud Lake), and areas of contamination that have not yet been identified. There is potential for site activities to result in the release of these hazardous materials into the environment, which would create a potentially significant hazard to the public or the environment.	PS	Mitigation Measure 4.7-2a: Conduct a hazardous materials survey and limited Phase II investigation. An in-depth hazardous materials survey shall be conducted to further assess the presence of hazardous materials onsite and to provide an inventory of equipment containing hazardous materials that will need to be removed and appropriately disposed. Before initiation of grading or other groundwork, MROSD will conduct focused soil sampling at the former Alma College site. This investigation will follow the American Society for Testing and Materials standards for preparation of a Phase II ESA and/or other appropriate testing guidelines. Specifically, soil and groundwater samples shall be collected in the areas of former structures near the rear entrance to the former Alma College site (e.g., print shop, machine shop, landfill at village site, storage) and analyzed for petroleum hydrocarbons, VOCs, and priority pollutant metals. Based on the results and recommendations of the ESA-level investigation described above, MROSD shall prepare a work plan that identifies any necessary remediation activities, including excavation and removal of on-site contaminated soils, and redistribution of clean fill material on the project site. The plan shall include measures that	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		<p>ensure the safe transport, use, and disposal of contaminated soil removed from the site and will be implemented under the oversight of applicable regulatory agencies. These measures may include: soil profiling and identification of appropriate landfill facilities for contaminated materials and onsite application locations for other soils, plans for stockpile of soil that segregates clean and potentially contaminated materials, preparation of a health and safety plan for protection of workers, and preparation of a transportation plan that identifies approved haul routes for transport of contaminated materials.</p> <p>Mitigation Measure 4.7-2b: Conduct a geophysical survey in the suspected locations of USTs.</p> <p>A geophysical survey shall be conducted at the former Alma College site to confirm the presence or absence of additional underground structures and to determine the extent of associated piping, primarily in the suspected locations of additional USTs (south of the dormitory/plant building, downslope from the pool/Roman Plunge, and south of the former main house). Soil and/or groundwater sampling shall be conducted in the vicinity of these structures and piping to determine whether there is potential subsurface contamination. Soil and groundwater samples shall be analyzed for petroleum hydrocarbons, volatile organic compounds (VOCs), and priority pollutant metals. If the results indicate that contamination exists at levels above regulatory action standards, the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including Santa Clara County DEH, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination.</p> <p>Mitigation Measure 4.7-c: Notify Santa Clara County Department of Environmental Health before conducting earth work near the former Alma College underground storage tank.</p> <p>MROSD shall identify the location of the former Alma College UST on maps used for planning facilities on the project site. If any earthwork or water wells are proposed on, or in the immediate vicinity of, the UST site, MROSD shall notify the Santa Clara County DEH before grading or evacuation of the site, or the installation of water wells. MROSD shall implement any actions identified by Santa Clara County DEH to mitigate the disturbance of remedial contamination. These actions may include additional sampling or preparation of a health risk assessment.</p> <p>Mitigation Measure 4.7-2d: Conduct sediment and surface water sampling in Mud Lake</p>	

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		<p>Before opening the site to public access, MROSD shall conduct sediment and surface water sampling to determine whether historical chemical use in the lake has resulted in residual impacts. Sediment and surface water should be analyzed for petroleum hydrocarbons, VOCs, and pesticides. MROSD will coordinate with Santa Clara County DEH to determine what, if any, further actions are necessary based on the results of the water and soil sample analyses. Recommended actions may include localized removal of materials, in situ remediation actions, and limitations on public access to the site.</p> <p>Mitigation Measure 4.7-2e: Prepare a hazardous materials contingency plan.</p> <p>A hazardous materials contingency plan shall be prepared before the initiation of ground disturbing activities that describes the actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, presence of USTs, or buried building material. The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project.</p> <p>If at any time during the course of constructing the proposed project evidence of soil and/or groundwater contamination with hazardous material is encountered, MROSD shall immediately stop the project and contact the CUPA. The project shall remain stopped until there is resolution of the contamination problem (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of the CUPA and RWQCB.</p>	
<p>Impact 4.7-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school. Because of the limited quantities of potentially hazardous materials required for the project, and the applicability of federal, state, and local regulations that would reduce the potential for hazard associated with the transport, use, and storage of hazardous materials, the project would have a less-than-significant impact on the school within 0.25-mile of the project site following completion of the consultations required by PRC Section 21151.4.</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
<p>Impact 4.7-4: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. While the introduction of persons into open space, including construction and maintenance workers and trail users, has the potential to increase the risk of fire, the preparation of the Preserve Plan provides an opportunity to enhance MROSD's fire safe practices to further reduce the risk and potential severity of a wildfire. Implementation of the practices outlined in MROSD's Resource Management Policies and Environmental Protection Measures would reduce the potential for construction, maintenance, and routine use to ignite dry vegetation through introduction of ignition sources (including construction vehicles and equipment such as power tools and torches that may create sparks). With these BMPs, construction and operation activities would have a less-than-significant impact.</p>	LTS	No mitigation measures necessary.	LTS
4.8 Hydrology and Water Quality Impacts			
<p>Impact 4.8-1: Violate water quality standards or waste discharge requirements, or otherwise degrade water quality. The quality of surface water in the Preserve is currently affected by ongoing erosion due to the design and condition of the existing roads and trails, lack of vegetation in some developed areas, and alterations to surface hydrology that impair surface runoff. The Preserve Plan includes road and trail improvements, revegetation, and upgraded stream crossings to address these conditions. Environmental protection measures (Appendix C) have been incorporated into the project that would effectively limit the potential for the proposed actions to violate water quality standards or waste discharge requirements, or to otherwise degrade water quality during associated construction and management activities. This impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.8-2: Substantially deplete groundwater supplies. Preliminary analysis of pumping the existing MROSD well at the proposed seasonal demand of 2,000 to 8,000 gpd (or at a maximum 1-day demand of 30 gpm) suggest insignificant drawdown effects to nearest known well. The proposed project would have a less-than-significant impact.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.8-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site. Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
area such that there would be a substantial increase in erosion or siltation. Due to the limited scope of potential development, and the design standards and infrastructure upgrades that MROSD has committed to implementing, the proposed project would have a less-than-significant impact.			
Impact 4.8-4: Result in runoff that would either create or contribute to on- or offsite flooding or exceed the capacity of the stormwater drainage system. Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase or change in the surface runoff on the site. Localized improvements would be implemented, including upgrading stream crossings, and general measures related to drainage improvements along the trails, that would reduce the potential for runoff to contribute to flooding or exceed the capacity of the existing drainage system. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.8-5: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or a dam. Generally, the additional design and maintenance activities proposed in the Preserve Plan would reduce the potential for flooding to have a negative effect on the site. There is potential that an existing dam on Aldercroft Creek is located on a trace of the San Andreas Fault, and the potential for failure of this dam to result in flooding is a potentially significant impact.	PS	Mitigation 4.8-5: Conduct a geologic and geotechnical investigation of the dam located on Aldercroft Creek. Within the first five years of implementing the Preserve Plan, MROSD will conduct an in-depth geologic and geotechnical investigation of the dam at the southern end of Alma Lake on Aldercroft Creek that is suspected of being located on a trace of the San Andreas Fault. Upgrade or removal of the dam will be completed according to recommendations of the investigations, and, if necessary, use of trails in the potentially affected areas downstream of the dam will be restricted until the recommendations have been fulfilled.	LTS
4.9 Land Use			
Impact 4.9-1: Conflict with land use plans, policies, or existing zoning. The portion of the Preserve where actions would be implemented under the Preserve Plan is designated as Other Public Open Lands under the <i>Santa Clara County General Plan</i> and is zoned HS. Use of the Preserve for recreation and open space preservation would not conflict with the existing land use designation or zoning. Commercial stables are also conditionally allowed under the HS zoning designation. Continued operation of Bear Creek Stables within the site would therefore require a Conditional Use Permit from the County. Obtaining a Conditional Use Permit would ensure that the uses proposed under the Preserve Plan would not conflict with land use plans, policies, or existing zoning. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact 4.9-2: Conflict with Williamson Act contracts. Three parcels within the Preserve are subject to Williamson Act contract. However, no facilities are proposed within these parcels and the Williamson Act contract for these parcels is currently in the non-renewal process. In addition, recreation is an allowable use within the Williamson Act contract for these parcels. Therefore, implementation of the Preserve Plan would not conflict the existing Williamson Act contract. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
4.10 Noise			
Impact 4.10-1: Short-term, construction-related noise impacts. Project construction activities would involve the use of heavy-duty construction equipment. Construction noise would occur at various levels over a 15-to-20-year period at different locations in the project area. Construction activities would be conducted during weekday and limited Saturday daytime hours. In addition, construction activities would not occur within 126 feet of an existing occupied residence; therefore, construction noise would not exceed the County's standards identified in the Noise Ordinance. As a result, this would be a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS
Impact 4.10-2: Short-term, construction-related vibration impacts. Site preparation and grading activities could require the use of construction equipment that would generate ground vibration. However, the levels of construction-generated ground vibration at nearby sensitive receptors would not be excessive. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.10-3: Long-term increase in noise levels from operation of on-site stationary noise sources. The project would include new stationary noise sources including activities in parking lots and at event spaces, and new heating, ventilation, and air conditioning (HVAC) units. Project-generated stationary noise sources would not result in noise levels that exceed applicable Santa Clara County noise standards or levels that would result in a substantial long-term increase in noise. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.10-4: Project-related traffic noise increase. Traffic generated by the project would result in less than a 2 dBA increase in traffic noise along Bear Creek Road and SR17. This level of noise increase would not be perceptible to the human ear and, therefore, would not be considered substantial. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
4.11 Recreation			
<p>Impact 4.11-1: Increase the use of other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The proposed project would provide a regional trail connection to the adjacent Lexington Reservoir County Park and Sierra Azul Open Space Preserve and a regional trail connection to Sanborn-Skyline County Park via the proposed Skyline-Summit bike trail adjacent to SR 35. These regional trail connections may add new recreational users to these surrounding parks. However, the project's regional trail connections are consistent with the Bay Area Ridge Trail and Santa Clara County Countywide Trails Master Plan. The project also includes the opening of additional trail opportunities and parking and restrooms facilities onsite which would appropriately serve new recreational users. Therefore, implementation of the proposed project is not expected to substantially increase the demand for or use of other parks and open space facilities, such that new or expanded facilities would be required. This impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
4.12 Traffic and Transportation			
<p>Impact 4.12-1: Construction-related traffic impacts. Traffic generated during construction of the Preserve Plan elements would be attributable to delivery trucks and construction workers' trips to and from the site. These trips would be temporary and would occur occasionally over 15-20 years. One of the intersections in the project vicinity is currently operating at LOS F during the a.m. peak commute hour; however, construction trucks would access the Preserve directly from Highway 17 and would not affect traffic at this intersection. All other roadways and intersections affected by construction traffic are operating at acceptable LOS. This impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.12-2: Existing plus project roadway level of service impacts. With implementation of the Preserve Plan, peak hour trips would be added to Bear Creek Road; however, it would continue to operate within its capacity. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures necessary.	LTS
<p>Impact 4.12-3: Existing plus project intersection level of service impacts. Under existing conditions, the Highway 17 northbound ramps/Bear Creek Road intersection is operating at LOS F during the a.m. peak hour. Implementation of the proposed Preserve Plan would generate minor peak hour trips in this direction, which would add several seconds of additional time to navigate through this intersection during a.m.</p>	LTS	No mitigation measures necessary.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
peak hour traffic. All other intersections would operate acceptably. This impact would be less than significant.			
Impact 4.12-4: Future plus project intersection level of service impacts (Cumulative). Under the cumulative plus project scenario, the Highway 17 northbound ramps/Bear Creek Road intersection would continue to operate at LOS F during the a.m. peak period. The small amount of traffic generated by the proposed Preserve Plan would result in an insignificant contribution to the overall delays experienced at this intersection under cumulative conditions. All other intersections would operate acceptably. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.12-5: Safety Impacts. Because Bear Creek Road has many grades and curves, sight distance is limited in several locations, and locating the Preserve entrance off of Bear Creek Road could result in a hazard due to a design feature. However, a new entrance driveway would be constructed in accordance with the <i>Caltrans Highway Design Manual</i> . Construction of a driveway in accordance with applicable design standards for adequate lines of sight would ensure the entrance to the Preserve would not substantially increase hazards due to a design feature. This impact would be less than significant.	LTS	No mitigation measures necessary.	LTS
4.13 Utilities			
Impact 4.13-1: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed. With implementation of the proposed project, water demand on the project site would increase from a maximum of 7,200 gpd to a maximum of 8,000 gpd. Based on the indication of availability of municipal water from SJWC, and results of the groundwater pumping and water quality testing completed for the existing well, it is anticipated that one or both of these on-site water sources would be able to provide adequate water supply to serve project demands. This impact is considered less than significant.	LTS	No mitigation measures necessary.	LTS
Impact 4.13-2: Generate solid waste that could adversely affect landfill capacity. Proposed demolition of on-site buildings and implementation of phased elements of the Preserve Plan would result in a small increase of solid waste generation at the project site. However, adequate landfill capacity is available at the Monterey Peninsula Landfill to accommodate solid waste generated by the project. This is a less-than-significant impact.	LTS	No mitigation measures necessary.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

3 PROJECT DESCRIPTION

3.1 INTRODUCTION

The proposed Bear Creek Redwoods Open Space Preserve Plan (proposed project) directs the use and management of the Preserve for open space protection and recreation, construction of recreation facilities, future uses and repurposing of the former Alma College Site, and enhancements and continued operation of the Bear Creek Stables.

3.2 PROJECT LOCATION

The Preserve is located in the south-central portion of Santa Clara County, just west of Lexington Reservoir and 9 miles south of Los Gatos. (The far southwest parcel is located within Santa Cruz County; however, the Preserve Plan includes no facilities, trails, or any changes in existing use for that parcel, and it will remain closed to the public.) El Sereno Open Space Preserve and Sanborn-Skyline County Park are located to the north, and Sierra Azul Open Space Preserve is located to the northeast. Private property abuts the entire Preserve except for the southeast corner, which is bordered by the Moody Gulch property that is currently owned by the Santa Clara County Parks and Recreation Department. Highway 17 is adjacent to the northeast corner of the Preserve, from which Bear Creek Road provides access to the Preserve (Exhibits 3-1 and 3-2).

3.3 PRESERVE DESCRIPTION

Bear Creek Redwoods Open Space Preserve (“Bear Creek Redwoods” or “Preserve”) encompasses more than 1,400 acres of native evergreen forests, grasslands, and oak woodlands, as well as nonnative stands of grassland and shrub habitat. There are also areas of widespread invasive species. Much of Bear Creek Redwoods is steep and rugged, with several seasonal and perennial streams draining northeast to Lexington Reservoir. Three small human-made ponds are located in the northeastern portion of the Preserve. Existing facilities located onsite include trails, ponds, a small parking area, the former Alma College Site, and Bear Creek Stables. The Preserve is located almost entirely on the eastern slope of the Santa Cruz Mountains, with two small areas at the extreme south end of the preserve extending over the summit to the western slope. Elevations within the Preserve range from approximately 680 to 2,400 feet.

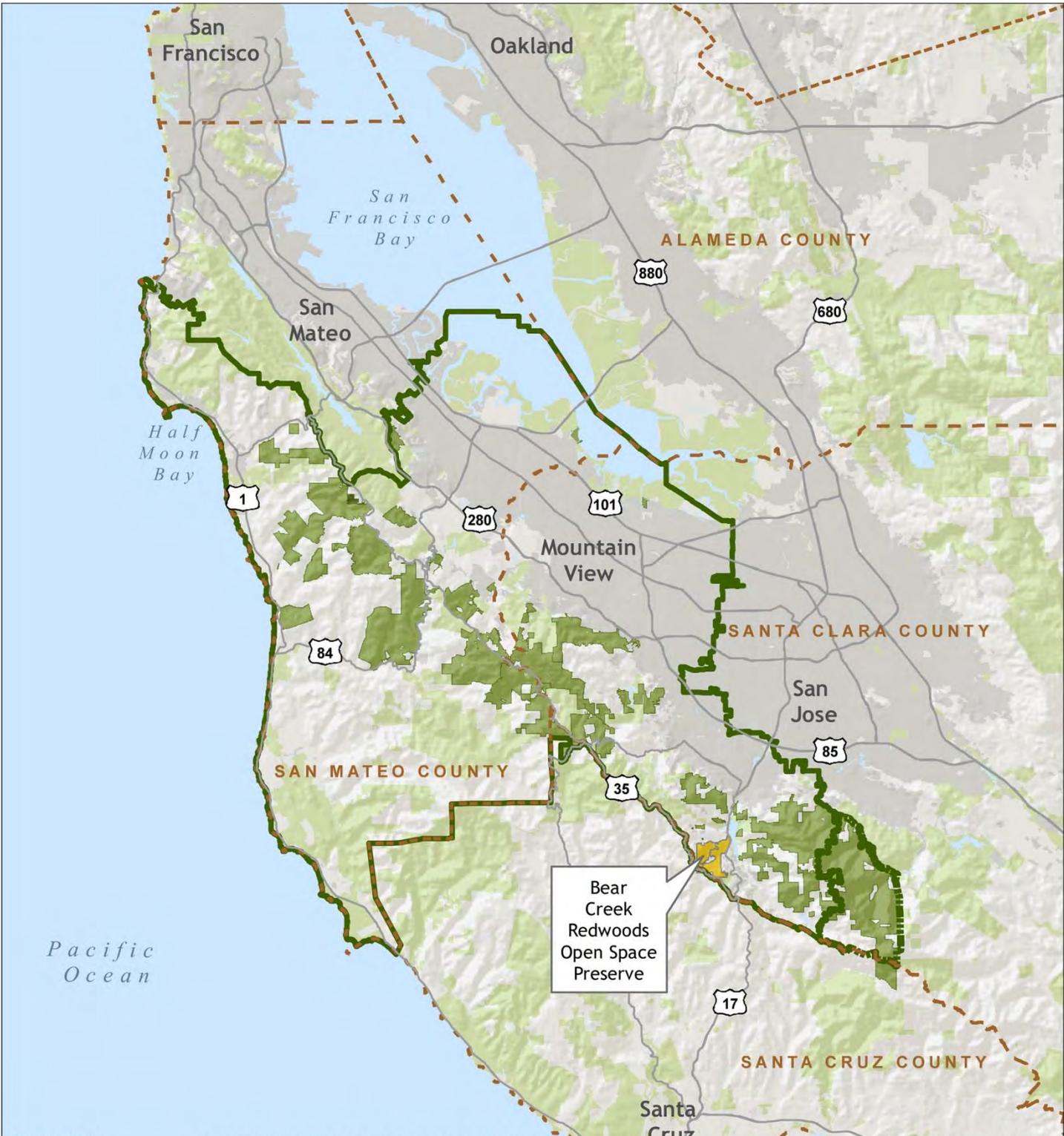
For the purposes of the Preserve Plan preparation, three sub-zones have been identified as part of the Preserve (Exhibit 3-3): 1) the Northeast sub-zone where the former Alma College site and Bear Creek Stables are located, 2) the Southeast sub-zone, and 3) the West sub-zone, which includes all lands west of Bear Creek road.

3.3.1 Existing Facilities and Access

EXISTING FACILITIES

Trails and Parking Areas

Approximately 10 miles of historic logging and access roads on the eastern sub-zone of the Preserve are available for use by-permit-only for stable riders and hikers (Exhibit 3-4). Permit holders may use the 10-vehicle parking lot off Bear Creek Road. Because of the lack of additional parking and the absence of an established pedestrian crossing at Bear Creek Road, the western sub-zone of the Preserve and its additional 8 to 10 miles of historic roads, remain closed.



X15010027 01 001

While the District strives to use the best available digital data, this data does not represent a legal survey and is merely a graphic illustration of geographic features.

- MROSD Preserves
- Other Protected Open Space or Park Lands
- Urban Area
- MROSD Boundary
- MROSD Sphere of Influence
- County Boundary

Midpeninsula Regional
Open Space District
(MROSD)

June, 2015



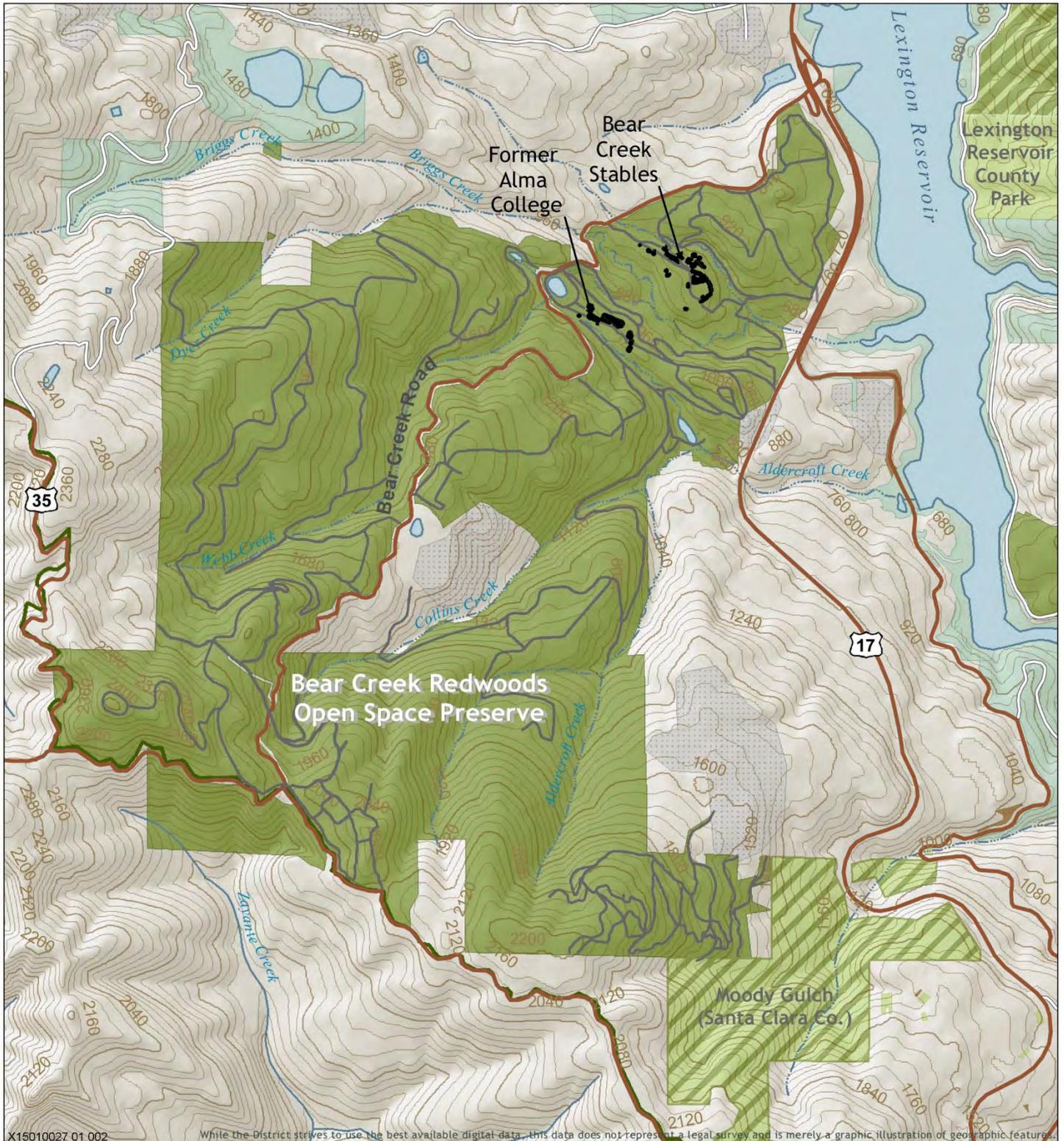
0 5 10 Miles



Exhibit 3-1

Regional Location





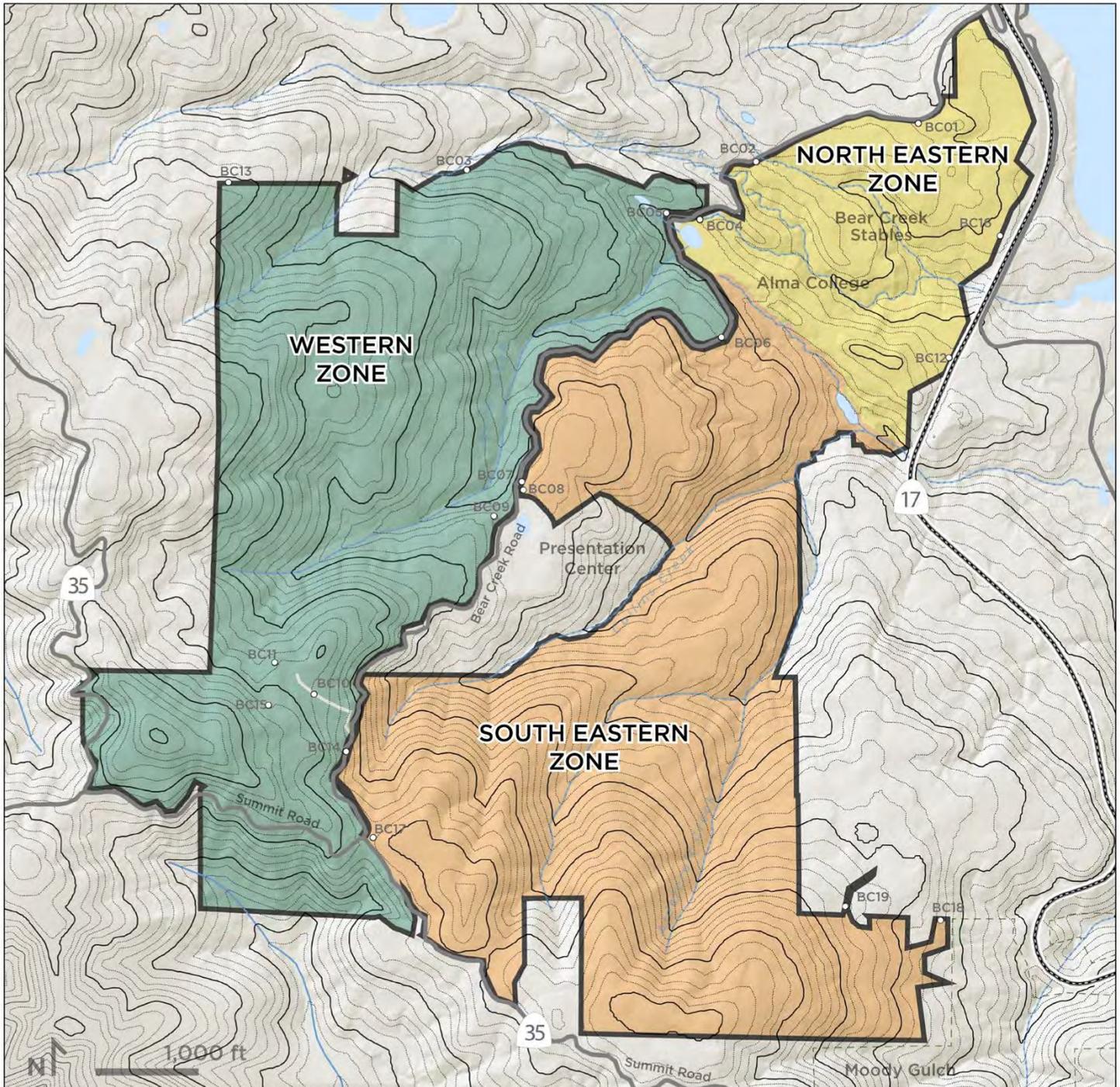
X15010027 01 002 While the District strives to use the best available digital data, this data does not represent a legal survey and is merely a graphic illustration of geographic features.

MROSD Preserves	Urban Area	Midpeninsula Regional Open Space District (MROSD) June, 2015	
Other Protected Open Space or Park Areas	MROSD Conservation or Agricultural Easement		
Watershed Land	Easement over MROSD	Existing Roads/Trails	Miles

Exhibit 3-2

Preserve Location





LEGEND

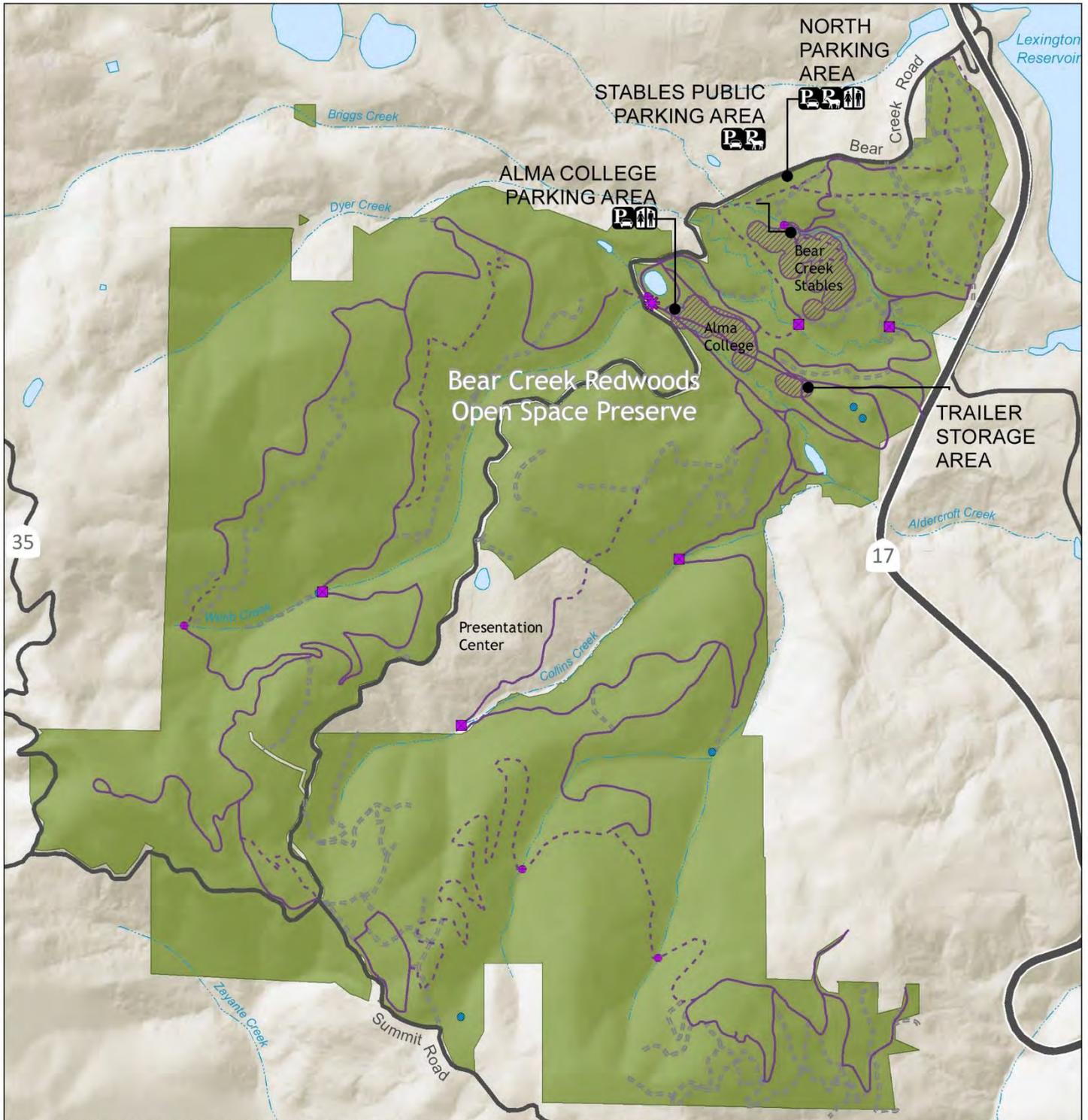
- | | | | | | |
|---|--------------------|---|-------------|---|--------------------------|
|  | North Eastern Zone |  | Highway |  | Preserve Boundary |
|  | South Eastern Zone |  | Major roads |  | Other Public Lands |
|  | Western Zone |  | Creek |  | 200 ft interval contours |

X15010027 01 015
Source: Populous 2015

Exhibit 3-3

Preserve Zones





While the District strives to use the best available digital data, this data does not represent a legal survey and is merely a graphic illustration of geographic features.

- Improve Existing Road for Increased Use
- Construct New Trail
- Close to Public Access/Abandon
- Renovate/Rehabilitate Site
- Construct New Bridge
- Replace Culvert
- Install Pedestrian Crossing

Midpeninsula Regional
Open Space District
(MROSD)
July 2016



X15010027 01 031
Source: MROSD 2016

Exhibit 3-4

Trails and Areas of Disturbance



Bear Creek Stables

Bear Creek Stables occupies a roughly 25-acre area that is located within the northeastern sub-zone of the Preserve, off of Bear Creek Road, approximately 0.75 mile west of Highway 17. Several unpaved roads provide access and circulation on the property. The Stables contain a main arena, a smaller secondary arena, and paddocks for a maximum of 72 horses. A small number of paddocks are located along the top of ridge accessed by steep hillsides. Structures include a caretaker residence, cottage, stable, small animal barn, hay barn, storage/maintenance shop, and office trailer.

The site is primarily accessed by those who board horses at the site; however, members of the public can obtain a permit to park equestrian trailers at the site and access the Preserve's permit-only trail system. Two general-permit parking spaces, for vehicles with trailers, are located along the main entrance driveway at the northwestern corner of the Stables area. Informal programs at the Stables currently include horseback riding along trails located around the facility and extending throughout the eastern sub-zone of the Preserve; educational programs for children (nature walks, caring for small farm animals in the Stables area); and occasional horse riding clinics. The Stables are currently managed and operated on the basis of a month-to-month lease.

Non-potable water is pumped to the caretaker residence, cottage, and emergency water storage tanks from Aldercroft Creek. Both the caretaker residence and cottage share a septic tank. Structures and arenas at the site have lighting and electrical outlets with electrical service provided by Pacific Gas and Electric.

Some of the slopes within the site have lost their vegetative cover and thus are prone to erosion. The site's unpaved roads, arenas, and paddock areas require improvements to address erosion and drainage issues. The Stables operator has implemented some corrective measures to address this issue, but a more comprehensive restoration and maintenance plan is needed to address water quality and other environmental concerns and to improve structures and facilities that have fallen into disrepair.

Alma College

The former Alma College site is an approximately 30-acre complex of ponds, dilapidated structures, terraced grounds, former gardens, and remnant landscape features in the central portion of the Preserve. Originally developed as a sawmill in the 1850s, by the early 1900s the site had been transitioned into a country estate. The estate was greatly expanded by its subsequent owners into a complex, manicured landscape of formal gardens, grounds, and a stables (now Bear Creek Stables). Many of the remaining historic-era features on the Preserve, including the mansion foundation, massive retaining walls and an aqueduct, terraces, pools, fountains, remnant gardens and other landscape elements, a bungalow-style clubhouse, water and road infrastructure, and the Stables buildings, date from 1905-1933.

After nearly 50 years as an estate, the complex was transitioned into Alma College, the first Jesuit school of theology on the West Coast, in 1934. The Jesuit period saw the addition of several structures including a classroom, library, dormitories, garage/workshop, and utility buildings, and the conversion of the clubhouse into a chapel. Alma College was a key educational institution in the region for 35 years. The college closed in 1989 when the Jesuits moved to their current location in Berkeley.

Following the closure of Alma College, with the site under lease as a boys school, the mansion and dormitories suffered fire damage. While a few buildings survived, most were damaged or destroyed, and the remaining buildings are currently dilapidated and unoccupied. In 1995, the Santa Clara County Board of Supervisors approved the listing of the Alma College classroom building, auditorium, chapel, utility building, and library on the Santa Clara County Heritage Resource Inventory. The former Alma College site is currently closed to public access and is surrounded by security fencing to prevent unauthorized entry into the degrading structures.

PUBLIC ACCESS

Currently, the western sub-zone of the Preserve is closed to the public, while the eastern sub-zone is open to trail-riding use by boarders at Bear Creek Stables and to the general public by permit. Permits are issued for single-day use for hiking or equestrian use only, and the Preserve is open a half-hour before sunrise until a half-hour after sunset. Permits are also issued for neighbors to regularly use Preserve trails. The Preserve is publicly accessed via Bear Creek Road off Highway 17; several gates block public road access into the Preserve from other areas.

3.4 PROJECT BACKGROUND AND NEED

MROSD is a public agency formed by voter initiative in 1972. MROSD's purpose is to purchase and permanently protect a regional greenbelt of open space lands, preserve and restore wildlife habitat, watersheds, viewsheds, and fragile ecosystems, and provide opportunities for low-intensity recreation and environmental education. MROSD has protected more than 62,000 acres of land and currently manages 26 Open Space Preserves with more than 225 miles of low-intensity recreational trails, including segments of four regional trails. MROSD lands extend from San Carlos in San Mateo County in the north to the unincorporated Santa Clara County area located south of Los Gatos in the south and represent a wide spectrum of habitat communities, including bayside tidal wetlands, grasslands, oak woodlands, riparian corridors, coyote brush scrubland, and evergreen forests. MROSD's mission statement outlines the critical functions of the agency and prioritizes how the land is managed, balancing the preservation of open space with land restoration, and provision for low-intensity public recreation. Specifically, MROSD'S mission is:

“To acquire and preserve a regional greenbelt of open space in perpetuity; protect and restore the natural environment; and provide opportunities for ecologically sensitive public enjoyment and education.”

In September 2011, the MROSD Board of Directors (Board) adopted a Strategic Plan, which is a long-term plan with open space goals and objectives for fulfilling the MROSD mission of preservation, restoration, public access and education, and providing a framework for what MROSD will accomplish in the next 15–20 years. These strategies include: (a) regional open space greenbelt preservation, (b) protect and restore the natural environment, and (c) public access and education, with defined goals.

Subsequently, the Board approved an Open Space Vision Plan which set forth 54 Priority Action Portfolios focused on the three aspects of the mission: land protection, habitat restoration, and low-intensity recreation. These actions were prioritized by the public and approved by the Board in January 2014 as a slate of 25 high-priority project portfolios and 29 additional portfolios to be completed as time and resources allow. The Vision Plan placed a high priority on the Bear Creek Redwoods Preserve Plan for completion and opening the Preserve for public access, education/interpretation, and resource management actions.

This mission statement, Strategic Plan, and Vision Plan serve as the policy framework with which all Preserve Plan goals, objectives, and implementation actions must remain consistent.

Bear Creek Redwoods Open Space Preserve (Preserve) was established in 1999 with the acquisition of two large properties. These properties were previously owned by commercial developers and had been the subject of planned residential and golf course development. Shortly after the purchase, MROSD entered into a month-to-month rental agreement with a tenant to operate Bear Creek Stables, and perimeter fencing was installed around the former Alma College property. Big Creek Lumber owned prior timber harvest rights to portions of the Preserve, and selective harvesting was carried out in 1999 and 2000.

Since its acquisition, the Preserve has been the subject of discrete use and management planning processes that have largely focused on critical stewardship concerns and maintained status-quo public use patterns. A comprehensive Preserve Plan for Bear Creek Redwoods is needed to provide Preserve-wide goals to help reinforce the Preserve's character, identify long-term management actions to protect and enhance its

unique natural and cultural resources, and define the level and extent of allowable uses that are compatible with the land and the goals established for the Preserve.

With no plan in place, many use and management decisions, including opening new areas to public use, the disposition of existing structures, and targeting key sites for extensive restoration and habitat enhancement, maintenance, and operation have been deferred. The proposed Preserve Plan would balance the responsibility of natural and cultural resource protection with the desire to allow for public enjoyment of the land and interpretation of the cultural and historic resources.

3.4.1 Project Objectives

The proposed project is intended to achieve the following primary objectives. The following objectives reflect the goals of the Preserve Plan:

- ▲ allow general public access and enhance low-intensity recreational opportunities in the Preserve;
- ▲ provide low-impact, high-value, site-sensitive interpretation and environmental education activities;
- ▲ expand opportunities for people with diverse physical abilities to enjoy the Preserve;
- ▲ provide regional and local trail connections;
- ▲ actively involve the public in the use and management of the Preserve;
- ▲ maximize public benefits of Bear Creek Stables by broadening public access and use of the facility;
- ▲ increase the acreage of protected habitat and connectivity to wildlife corridors;
- ▲ protect habitats that support diverse biological resources, are unique, or are important for the conservation of rare, threatened and endangered species;
- ▲ protect native wildlife;
- ▲ repair and monitor ecologically damaged and disturbed areas;
- ▲ protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat;
- ▲ protect and interpret significant historical and cultural resources;
- ▲ within MROSD's basic mission, rehabilitate the former Alma College site so it can be integrated into the Preserve, while respecting the site's history, character and cultural landscape;
- ▲ maintain trails and facilities to protect the natural environment and provide for a quality visitor experience;
- ▲ address environmental hazards;
- ▲ reduce wildfire risk;
- ▲ develop a viable plan that is financially feasible for both a tenant and MROSD that allows for long-term maintenance and operations of Bear Creek Stables; and

- ▲ ensure that all leases, easements, access agreements, and other legal arrangements are consistent with Preserve Plan goals and MROSD's mission, Strategic Plan, and Open Space Vision Plan.

3.4.2 Previous Planning Efforts

The close proximity of the Preserve to major South Bay cities and its continuous, wooded trail system provides high recreational value, and the Preserve is expected to receive heavy visitor use once open to the general public. Planning studies to guide future public access and stewardship actions were initiated shortly after Preserve acquisition. These initial plans culminated with the preparation of a draft Sierra Azul/Bear Creek Redwoods Master Plan and EIR (draft Master Plan) in 2009. As part of the development of the draft Master Plan, a series of stakeholder interviews and public workshops were conducted under the guidance of an Ad Hoc Committee of the Board. However, adoption of the Master Plan was deferred because of shifting priorities.

Individual planning efforts for the Preserve have continued, including additional analysis for the former Alma College site and Bear Creek Stables, completion of a Road and Trail Inventory, and implementation of an intensive invasive species control program. The recent passing of Measure AA, a \$300 million general obligation bond approved in June 2014 by over two-thirds of MROSD voters, renewed the impetus to complete the planning for and opening of the Preserve. The Bear Creek Redwoods Preserve Plan supports Measure AA as one of the 25 key project portfolios. Identified as part of the priority actions of these key projects are portions of the Bear Creek Stables Site Plan, Alma College Landscape Rehabilitation Plan, and new facilities for the overall preserve, including trails and parking areas to open Bear Creek Redwoods Open Space Preserve to general public access.

MROSD's vision statement for the Preserve is as follows:

Hosting one of Santa Clara County's best preserved, second growth redwood forest, Bear Creek Redwoods Open Space Preserve contains a rich historical past that has served to influence and shape the surrounding landscape. The Preserve shall provide the public with a South Peninsula opportunity for tranquil nature study and exploration in a cool, heavily forested environment. The stewardship of this public open space preserve shall be of highest priority, followed by an extended trail system with greater access. Focus will be placed on restoring native habitats; reducing erosion and sedimentation for improved water quality; interpreting the land's historical and cultural resources; providing new parking opportunities to allow for greater public access; and expanding the interior trail connections within the Preserve.

3.5 DESCRIPTION OF PROPOSED PROJECT

Implementation of the proposed Preserve Plan would expand access to the Preserve and create additional trails for public use, enhance native habitats and protect sensitive biotic resources, interpret and protect cultural resources, provide public access to public equestrian programs, and maintain and operate Preserve facilities over the long term. Expansion of Preserve public access facilities and implementation of resource protection and enhancement projects will be phased over the course of 15 to 20 years.

The Preserve Plan includes four Preserve-wide elements: 1) Public Use and Facilities, 2) Natural Resource Management, 3) Cultural Resource Management, and 4) Maintenance and Operations. In addition, the Preserve Plan focuses on two key areas: Bear Creek Stables and former Alma College.

3.5.1 Plan Elements

PUBLIC USE AND FACILITIES ELEMENT

The Public Use and Facilities Element of the Preserve Plan seeks to promote, enhance, and protect wilderness values by creating new trail connections with key Preserve destinations and adjacent open space areas, providing low-impact, site-sensitive interpretation and environmental education activities, and actively involving the public in the use and management of the Preserve. Key actions of the public use and facilities element include opening approximately 20 miles of trails to expanded hiking and equestrian use, creating a multi-use through-trail connecting the Lexington Basin to the Skyline area, construction of up to three new parking areas, creation of a safe pedestrian crossing across Bear Creek Road, formalization of key trailheads, expanding public equestrian programs at Bear Creek Stables, and interpreting the former Alma College historic site and other cultural resources. Dogs would not be permitted in the Preserve because of the high volume of visitation expected and potential conflicts with horses, and the relatively high availability of dog-accessible trails in the local region. Each of these actions is described in more detail below.

Connectivity

- ▲ **Proposed Trail Network and Uses.** Implementation of the Preserve Plan would include the addition of new trails, realignment or improvement of existing trails, and in some cases formal closure of existing and abandoned roads through restoration (Exhibit 3-4). In addition, the entire existing trail network would be opened to hikers and equestrians, and would include one multi-use trail (i.e., hiking, equestrian, and bicycles) as a regional connector trail traversing the Preserve north to south. This multi-use trail would be approximately 4.75 miles long and would connect the intersection of Summit and Bear Creek roads (regional connection Skyline-Summit trail to the Bay Area Ridge Trail) at the southern edge of the Preserve to Alma Bridge north of the Preserve (connection to Lexington Reservoir). Trails that are redundant or are located in sensitive habitat areas would be closed. MROSD would work with the County of Santa Clara, San Jose Water Company, and other neighboring land owners to designate a future regional trail connection between Bear Creek Redwoods and El Sereno Open Space Preserve.
- ▲ **Types of Trails.** It is anticipated that once open to the public, the Preserve would be visited by a variety of new users including hikers, equestrians, bicyclists, and those on approved mobility devices. All trail routes would be designed to provide a variety of experiences through different types of terrain. Some trails would afford expansive views, while many others would traverse the wooded areas of the Preserve and provide a more secluded experience.

Three types of trails are proposed in the Plan. These trail types are consistent with best practices and regional trail guidelines.

- ▶ **Multi-Use Trail.** This connector trail would utilize the widest routes in the Preserve to the greatest extent possible. The proposed alignment corridor follows existing patrol roads for much of its length, and also includes construction of an approximately 1.5-mile segment in the northeastern zone that would bypass existing hiking and equestrian trails. The optimum width of this type of trail is 12 feet, but the final width would be determined by the amount and intensity of trail use and specific field conditions, such as topography, vegetation, and sensitivity to environmental resources. The Preserve Plan requires that trails involving bicycles be developed to assure 100-foot sight lines whenever possible, and where it is not possible, the inclusion of safety signs and reduced speed limits should be considered.
- ▶ **Shared Trails (hiking and equestrian use).** These natural-tread shared trails are recommended throughout most of the Preserve to allow safe use by equestrians and hikers. The Preserve Plan recommends an optimal width of 6 feet for this type of trail. Where treads are narrower than 6 feet, the Plan recommends adding passing areas.

- *Narrow Trails (hiking and equestrian use).* Given the typically steep terrain at the Preserve, some trails would be narrow trails for hiking and equestrian use. These would be no less than 4 feet in width.

Access and Parking

- ▲ **Parking Areas.** Implementation of the Preserve Plan would include construction of three new parking areas, at least one of which would accommodate horse trailers (Exhibit 3-4). All parking areas would include restrooms, sign boards, split-rail fencing, wheel stops, native vegetation, and entrance signs following MROSD's standards, unless otherwise noted below. The parking areas would be paved and would be designed to accommodate the maximum use for each area, while minimizing the footprint of the parking areas and potential effects on sensitive resources. Note that the existing Bear Creek Stables access at Mellots Road (i.e., stables driveway) would be improved to provide access to Bear Creek Stables. Based on recommendations contained within a sight distance analysis for this existing access point prepared by Hexagon Transportation Consultants, a no-left-turn sign would be installed at the driveway for drivers exiting the Stables. See Section 4.12 "Traffic and Transportation" for a detailed discussion.
 - *Alma College Parking Area.* The first parking area is proposed adjacent to "Upper Lake" at the former Alma College site, near the current permit parking area (which would be closed and restored). This parking area will be integrated into the rehabilitated Alma College cultural landscape and, linking to eastern zone trails as well as the pedestrian crossing to the western Preserve, is anticipated to be the central trailhead for the Preserve. Preliminary designs propose two interconnected parking zones accommodating up to 60 vehicles. A bicycle rack and an easy-access trail around Upper Lake will be included at the site. A picnic area is also under consideration. Construction of this parking area will also include a pedestrian crossing of Bear Creek Road (see below), and a new driveway, south of the existing driveway location, to improve sight distance and safety.
 - *Bear Creek Stables Parking Area.* The second parking area would be located within the new, re-designed visitor area at Bear Creek Stables. An existing informal parking lot at this location currently provides parking for approximately 20 vehicles. The Preserve Plan proposes configuration of a new parking area with a maximum capacity of approximately 30 vehicles that would replace the existing informal lot. Additionally, a separate horse trailer parking area with capacity for 2 to 4 public horse trailers is proposed for the Stables site, as well as long-term parking/storage for trailers belonging to boarders at the Stables. A separate paved horse trailer storage area is also being considered for a flat disturbed area between the former Alma College site and Highway 17. This area would be less than one acre, would accommodate up to 20 trailers, and would be accessed via the highway. Access would be infrequent because the area would be used for long-term storage, rather than daily use.
 - *North (Lower) Parking Area.* This parking area is proposed in the northeastern section of the Preserve, approximately 0.5 mile from Highway 17 and 600 feet east of the Bear Creek Stables gate. Preliminary designs for this parking area provide a capacity for up to 51 vehicles, and eight large reverse-parking spaces for horse trailers. The north parking area would also include a bicycle rack and space for horse staging. A new trailhead and connector trail would be designed at this location to access the trail network. According to the Sight Distance Study by Hexagon Transportation Consultants (2015) (Appendix B), the construction of this parking area's driveway would require the removal of up to two existing large oak trees to provide safe sight lines.
- ▲ **Road Crossings.** Providing safe crossings across Bear Creek Road is important for the integration of existing and future trails within the Preserve. A road crossing at grade is proposed along the section of Bear Creek Road near former Alma College. This site was chosen based on its adequate lines of sight, safe ingress and egress, ability to connect to the trail system, adjacency to parking areas, history of prior use, and anticipated level of existing and future use. Other potential improvements at this crossing may

include signage, limiting speeds along this segment of Bear Creek Road, and/or adding “pedestrian crossing” flashing safety lights, subject to Santa Clara County permitting requirements.

- ▲ **Trailheads and Trail Design.** The new parking areas would also serve as trailheads. As part of the trailhead design, and following MROSD standards, signage would be included to indicate the level of difficulty of the different trails accessed from each trailhead. Additionally, a system of markers or control points, coordinated with each trailhead in the Preserve would be developed. Other trailhead and trail signage would include identity signs, use signs, safety signs, private property signs, interpretive and protective signs, and regional trail connection signs.

Where feasible, the design of trails would recognize the intent of the Americans with Disabilities Act (ADA) and provide accessibility for everyone. Per MROSD standards, trail alignments that have a gentle grade of no more than 5 percent, are readily accessible from parking areas, and have a smooth, sturdy surface are defined as easy access trails. Because of the existing rugged topography within the Preserve, there are few areas where easy access trails are possible. Nonetheless, the Preserve Plan would provide at least one easy access loop in the vicinity of former Alma College. All trails would incorporate sensitive trail design, safe intersections and crossings, and informational and instructional signage on trail use etiquette.

Uses and Programs

All of MROSD’s preserves are managed and maintained to remain as close as possible to their natural state, with the goal of protecting native landscape and natural vistas. Recreational uses and programs such as hiking, horseback-riding, limited low-intensity mountain bicycling, nature study, wildlife observation, picnicking, running, and horse riding lessons are proposed for the Preserve as well as continuation and expansion of equestrian and environmental educational programs. School groups currently visit the site for outdoor education, and this program has the potential to be substantially expanded.

NATURAL RESOURCE MANAGEMENT ELEMENT

Implementation of the Natural Resource Management Element of the Preserve Plan would protect natural areas, wildlife corridors, and habitat for special-status species, restore and monitor disturbed areas, and protect waterways to maintain water quality and aquatic habitat. To achieve these goals, this element focuses on invasive plant management, restoration of highly disturbed or eroded areas and correction of high-priority sedimentation sources, protection of resident special-status bat populations and creation of habitat for common migratory bats, and protection of the Preserve’s three permanent ponds and other aquatic habitat. Forest regeneration would be monitored to ensure optimum recovery from past logging operations. Implementation of the Preserve Plan would also include monitoring, mapping, providing cleaning stations for, and posting information on Sudden Oak Death to reduce its spread. These actions are described in more detail below.

Habitat and Species Protection

- ▲ **Bats.** Tracking known populations of rare wildlife species, such as the bat colonies that inhabit the former Alma College and other Preserve structures, would provide information on the health of these populations and determine the need for future land management actions to protect them. The Preserve Plan proposes to relocate bats currently inhabiting the structures into appropriately-designed structures that will provide alternate roosting habitat for both common and special-status bats. Implementation of the Preserve Plan would also include monitoring the use of bat houses to ensure that relocated populations are thriving.
- ▲ **California Red-legged Frog, and Western Pond Turtle.** The many intermittent creeks and three permanent ponds located within the Preserve provide potential habitat for California red-legged frog (CRLF), a species federally listed as Threatened, and western pond turtle (WPT), a California Species of Special Concern. Although previous surveys failed to detect CRLF, the presence of suitable conditions within the creek corridors suggests that this species could move through the Preserve to seek suitable permanent

aquatic breeding habitat or during dispersal events. Ponds within the Preserve, although they are permanent and provide other required habitat elements, are colonized by non-native fish and bullfrogs, which are known to suppress CRLF populations. WPT has been observed basking in Preserve ponds and is presumed to nest in grassland adjacent to Upper Lake.

Potential actions to enhance habitat for CRLF on the Preserve may include temporarily draining the ponds to eliminate non-native fish, and implementation of a bullfrog eradication program. A pond management plan will be developed during Phase I of Preserve Plan implementation to determine the feasibility of these actions. Upland habitat for CRLF and WPT will be identified and protected as part of the pond management plan, and other Preserve Plan actions (such as trail and parking lot construction) will be designed to avoid or minimize impacts to this habitat.

Ecologically Damaged and Disturbed Areas

Invasive plant species, including French broom, English ivy, sweet pea, periwinkle, teasel, and various non-native thistles are opportunistic colonizers of cleared, open areas of the Preserve, including roads and trails. French broom, a prolific flowering shrub with a persistent seedbank, is widespread and dense in some areas, and threatens native grass- and shrub-land species. English ivy colonizes shady moist areas in the Webb Creek drainage, and has advanced along the streambank engulfing entire trees and dominating the understory. Sweet pea and periwinkle are showy perennial plants that follow historic development patterns within the Preserve, while teasel and thistles colonize open grassland areas in the northern reaches of the Preserve. Existing treatment programs to control invasive species would be intensified as part of the Preserve Plan. Invasive species control would be prioritized, planned, and implemented as part of MROSD's Integrated Pest Management Program. Specific actions include:

- ▲ comprehensive mapping of invasive plant populations;
- ▲ definition of priority species and populations based on threat to native habitats and phasing of public access; and
- ▲ treatment of priority species and populations using an integrated approach, including chemical control (herbicide), and mechanical control (mowing and pulling).

Invasive plant management actions will conform to procedures and guidelines outlined in MROSD's Integrated Pest Management Program Guidance Manual (MROSD 2014). To inhibit invasive plant colonization of disturbed areas, MROSD would continue to use native vegetation and native seeds from local stock in re-vegetation, restoration, and erosion control applications to the maximum extent possible.

Sudden Oak Death Management

A known biological threat to local forest health within the Preserve is Sudden Oak Death, which is caused by the plant pathogen *Phytophthora ramorum*. Within the Preserve, Sudden Oak Death has significantly altered forest structure by causing widespread dieback of tanoak, a small to mid-size hardwood tree that previously dominated the understory of redwood-fir forest in the southern reaches of the Preserve. Implementation of the Preserve Plan would include best management practices (BMPs) for Sudden Oak Death, including removing hazard trees, and temporarily closing heavily infested or dieback areas. The Preserve Plan also proposes installation of Sudden Oak Death cleaning stations at parking areas and posting educational information to reduce spread to other areas of the Preserve.

Watershed and Waterways

- ▲ **Creeks.** The Preserve Plan includes a number of goals, objectives, and actions to protect both water quality within the Preserve's waterways, as well as downstream water resources, which focus on reducing erosion and sedimentation. Erosion and sedimentation can occur when water flows concentrate on unsurfaced roads and trails, or on disturbed slopes that lack adequate vegetative cover. The majority of roads within the Preserve are unsurfaced and are drained by dips (e.g., reverse grade dips or waterbars) or by inboard ditches to ditch relief culverts. The more active patrol roads do not show

signs of significant erosion. The less frequently used or abandoned roads tend to be poorly drained with few drainage structures in place. However, these roads have also not shown significant erosion mainly because the low use they receive allows the dirt road tread to become vegetated. With expected increased use of the roads/trails once the Preserve is opened to the general public, erosion of the road/trail bed may occur unless additional drainage structures are installed. The Plan would manage road-related erosion by decommissioning and re-routing poorly aligned or duplicate roads where appropriate; repairing, replacing, or installing new road and trail drainage structures such as ditch-relief culverts and rolling dips, rocking or seasonally closing muddy road segments, and constructing bridges over unimproved stream crossings. The Plan also includes installation of green infrastructure BMPs (such as bio-retention basins) at Bear Creek Stables, restoration of denuded hillside pasture areas, increasing the width of vegetated buffers between the site and adjacent waterways, and installing filter strips around paddock areas.

- ▲ **Ponds.** The Preserve contains three permanent ponds that were constructed as early as 1850 and now provide recreational value; they are destinations for hikers and other users within the Preserve. As described above, these ponds also provide valuable aquatic habitat for common and, potentially occurring, special-status wildlife. The Preserve Plan proposes to assess each pond, prepare a restoration plan, and implement habitat enhancement measures as feasible to increase habitat value and maintain dam stability in the long term. Additionally, the Plan would incorporate public amenities, such as trails, a viewing deck, and picnic sites, to maximize the recreational and educational potential of the ponds. For the purposes of the Preserve Plan and EIR, these ponds are referred to as Upper Lake (or Front Lake), Mud Lake, and Lower Lake (Exhibit 3-2).

A hydrology and hydraulic analysis as well as a structural assessment of the three ponds will be conducted. This assessment will work in tandem with and build upon the water system analysis currently underway by Balance Hydrologics. Pond inputs, outlets, and current capacity will be documented. A structural analysis, including geotechnical and engineering geology investigations will be completed for each of the ponds. Recommendations to improve or maintain the pond basins and berm for down stream flood protection as well as wildlife habitat will be made. Recommendations will be reviewed by MROSD staff for feasibility. Once approved for long term use and management, any required engineering plans and specifications will be drafted for permitting and re-construction. Pond restoration recommendations will be specific to each pond and may involve inlet and/or outlet improvements, berm reconstruction, de-sedimentation, connection to existing water infrastructure, or installation of drainage features to reduce bullfrog populations.

CULTURAL RESOURCE MANAGEMENT ELEMENT

The Cultural Resource Management Element would protect and interpret significant archaeological and historic resources at Bear Creek Redwoods over the long term. Key actions of this element include rehabilitation of the former Alma College site and interpretation of the site's multi-layered history, which has been extensively documented. This history would be revived and interpreted through restoration of certain landscape elements, including pathways/circulation patterns, remnant shrines, fountains, and other minor site features; vegetation management to regain the site's former open and ordered character; and installation of signage and other interpretive materials. In addition, the chapel and library buildings are important to local history and retain sufficient structural and aesthetic soundness to be re-used with substantial partnership support.

Actions at the former Alma College site would conform to National Park Service Guidelines for Rehabilitating Cultural Landscapes and would create a new use for the site that: 1) retains its distinctive features and spatial relationships, 2) preserves the historic character of the property, and 3) preserves historic structures that retain integrity and significance to the cultural landscape. Site rehabilitation will include selective demolition of existing structures which present a hazard to the public or cannot be repaired to current standards because of local geological conditions or cost constraints. Cultural resource actions will also

include mapping, protecting, and monitoring stone mortars and other prehistoric sites and elements. The specific cultural resource protection and preservation actions are discussed below.

Protection/Preservation of Cultural Resources

- ▲ **Pre-historic Resources.** Implementation of the Preserve Plan would include the continued evaluation documentation of prehistoric resources on the site, and would seek to promote the involvement of local academic institutions in focused efforts to catalogue important archaeological deposits. By continuously updating their cultural resource inventory for the Preserve, MROSD would be able to refer to current information to guide implementation of necessary protection measures and avoid impacts during new facility construction.

According to MROSD's Resource Management Policy, in order to protect confidentiality of and minimize disturbance to prehistoric resources, interpretation of prehistoric sites would be limited to generalized information in interpretive materials. Access to these sites would be restricted.

- ▲ **Historic Structures.** Structures associated with the former Alma College Site and Bear Creek Stables have been evaluated for historical significance. There are currently five extant buildings within the former Alma College Site that are in fair to poor condition, including the chapel, early library (1934), late library (1950), classroom building, carport (mansion ruins) and garage (Exhibit 3-5). A discussion of the historic structures within the Preserve is provided below under Section 2.5.2, "Key Plan Areas."

Interpretation

Interpretive signage would be sited at points of interest and would follow MROSD's signage standards with text and graphics to help visitors understand the history, ecology, or other notable features at the Preserve. Educational information may also be conveyed through the use of online trail maps or interactive guides, as emerging technologies develop. An extensive interpretive program, including signage, brochures, and other media as well as docent tours, will be implemented as part of rehabilitation of the former Alma College site.

Docent Programs

There are multiple opportunities to provide docent programs connected with the Preserve's history, Bear Creek Stables, and the former Alma College site. Potential partners for the restoration, improvement, and maintenance of these Preserve features are academic and educational organizations. The Preserve Plan proposes working with partnering agencies and organizations to create a robust docent program at the Preserve.

MAINTENANCE AND OPERATIONS ELEMENT

Given the overall goal of the Preserve Plan to protect and enhance natural habitats while providing for safe, enjoyable public use and recreation, long-term management of the Preserve would include ongoing Ranger patrols for visitor safety and security, and regular monitoring and maintenance of Preserve natural resources to determine stability and trends. Long-term management of the property would be primarily conducted by MROSD's Visitor Services, Land and Facilities Services, and Natural Resources departments. MROSD would augment patrol and maintenance staffing as required for management of the Preserve and to ensure site security and visitor safety. MROSD would add two new patrol staff over the life of the project. One of those staff would be hired in Phase 1 prior to project operation.

Implementation of the Maintenance and Operations Element of the Preserve Plan would include invasive species control and maintenance of roads, trails, and facilities to protect the natural environment and provide for a quality visitor experience. Such actions would include phased implementation of priority road and trail improvements to minimize erosion and ensure adequate patrol access in the long term, and seasonal closure of poorly-drained trails. Potential environmental and safety hazards, including wildfire, would be addressed. Finally, this Element would include actions to ensure that all Preserve leases, easements, and other legal agreements are consistent with MROSD's mission. Specifically, the Plan

identifies phased improvements to Bear Creek Stables infrastructure to provide for increased public access, environmental protection, and equine health and safety.

Equipment and materials would also be stored on-site periodically for maintenance and management purposes. Equipment would be limited to that needed to perform work. BMPs similar to those described above for construction would be included in the Preserve Plan's environmental protection measures for any equipment or materials storage areas. These environmental protection measures are included as Appendix C of this Draft EIR and are commitments by MROSD designed to protect the environment during construction and operation of the proposed project. Therefore, the environmental protection measures identified in Appendix C are considered part of the proposed project.

Road and Trail Improvement and Maintenance

- ▲ **Major Road and Trail Projects.** Opening existing Preserve roads and trails to general public and increased patrol use requires improvement of several existing stream crossings, installation of up to four new vehicle bridges and up to four pedestrian bridges, as well as installation of retaining walls at some locations to stabilize steep, eroding roadbanks. See Exhibit 3-4 for detail. Full geologic assessments would be prepared which would consider the condition of the existing crossing structures, streamflow, and streambank characteristics. Culvert installation may require temporary stream diversions and are subject to MROSD's programmatic permits with the CDFW and RWQCB to minimize impacts to sensitive aquatic resources. New bridges would be designed to "clear span" streambanks, and typically are 25 to 50 feet in length and 6 to 15 feet wide, founded on poured concrete footings embedded in bedrock. Bridges may be constructed in place from timber, or they may be pre-fabricated steel structures. Typical bridge construction would take 4 to 8 weeks and requires intermittent use of mechanical toting equipment to transport materials to the site, and a mini-excavator to drill holes for the footings. In remote areas, if access is particularly difficult, a helicopter may be used for several hours to transport materials and/or the bridge structures.

Typical retaining walls consist of metal posts or piers driven deep into the slope, placement of timber crosspieces, and backfill with native soil. The majority of retaining walls are under 5 feet tall and 15 feet long. However, several larger walls are likely required, which could extent to 15 feet tall and up to 50 feet long. Constructing a large retaining wall takes 4 to 8 weeks and requires use of an excavator, both to re-grade and to drive the metal piers.

Other major road and trail projects include rocking steep or muddy sections, re-aligning overly steep trails, and installing grade-changes in flat areas to direct stormwater flows off the trail. Construction would require a bulldozer, an excavator, and a dump truck to transport gravel.

Although the projects will be designed to avoid impacts to the natural environment to the maximum extent feasible, the bed and bank of existing drainages may be altered and riparian and wetland vegetation may be removed. Placement of trail material or bridge footings in the drainages would likely be subject to USACE jurisdiction under Section 404 of the CWA and could require Section 401 certification from RWQCB. In addition, the streams supporting riparian and wetland vegetation are regulated by CDFW under Section 1600-1616 of the California Fish and Game Code, which provides for the protection of fish, wildlife, and native plant resources.

- ▲ **Road Maintenance Plan.** MROSD would prepare a Road Maintenance Plan that identifies problem sites and includes a repair history to track road conditions and past roadwork. The Road Maintenance Plan would also include a maintenance schedule to direct maintenance work. MROSD would incorporate the information into a GIS database to facilitate information tracking.



- KEY ELEMENTS**
- Rehabilitate and interpret the features that illustrate the layers of development and use of the property.
 - Reinstate or rehabilitate historic plantings using evergreen shrub plantings on the path through the middle of the site, at the shrines, and in lieu of radial paths.
 - Provide interpretive materials to narrate the cultural landscape components.
 - Stabilize the 1909 chapel, and the 1934 library roof structure.
 - Strengthen north retaining wall, minimally stabilize south retaining wall.
 - Due to their position in relation to the San Andreas fault trace, remove the classroom garage, and the 1950 library.
 - Provide visitor amenities.
 - Establish parking for approximately 60 cars.
 - Establish a regime of vegetation management.
 - Plant garden areas with unirrigated wildflower and grass mixes for improved habitat.
 - Plant with native species to convey the layout of other historical plantings.
 - Seek a project partner or partners for the use of the rehabilitated building and gardens.
- PARTNERSHIP ELEMENTS**
- Rehabilitate chapel and library superstructure for reuse.
 - Provide water, septic, and power to the rehabilitated chapel.
 - Rehabilitate radial gardens near Upper Lake.
 - Provide enhanced visitor amenities including flush toilets

Source: PGA design 2016

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- ▲ **Best Management Practices.** MROSD will follow BMPs during road and trail construction and maintenance to reduce the potential for erosion and sedimentation. The BMPs are included in the environmental protection measures listed in Appendix C. They include:
 - design new trails to minimize grading and concentration of surface water flow;
 - incorporate drainage structures that can accommodate high storm flow;
 - rock trails where native soils are especially prone to erosion, particularly if the intensity of use is expected to be relatively high or vehicles, horses, or bicycles are allowed;
 - address new erosion problems that may arise from severe storms, earthquakes, increased use, or other causes;
 - use inventories and GIS capabilities to evaluate maintenance needs and track repairs; and
 - implement seasonal closures, where and when appropriate.

Water Systems Upgrades

Preserve Water Resources

A variety of historical and extant water systems infrastructure exists on the Preserve. Bear Creek Stables has historically been served by a surface water diversion off Aldercroft Creek, in which flows are conveyed through approximately 7,000 feet of 2-inch plastic pipe leading to a transfer tank and several storage tanks. It is unclear whether this water source will remain viable in the future.

MROSD is a partial owner of the Alma Water System. This system, which is not currently utilized or maintained by MROSD, consists of a 3,500-foot pipeline originating at a San Jose Water Company (SJWC) main line near the Lexington Reservoir, which supplies a 500,000-gallon water tank located in the northeastern Preserve area. This pipeline traverses several neighboring properties before entering the Preserve and would require upgrades on these properties to allow for MROSD use. If these upgrades were proposed to be undertaken, they would require negotiations with private property owners for easements. The feasibility of these improvements is speculative and the use of the Alma Water System is not evaluated as part of the proposed project.

It is anticipated that implementation of Preserve Plan elements, including infrastructure upgrades at Bear Creek Stables, special events and uses at the former Alma College site, and increased public equestrian use would create an increase in water demand. Due to the uncertainties surrounding the existing water supply sources discussed above, additional water supply options are identified in the Preserve Plan. These options include: a direct connection to an existing SJWC line on Bear Creek Road; use of an existing well in the southern Preserve area; and use of existing ponds for fire suppression water. Use of any potential supply option would require installation/replacement of the conveyance pipeline within the Preserve (see Exhibit 4.13-1 in Section 4.13, "Utilities").

Regarding the existing well, preliminary tests indicate that the well has sufficient yield to meet the project's water demand and meets primary water quality standards. (See Section 4.13, "Utilities," for a detailed discussion of water supply.) MROSD would conduct additional well tests to determine specific improvements and the level of treatment necessary (if any) to provide potable water from the well consistent with California Regional Water Quality Control Board requirements. Use of this groundwater supply would require the installation of approximately 16,500 feet of 2-inch, flexible plastic pipeline. Pipeline would follow existing road alignments where possible. The pipeline may be undergrounded along roads and would remain above ground in areas of steep and rugged terrain.

Fire and Fuels Management

The preparation of the Preserve Plan provides an opportunity to enhance MROSD's fire safe practices to further reduce the risk and potential severity of a wildfire. In addition to the human-made facilities within the Preserve, numerous natural resources are also at risk from fire. Fire spreading to neighboring properties is also a concern.

The Preserve is part of the region-wide Lexington Hills Community Wildfire Protection Plan (CWPP), which prescribes management actions to reduce wildfire risk, ensure effective response to wildfire, and enhance defensible space at the wildland-urban interface. MROSD is an active participant in this Plan and will continue to support these regional efforts to manage wildfire risk in the Bear Creek Redwoods area. In addition, standard MROSD fire management practices will continue to be implemented at the Preserve including maintaining defensible space around structures, maintaining and enhancing strategic fuel breaks adjacent to high ignition risk areas (such as roads and parking lots), conducting regular staff training in fire response, and maintaining emergency access roads, turnarounds, and landing zones. In addition to the seasonally available water from the on-site ponds, water tanks would be appropriately sized and located according to Santa Clara County standards to provide water sources for fire suppression.

Safety and Security

In order to ensure visitor safety and security, MROSD will increase current ranger staffing levels (two new patrol staff over the life of the plan) to provide for frequent patrol and rapid emergency response throughout the Preserve once it is opened to general public access. A particular focus will be the new multi-use trail, which would be opened to bicycle use once regional connections are established, currently anticipated in Phase II (Years 4-10). The conceptual trails plan included in the Preserve Plan represents a comprehensive approach to addressing user safety concerns and seeks to minimize potential safety hazards and user conflicts by separating the multi-use trail from established equestrian trails and limiting intersections with hiking/equestrian-only trails to the maximum extent feasible. Nevertheless, creating a safe environment also requires education, monitoring, and enforcement. MROSD will monitor all existing and new trail uses (hiking, equestrian, and bicycle) to determine if trails are being used in compliance with MROSD regulations.

Volunteer Programs

MROSD volunteer and docent groups would be active participants and leaders in roll-out of the Preserve Plan. Combined with the expertise and guidance of field staff, MROSD volunteers would continue to assist in visitor orientation and education. In addition, trained trail patrol volunteers would lead trail etiquette and safety training events, trail maintenance events, and host special events. Trained docents will continue to act as educational and interpretive guides, leading nature walks, cultural tours, and guided hikes and rides in the Preserve.

3.5.2 Key Plan Areas

In addition to the Preserve Plan elements described above, implementation of the Plan would focus on activities within two key areas: Bear Creek Stables and the former Alma College site. These two areas would be the primary locations of actions implemented under the Preserve Plan. Proposed improvements for these areas are described in more detail below.

BEAR CREEK STABLES

The Bear Creek Stables key area refers to a 25-acre site located on the northeastern sub-zone of the Preserve, off of Bear Creek Road and approximately 0.75 mile west of Highway 17. The study area for Bear Creek Stables includes the area bounded by Briggs Creek to the south and east, Bear Creek Road to the west, and an unnamed creek to the north.

Site Design Alternatives

Four site design alternatives are being considered for the Bear Creek Stables area. For most resource areas the potential impacts of implementing any of these alternatives would be mostly similar; these alternatives are discussed together in Sections 4.1 through 4.13, unless otherwise noted.

Alternative A

Alternative A would include improvements to (repair or replacement) the majority of the site's existing infrastructure and would include paddocks for up to 63 horses (boarded horses) (Exhibit 3-6). Public access improvements would include a visitor welcome facility/learning center, visitor parking including horse trailer parking, public restrooms, and a public open air riding arena and open air secondary arena. The pasture area would be fully restored to natural landscape and the paddock area would be rebuilt for improved drainage and equestrian health and safety. The existing stable building would be stabilized and potentially restored for future use, including farm animal housing. The existing caretaker's house would be demolished and replaced with a new residence in the same location and would serve as an office and caretaker's house. This residence would include flushable toilets and a new septic tank. A new hay barn and maintenance/storage area would be constructed and the existing manure dump would be improved.

Alternative B

Alternative B would include most of the improvements described under Alternative A as well as improvements that would increase the public's access to equestrian facilities and programs (Exhibit 3-7). These improvements would include a livery stable and run to facilitate a public trail riding program and a new farm animals' barn. The site design would accommodate 72 horses (12 public program horses and 60 boarded horses.). The existing stables building would be replaced with a new one or two story structure to accommodate an office, visitor center and restrooms. A composting station would also be an optional improvement under Alternative B. Under Alternative B, the main public riding arena would be larger than under Alternative A, would have bleacher seating to better facilitate equine education programs and clinics, and would potentially be covered. Alternative B would also include a secondary arena that would have the option to be covered. Under Alternative B, the existing caretaker's house would be demolished, and a new caretaker's residence would be constructed near the entrance off Bear Creek Road to the stables site to provide greater site security. As with Alternative A, pasture areas would be fully restored, a new hay barn and maintenance/storage area would be constructed and the existing manure dump would be improved.

Alternative C

Minimal Alternative C is the least developed design alternative and includes only safety and environmental protection improvements to provide a safe environment for boarders, their horses, and the public and to protect the site's natural resources (Exhibit 3-8). This alternative would include paddocks for up to 63 horses. Improvements include: demolition of dilapidated structures; restoration of hillsides; minimal improvements to the existing hay barn, manure dump, and arenas; improvements to boarder area, including replacement of paddock fencing and shelters within the existing layout; addition of a public restroom; and minimal road and parking upgrades. With the exception of the new restroom, Alternative C does not propose any other new structures. (Note that this Alternative C is not the same as the original Alternative C discussed during the public outreach process. The original Alternative C included the highest level of development and is no longer under consideration for the site and is therefore not identified in this Draft EIR.)

Alternative A2

Alternative A2 includes modifications to Alternative A to allow for expanded public access while reducing the overall cost of implementation (Exhibit 3-9). The primary difference between Alternative A and A2 is that A2 includes a new livery stable to house public program horses in the public access area, in addition to a new smaller public open air arena. To accommodate these new facilities, the proposed hay barn would be relocated to the new trailer parking area. Paved surfaces would be limited to the main driveways and vehicle parking areas.



1. Horse Stables

- 1.1** Main Riding Arena
- 1.2** Secondary Arena
- 1.3** Round Pen
- 1.5** (23) Boarding Shelters + Paddocks (15x30ft)
- 1.5** (40) Boarding Shelters + Paddocks (15x40ft)
- 1.6** Hay Barn
- 1.7** Manure Dump
- 1.9** Maintenance & Storage
- 1.10** Restrooms at Arena
- 1.11** Trailer Parking (2 to 4 full trailer parking + 10 to 12 trailer storage spaces)

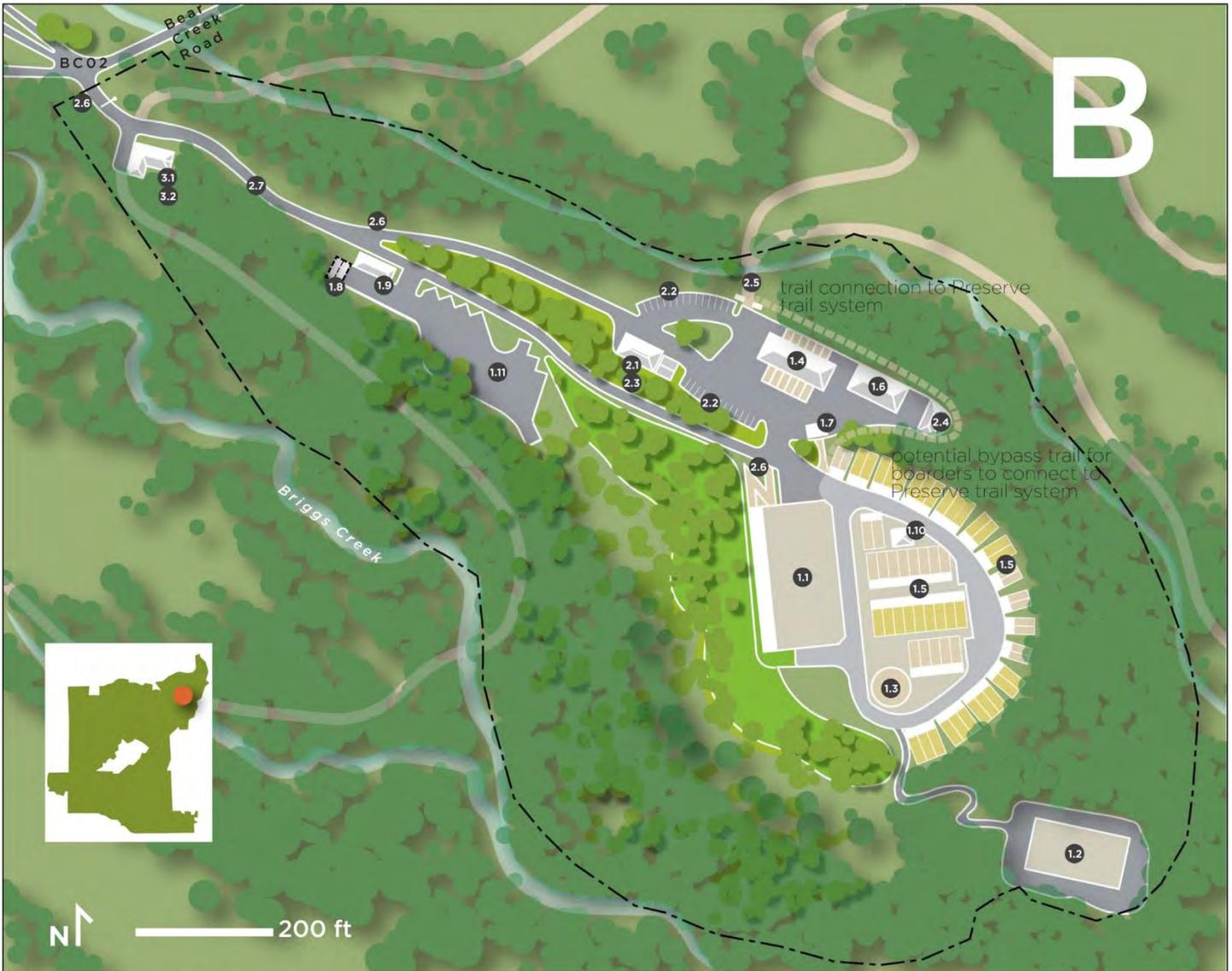
2. Public Access

- 2.1** Public Restrooms
- 2.2** Visitor Parking (25 to 40 spaces)
- 2.3** Visitor Facility (Welcome/Learning Center): shelter under existing tree
- 2.4** Farm Animals Barn (in older stables structure)
- 2.5** Horse/Pedestrian Trailhead
- 2.6** Directional/Informational Signage
- 2.7** Road Upgrades

3. Administration

- 3.1** Office (new building)
- 3.2** Groundskeeper House (new building)

X15010027 01 017
Source: Populous 2016



1. Horse Stables

- 1.1** Main Riding Arena (OPTIONAL: covered)
- 1.2** Secondary Arena (OPTIONAL: covered)
- 1.3** Round Pen
- 1.4** Livery + (12) Runs
 - (25) Boarding Shelters + Paddocks (15x30ft)
- 1.5**
 - (35) Boarding Shelters + Paddocks (15x40ft)
- 1.6** Hay Barn
- 1.7** Manure Dump
- 1.8** Composting Station (OPTIONAL: 20-horse system)

- 1.9** Maintenance & Storage
- 1.10** Restrooms at Arena
- 1.11** Trailer Parking (2 to 4 full trailer parking +10 to 12 trailer storage spaces)

2. Public Access

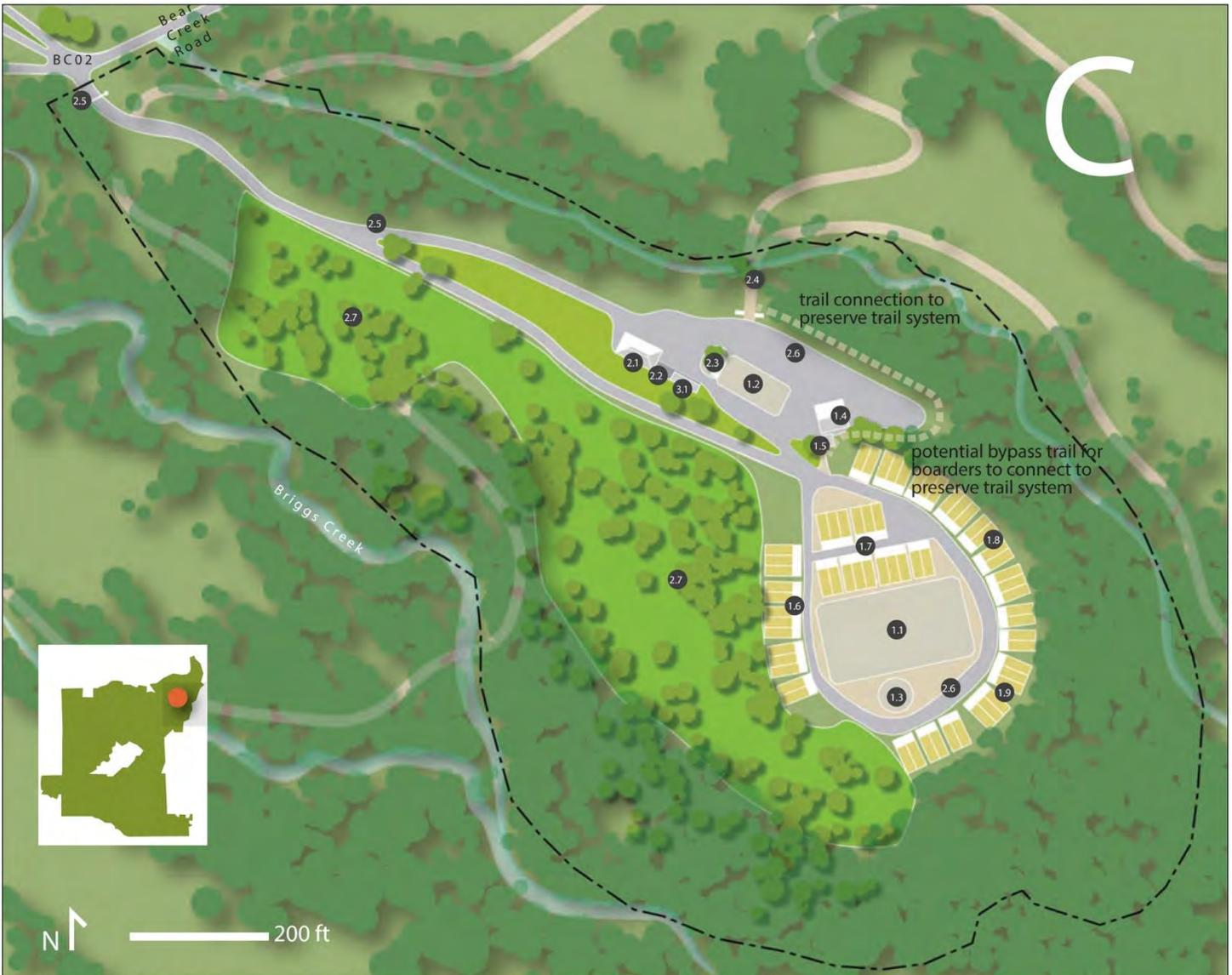
- 2.1** Public Restrooms (in new Visitor Facility)
- 2.2** Visitor Parking (25 to 40 spaces)
- 2.3** Visitor Facility (Welcome/Learning Center): new structure
- 2.4** Farm Animals Barn

- 2.5** Horse/Pedestrian Trailhead
- 2.6** Directional/Informational Signage
- 2.7** Road Upgrades

3. Administration

- 3.1** Office (in new Visitor Facility)
- 3.2** Groundskeeper House (new building at entry)

X15010027 01 018
Source: Populous 2016



1. Horse Stables

- 1.1 Existing Riding Arena with Improvements
- 1.2 Rebuild Secondary Arena (80'x160')
- 1.3 Existing Round Pen
- 1.4 Existing Hay Barn
- 1.5 Covered Manure Dump
- 1.6 (13) Phase One Paddocks (15x40ft)
- 1.7 (16) Phase Two Paddocks (15x40ft)
- 1.8 (18) Phase Three Paddocks (15x40ft)
- 1.9 (16) Phase Four Paddocks (15x40ft)

2. Public Access

- 2.1 Preserve Original Barn Structure (no restoration)
- 2.2 ADA Parking (2 spaces)
- 2.3 Shed Remains for Possible Trial Ride or Lesson Operation
- 2.4 Horse/Pedestrian Trailhead
- 2.5 Directional/Informational Signage
- 2.6 Gravel Road & Parking Improvements
- 2.7 Removal of Structures & Pasture Reclamation

3. Administration

- 3.1 Public Restroom

X15010027 01.019
Source: Populous 2016

A2



1. Horse Stables

- 1.1 Main Riding Arena
- 1.2 Round Pen
- 1.3 (22) Boarding Shelters + Paddocks (15x30ft)
- 1.3 (40) Boarding Shelters + Paddocks (15x40ft)
- 1.4 Hay Barn
- 1.5 Manure Dump
- 1.6 Maintenance & Storage
- 1.7 Restrooms at Arena
- 1.8 Trailer Parking (2 to 4 full trailer parking + 10 to 12 trailer storage spaces)

2. Public Access

- 2.1 Public Restrooms
- 2.2 Visitor Parking (25 to 40 spaces)
- 2.3 Visitor Facility (Welcome/Learning Center): shelter under existing tree
- 2.4 Farm Animals Barn (in older stables structure)
- 2.5 Horse/Pedestrian Trailhead
- 2.6 Directional/Informational Signage
- 2.7 Road Upgrades
- 2.8 Livery: 10 Stalls + Runs
- 2.9 80'x160' Outdoor Arena

3. Administration

- 3.1 Office (new building)
- 3.2 Groundskeeper House (new building)

X15010027 01.035
Source: Populous 2016

Phased Implementation Plans for Alternatives A, B, C, and A2 would focus on essential safety and environmental protection improvements to provide a safe environment for boarders, their horses and the public, and protect the site's natural resources. Futures phases of improvements would be recommended as part of the District's annual Action Plan and programmed into tenant work plans pending funding, available capacity, and other priority needs, resulting in phased budgeting and phased expenditures.

Phase I improvements would include removal of dilapidated structures, restoration of pastures, installation of a public restroom and limited improvements to paddocks, shelters, boarder arena, parking, roads, hay barn and manure dump. Alternative A2 would include the construction of the livery stable and public open air arena in Phase I. Phase II improvements would include additional improvements to roads and parking, replacement of the hay barn and caretaker house, and construction of the new proposed infrastructure, including the public arena, maintenance building, vehicle/trailer parking lot and farm animals barn.

Stables – Resource Management Improvement Standards

The following stables improvement standards would be implemented to improve the resource management and water quality at the site:

- ▲ restore pastures and hillsides to native landscape and remove area from active stables use;
- ▲ eliminate paddocks in public access area;
- ▲ maintain vegetative filter strips between and down slope of paddocks. These areas are not to be used for horse grazing;
- ▲ require a roof for each paddock and ensure that the orientation of the roof directs water away from the enclosure or areas of bare soil and into the filter strip areas;
- ▲ line each enclosure with base rock and geogrid matting for stabilization;
- ▲ stabilize and/or restore existing stables building;
- ▲ demolish, improve and/or construct structures in accordance with final approved site design and structure design guidelines; and
- ▲ provide minimal lighting required for safety and to allow evening tending of animals, while avoiding impacts beyond the site.

Stables - Public Access Programs and Improvements

To maximize public benefit, a public access program at the Stables would be implemented that would include the following:

- ▲ install upgrades to and maintain existing road and drainage improvements for access to and from Stables from Bear Creek Road;
- ▲ designate public access areas as part of the Stables;
- ▲ install a visitor kiosk or center with equestrian program brochures, interpretive information, and District standard signage, and offer public equestrian programs and horse boarding;
- ▲ design and install monument signage at facility entry;
- ▲ provide public restrooms and visitor parking;
- ▲ designate a trail connection that would tie into the rest of the Preserve's trail system;

- ▲ permit limited special events, such as group equestrian clinics, training events, small-scale equestrian demonstrations, and other equestrian-centric outdoor celebrations. The approval of events will be subject to compliance with the following limitations:
 - no amplified sound or music that could be heard beyond the boundaries of the event site;
 - a maximum of 250 attendees allowed per event; and
 - events would occur only during posted Preserve hours.

FORMER ALMA COLLEGE SITE

The Alma College key area encompasses the major structures and landscape elements associated with the former college and previous estates (Exhibit 3-5). The approximately 30-acre site follows a narrow ridge, widened and buttressed by massive retaining walls on its south and north sides, at the edge of the northeastern sub-zone of the Preserve. The main trace of the San Andreas Fault trends in an east-west direction along the site's southern boundary. The area is bounded by two existing roads that run east-west on either side of the ridge, below the retaining walls, and Bear Creek Road that wraps around the site on its north and western edges. Although additional historic-era features, including Moss Lake, the former vineyards, and Bear Creek Stables, are also associated with the estate and Jesuit period, these features are the subject of separate Preserve Plan actions and are not included as part of the Alma College Cultural Landscape Rehabilitation Plan.

Much of the former Alma College site is in poor physical condition, with most buildings severely damaged and unsafe, grounds and gardens degraded by lack of maintenance, and character-defining landscape elements hidden by natural revegetation. The Alma College Cultural Landscape Rehabilitation Plan, which is incorporated into the Preserve Plan, focuses on stabilization of the most structurally intact and architecturally superior buildings: the Alma College Chapel and 1934 Library superstructure. These buildings may be made available to a future partner for rehabilitation and re-use consistent with the MROSD mission, such as a visitor center or classroom. Limited special events, such as outdoor weddings, may potentially be held on the site and managed by a partner through a lease agreement.

In addition to the Chapel and Library buildings, the Plan would rehabilitate and enhance other character-defining elements of each historic period. These improvements would reveal the spatial arrangement of Flood's and Tevis' Alma Dale estate and reinstate its sweeping vistas that were altered by development of Alma College. The Plan calls for reestablishing the formality and grandeur of the former landscape through the replanting with and careful placement and selection of native drought-tolerant species, repair of remaining landscape elements such as pathways, terraced landings, and shrines, and re-instating the form of the Tevis Mansion, Lily Pond, and Roman Plunge footprints with interpretive paving elements or low-maintenance landscaping. Partnerships with historic garden or horticultural societies may provide additional outside resources to assist with vegetation management. A robust interpretive program, including signage and other interpretive media, as well as docent-guided tours, would inform Preserve visitors about the site's layers of history.

The Plan includes demolition of buildings that do not significantly contribute to the integrity of the cultural landscape (garage, 1950 library) or those that cannot feasibly be rehabilitated and re-used because of their proximity to the San Andreas Fault (classroom). Where feasible, foundations will be retained at grade for interpretive purposes. In addition, the northern retaining wall would be structurally reinforced for seismic safety. Barriers would be installed to prevent access within the potential failure zone of the southern retaining wall, which cannot be made seismically safe because of its proximity to fault traces, and along the top of the northern retaining wall to remove fall hazards. Demolition of unsafe structures and reinforcement of the retaining walls would allow the enhanced and rehabilitated site to be safely opened to general public access.

Program Opportunities

Implementation of the Preserve Plan would also include the potential to allow limited special events and group gatherings at the former Alma College site. Equestrian events and trainings are also anticipated at the renovated Bear Creek Stables. Most events would occur on weekends and two events occurring simultaneously is the maximum number of events that would occur at any one time.

The approval of events will be subject to compliance with the following limitations:

- ▲ No amplified sound or music that could be heard beyond the boundaries of the event site.
- ▲ A maximum of 250 attendees allowed per event.
- ▲ Events would occur only during posted Preserve hours.

3.5.3 Project Construction

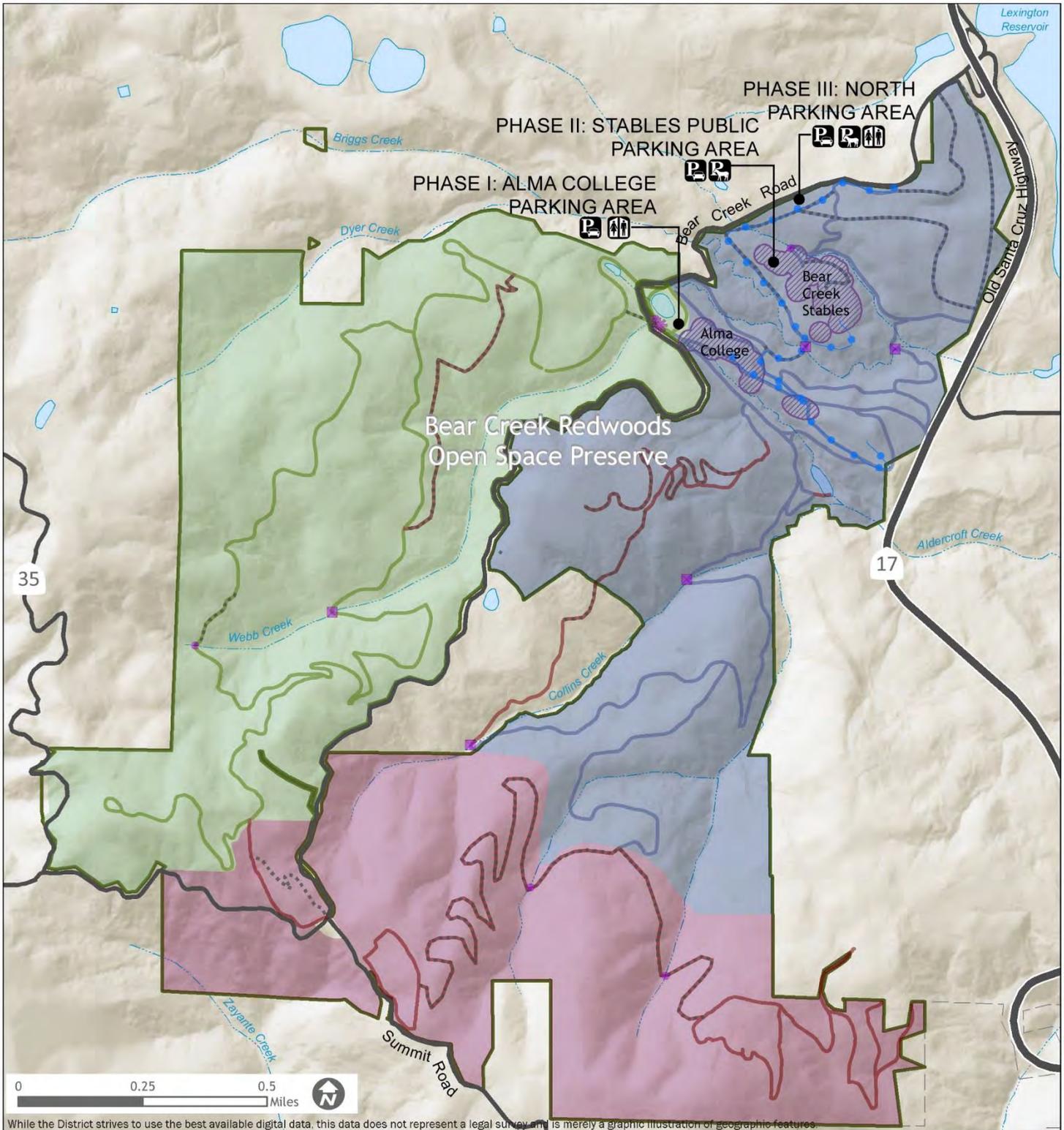
The Preserve Plan would be implemented over the course of 15-20 years (Exhibit 3-10), with immediate actions necessary to open the Preserve to general public access given the highest priority. The majority of these actions are eligible for Measure AA reimbursement. Key construction actions expected to occur during each phase are listed below, for the purposes of assessing construction-phase environmental impacts.

Phase 1 Key Construction Actions (Years 1-3)

- ▲ Implement high priority resource management projects, including invasive species removal, drainage improvements to reduce erosion, and pond enhancement.
- ▲ Construct the Alma College Parking Area, formalize an at-grade pedestrian crossing of Bear Creek Road, and construct a new, 0.5-mile connector trail to the existing trail network in the western Preserve;
- ▲ Open the western Preserve to hiking and equestrian use: treat invasive species, improve roads, and install gates and signage. Construct one vehicle bridge and one retaining wall, and repair or replace the Webb Creek culvert under Bear Creek Road;
- ▲ Implement Phase 1 improvements to Bear Creek Stables, including construction of a livery stables and public arena, improvements to paddocks and shelters in the boarder area, hillside restoration, improvements to driveway, parking, and other critical facilities, new restroom, demolition of dilapidated structures, and stabilization of old stables building. Construct water infrastructure and distribution system. Construction is likely to continue into Phase 2.
- ▲ At former Alma College site, manage vegetation, demolish hazardous structures, remove and properly dispose of debris and stabilize chapel and library (dependent on outside approval, may be completed in Phase 2); or install safety fencing as needed to restrict access;

Phase 2 Key Construction Actions (Years 4-10)

- ▲ In northeastern Preserve zone, install drainage improvements, reroute existing trail, construct stream crossings, including one vehicle bridge and up to two pedestrian bridges, and install gates, fencing, and signage as necessary to open northeast zone to general hiking and equestrian access;
- ▲ To create the northern segment of the new multi-use through trail, construct approximately 1.75 miles of new trail, formalize connections to Lexington County Park and the summit area, and open the multi-use through trail to hiking, equestrian, and bicycle use;
- ▲ Complete Phase 2 improvements to Bear Creek Stables, including additional road and parking improvements (Stables public parking area), and replace haybarn and caretakers house;



While the District strives to use the best available digital data, this data does not represent a legal survey and is merely a graphic illustration of geographic features.

Public Access Phasing

- Phase I 2016-2018
- Phase II 2019-2023
- Phase III 2024-2033

Project Phasing

(Corresponds to Public Access Phasing Unless Indicated)

- Trail Open In Phase I
- Trail Open In Phase II
- Trail Open in Phase III
- Construct New Bridge
- Install Water Pipeline
- Construct New Trail

Midpeninsula Regional
Open Space District
(MROSD)
July 2016

X15010027 01 032
Source: MROSD 2016

Exhibit 3-10

Construction Phasing



- ▲ At the former Alma College site, complete structural stabilization of the northern retaining wall, install permanent safety barriers as needed, rehabilitate pathways, terracing, shrines, roman plunge, lily pond, Tevis mansion footprint, and other cultural landscape elements through minor construction and vegetation management, install interpretive signage.
- ▲ Construct one vehicle bridge, up to two pedestrian bridges, and one retaining wall (described above). Construction of the bridges would not occur simultaneously.

Phase 3 Key Actions (Years 11-20)

- ▲ Construct approximately 3 miles of new trail to complete connection to Summit Road in the eastern Preserve Area.
- ▲ Implement lower priority pond restoration projects.
- ▲ Construct Lower Parking Lot.
- ▲ Construct trailer storage area between former Alma College and Highway 17.
- ▲ Construct two vehicle bridges and up to two pedestrian bridges (described above). Construction of the bridges would not occur simultaneously.

During construction of individual project features and facilities, equipment and materials would be temporarily stored on-site during construction of the proposed project. Equipment and materials parking would occur in currently developed or significantly disturbed areas within the Preserve and would be limited to that needed to perform rehabilitation work. Project construction would occur between 7:00 a.m. and 7:00 p.m. on weekdays and limited Saturdays.

4 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

SCOPE OF THE EIR ANALYSIS

The environmental analysis chapter of this DEIR discusses the environmental and regulatory setting, impacts, and mitigation measures for each of the following technical issue areas (Sections 4.1 through 4.13):

- 4.1 Aesthetics
- 4.2 Air Quality
- 4.3 Biological Resources
- 4.4 Cultural Resources
- 4.5 Geology, Soils, and Seismicity
- 4.6 Greenhouse Gas Emissions
- 4.7 Hazards and Hazardous Materials
- 4.8 Hydrology and Water Quality
- 4.9 Land Use
- 4.10 Noise
- 4.11 Recreation
- 4.12 Traffic and Transportation
- 4.13 Utilities

TERMINOLOGY USED IN THE EIR

This DEIR uses the following terminology to describe environmental effects of the proposed project:

Less-Than-Significant Impact: A project impact is considered less than significant when it does not reach the standard of significance and would therefore cause no substantial change in the environment (no mitigation required).

Potentially Significant Impact: A potentially significant impact is an environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

Significant Impact: A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects to the environment where feasible.

Significant and Unavoidable Impact: A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level if the project is implemented. If a lead agency proposes to approve a project with significant unavoidable impacts, it must adopt a statement of overriding considerations to explain its actions (CEQA Guidelines, Section 15093(b)).

Cumulative Impacts: According to CEQA, “cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the “project’s

incremental effect is cumulatively considerable... [or] ... provide a basis for concluding that the incremental effect is not cumulatively considerable (CEQA Guidelines, Section 15130 (a)).”

Mitigation Measures: The CEQA Guidelines (Section 15370) define mitigation as:

- a) avoiding the impact altogether by not taking a certain action or parts of an action;
- b) minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- e) compensating for the impact by replacing or providing substitute resources or environments.

FORMAT OF THE ENVIRONMENTAL ANALYSIS

Each section begins with descriptions of the regulatory and environmental settings as they pertain to a particular issue. The environmental setting provides a point of reference for assessing the environmental impacts of the proposed project and alternatives. The setting description in each section is followed by an impacts and mitigation discussion. The impacts and mitigation portion of each section includes impact statements, which are prefaced by a number in bold-faced type. An explanation of each impact and analysis of its significance follow each impact statement. All mitigation measures pertinent to each individual impact follow directly after the impact statement. The degree to which the identified mitigation measure(s) would reduce the impact is also described.

Environmental Setting

According to Section 15125 of the CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project to provide the “baseline condition” against which project-related impacts are compared. The baseline condition is typically the physical condition that exists when the Notice of Preparation is published. The Notice of Preparation for the Preserve Plan was published on June 11, 2015. Therefore, this EIR assesses the impacts of the Preserve Plan in comparison to the existing land uses at or around that time within the Preserve.

Regulatory Setting

This section of each chapter describes the federal, State, and local regulations that would apply to the proposed project and that could reduce or eliminate potentially significant impacts. This section also informs the reader of the applicable Santa Clara County General Plan policies.

Environmental Impacts and Mitigation Measures

This section analyzes project-specific environmental impacts and recommends mitigation measures to reduce potentially significant or significant impacts. Information included in this section is described in more detail below.

SIGNIFICANCE CRITERIA

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant” (CEQA Guidelines Section 15382). Definitions of significance vary with the physical conditions affected and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make “mandatory findings of significance” (CEQA Guidelines, Section 15065). For all environmental issues, this EIR identifies specific standards of significance.

METHODOLOGY

This subsection identifies the methodology used to analyze potential environmental impacts.

ISSUES NOT DISCUSSED FURTHER

This section identifies any topic in the technical issue area that will not be affected by the proposed project.

PROJECT IMPACTS AND MITIGATION MEASURES

The project impact and mitigation measure section analyzes the environmental impacts of the project. This subsection describes the potential environmental impacts of the proposed project and, based upon the thresholds of significance, concludes whether the environmental impacts would be considered significant, potentially significant, or less than significant. Each impact is summarized in an impact statement, followed by a more detailed discussion of the potential impacts and the significance of each impact before mitigation.

The impact number consists of the section of the EIR in which that impact is identified followed by a dash to indicate the number of the impact in that section. For example, Impact 4.1-1 is the first impact identified in Section 4.1.

It should be noted that, regarding the four Bear Creek Stables Alternatives, Sections 4.1 through 4.13 analyze the potential impacts associated with Bear Creek Stables Alternative B, unless otherwise noted. Alternative B would include the greatest number of facilities, would have the largest footprint, and proposes the most intensive use at Bear Creek Stables; therefore, analysis of this alternative would encompass all potential impacts associated with Alternatives A,B, C and A2. The impact discussion includes a description of applicable regulations and concludes with a statement regarding whether the impact would be less than significant or significant before mitigation.

MROSD has developed a list of environmental protection measures (Appendix C) that are included as part of the proposed project and are designed for the protection of resources and preventing significant environmental effects. Environmental protection measures would be applied to actions within the Preserve whenever possible. These requirements were developed based on MROSD policies, MROSD’s existing best management practices (BMPs), and known regulatory requirements. Under the project, MROSD would determine the effects of the Preserve Plan after consideration of environmental protection measures incorporated into the project.

If an environmental impact cannot be avoided or maintained at a less-than-significant level after consideration of the environmental protection measures, then it would be a significant or potentially significant effect of implementing the Preserve Plan and mitigation measures would be warranted, if feasible. If an environmental impact cannot be avoided or maintained at a less-than-significant level after consideration of environmental protection measures and feasible mitigation is not available to clearly avoid

the significant or potentially significant effect or reduce it to insignificance, the impact is considered to be significant and unavoidable. If the impact is significant and mitigation is required, the finding of significance after mitigation is also identified.

The analysis of environmental impacts considers both the construction and operational phases associated with implementation of the proposed project. As required by Section 15126.2(a) of the CEQA Guidelines, direct, indirect, short-term, long-term, on-site, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed. As described above under “Terminology,” the DEIR uses the following terms to describe the level of significance of impacts identified: less than significant, potentially significant, significant, and significant and unavoidable.

4.1 AESTHETICS

This section describes the existing visual characteristics of the project area and evaluates the potential of the project to result in substantial adverse visual impacts. The visual impact analysis considers existing scenic resources and the potential for public views to be affected by the project.

For the purposes of this analysis, a scenic vista is considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated vantage points that offer panoramic views of great breadth and depth.

No comments pertaining to aesthetics were received during public review of the Notice of Preparation for the proposed project.

4.1.1 Existing Setting

The following text describes the existing landscape character of the project site and surrounding land. The descriptions of existing conditions are accompanied by photographs taken during a site visit in April 2015.

VISUAL CHARACTER OF THE PROJECT SITE AND SURROUNDING AREA

The project site encompasses more than 1,400 acres of dense forests, grasslands, ponds, and perennial creeks located near the northeastern base of the central Santa Cruz Mountains in the west-central portion of Santa Clara County. The project site is just west of Lexington Reservoir and 9 miles south of Monte Sereno/Los Gatos. El Sereno Open Space Preserve and Sanborn-Skyline County Park are located to the north, and Sierra Azul Preserve is located to the northeast. Much of the site consists of steep, rugged terrain, with elevations ranging from approximately 680 to 2,400 feet. The topography of the project site consists of expanses of flat terrain in the northern half, with steep slopes primarily in the southern half of the site. The topography in the northeastern portion of the Preserve, where most existing on-site facilities are located, is less steep and is characterized by rolling hills.

Existing facilities located on-site include historic logging and access roads, parking areas, ponds, the former Alma College Site, and Bear Creek Stables. In the eastern portion of the Preserve, approximately 10 miles of historic logging and access roads are available by permit only for trail use by hikers and equestrians. A small parking area is located off of Bear Creek Road for trail users. West of Bear Creek Road, the Preserve is closed to the public and contains between 8 to 10 miles of historic logging and access roads. In the center of the Preserve on private property, a 67-acre non-profit retreat, conference, and event center (i.e., Presentation Center) is located at 19480 Bear Creek Road. The Midpeninsula Regional Open Space District (MROSD) holds a patrol and trail access easement through the private property.

The former Alma College site is a cluster of unoccupied buildings that have suffered damage from seismic activity, fire, and disrepair over the years. The “Alma College Complex,” which is a group of specific structures on the former Alma College Site, is currently listed on Santa Clara County’s Heritage Resource Inventory. Located on a narrow ridge, the former Alma College site was broadened with fill and supported with engineered retaining walls that have suffered superficial damage from earth movement and other natural causes since their construction in the early 20th century. Photos of the former Alma College site are provided in Exhibits 4.1-1 and 4.1-2. Views of the former Alma College site are available from some of the trails within the Preserve but public views from residences just west of Bear Creek Road are obstructed by intervening topography and dense forest canopy. Views from Bear Creek Road are also largely obstructed by intervening topography and vegetation; however, there are a few fleeting views of Alma College from a short segment of this roadway.



Source: Ascent Environmental 2015

Exhibit 4.1-1a

Former Alma College Site, Upper Lake



Source: Ascent Environmental 2015

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Exhibit 4.1-1b

Former Alma College Site, Boulders





Source: Ascent Environmental 2015

Exhibit 4.1-2a

Former Alma College Site: 1950 Library



Source: Ascent Environmental 2015

X15010027-01-022

Exhibit 4.1-2b

Former Alma College Site: 1934 Library



The Bear Creek Stables are located off of Bear Creek Road and approximately 0.75-mile west of Highway 17. Photos of Bear Creek Stables are provided in Exhibits 4.1-3 and 4.1-4. The stables contain unpaved roads, a gravel parking area, several pastures, two arenas, and paddocks for a maximum of 72 horses. Structures at the stables include a caretaker residence, cottage, stables barn (used for storage), hay barn/shop, and several trailers used as office space and storage. For motorists on the northernmost segment of Bear Creek Road, views of existing development at Bear Creek Stables are unavailable because of interceding topography and dense forest canopy. For residences located west of Bear Creek Road and at higher elevations, distant views of facilities at Bear Creek Stables are available. From these vantage points, the developed northern portion of Bear Creek Stables is largely blocked by topography.

Highway 17 runs adjacent to the northeast boundary of the Preserve, from which Bear Creek Road provides access. For Highway 17 motorists passing the site, unobstructed views are available of dense vegetation and some of the historical logging and access roads on the Preserve. Views of Bear Creek Stables and the former Alma College site from Highway 17 are obstructed by intervening topography and the Preserve's dense forest canopy.

State Route (SR) 35 is located adjacent to and within the west/southwest portion of the Preserve, from which Bear Creek Road provides access to the Preserve. For passing SR 35 motorists, unobstructed views of the Preserve's evergreen and deciduous forest, former agricultural land, and some of the historical access and logging roads are available.

Private property abuts the entire Preserve except for the southeast corner, which is bordered by Moody Gulch County Park. Observers from residences located adjacent to the Preserve have open views of the site's high-quality natural setting that is characterized by well-preserved redwood, Douglas fir, oak, and madrone forests.

4.1.2 Regulatory Background

FEDERAL

There are no federal programs or policies addressing visual resources that pertain to the project.

STATE

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation (Caltrans). The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view (Caltrans 2013).

The Program includes a list of eligible highways and officially designated scenic highways, and includes a process for the designation of official State or County Scenic Highways. Highways designated as Eligible (E) or Officially Designated (OD). SR 35 is officially designated as a State Scenic Highway and runs adjacent and through the southwestern portion of the Preserve. Highway 17 is an Eligible Scenic State Scenic Highway that runs adjacent to a portion of the Preserve's eastern boundary.



Source: Ascent Environmental 2015

Exhibit 4.1-3a

Bear Creek Stables: Caretaker Residence



Source: Ascent Environmental 2015

X15010027 01 023

Exhibit 4.1-3b

Bear Creek Stables: Barn





Source: Ascent Environmental 2015

Exhibit 4.1-4a

Bear Creek Stables Site



Source: Ascent Environmental 2015

X15010027 01 024

Exhibit 4.1-4b

Bear Creek Stables Site



LOCAL

Santa Clara County General Plan

County Scenic Highways

The Parks and Recreation Element of the Santa Clara County General Plan (Santa Clara County 1994, p. G-25) includes goals and policies for establishing scenic highways and roadways within the County and protecting view corridors along those scenic highways. Roads and highways identified as scenic include those established as officially designated and eligible for designation by the California Scenic Highway Program, as well as other roads and highways not currently considered eligible for the State Highway Program.

As discussed above, SR 35 is officially designated as a State Scenic Highway and Highway 17 is identified by Caltrans as an Eligible Scenic Highway.

Local Roads

The Santa Clara County General Plan and Zoning Ordinance identify several local scenic roadways, including Bear Creek Road (Santa Clara County, January 2013, Section 3.30.050), which bisects the Preserve and provides primary access to the Preserve from SR 35 and Highway 17.

The Santa Clara General Plan includes policies (Santa Clara County 1994, p. G-25) providing guidelines for development along scenic highways. The policies that may apply to the proposed project are listed below:

- ▲ **Policy C-PR 37:** The natural scenery along many of Santa Clara County's highways should be protected from land uses and other activities which would diminish its aesthetic beauty.
- ▲ **Policy C-PR 38:** Land use should be controlled along scenic roads so as to relate to the location and functions of these roads and should be subject to design review and conditions to assure the scenic quality of the corridor.
- ▲ **Policy C-PR 41:** Signs should be strictly regulated, with off-site signs and billboards prohibited along scenic routes.
- ▲ **Policy C-PR 43:** New structures should be located where they will not have a negative impact on the scenic quality of the area, and in rural areas they should generally be set back at least 100 feet from scenic roads and highways to minimize their visual impact.

County Scenic Resources

The Resource Conservation Element of the Santa Clara County General Plan (Santa Clara County 1994, p. H-40) includes three general strategies for preserving and enhancing the scenic values of both natural and built environments:

- ▲ Strategy #1: Manage Growth and Plan for Open Space
- ▲ Strategy #2: Minimize Development Impacts on Significant Scenic Resources
- ▲ Strategy #3: Maintain and Enhance the Values of Scenic Urban Settings

The Resource Conservation Element also includes goals and policies for preserving and enhancing scenic resources within the County. The following General Plan policies may apply to the proposed project:

- ▲ **Policy C-RC 57:** The scenic and aesthetic qualities of both the natural and built environments should be preserved and enhanced for their importance to the overall quality of life for Santa Clara County.
- ▲ **Policy C-RC 58:** The general approach to scenic resource preservation on a countywide basis should include the following strategies:

- a. conserving scenic natural resources through long range, inter-jurisdictional growth management and open space planning;
 - b. minimize development impacts on highly significant scenic resources; and
 - c. maintaining and enhancing scenic urban settings, such as parks and open space, civic places, and major public commons areas.
- ▲ **Policy C-RC 60:** Hillsides, ridgelines, scenic transportation corridors, major county entryways, and other areas designated as being of special scenic significance should receive additional consideration and protections due to their prominence, visibility, or symbolic value.

MROSD Resource Management Policies

MROSD resource management includes management of natural, cultural, and agricultural resources. Additionally, MROSD recognizes the protection of scenic values as one of the primary benefits of open space. Goal SA (Scenic and Aesthetic Resources) provided in the MROSD Resource Management Policy Document is to “preserve lands with natural appearance, diversity, and minimal evidence of human impacts.”

This goal is supported by the following policies:

- ▲ **Policy SA-1** Minimize evidence of human impacts within preserves.
 - Clarify and document appropriate standards for designing and locating trails, parking areas, and buildings.
 - Locate trails to minimize their visibility from a distance.
 - Where feasible, locate telecommunication towers, power lines, water towers, firebreaks, and other infrastructure along margins of roads, next to existing structures or where vegetation and terrain help ease undesirable visual and environmental impacts. Install utility lines underground, if practical.
 - Cluster new facilities near existing development, where possible.
 - Design facilities such as structures, bridges, fencing, benches, and barriers to harmonize with natural landscape features, colors, and materials.
 - Cluster, reduce, and place signs to lessen their visual impact.
 - Rehabilitate areas degraded by human use by restricting access or type(s) of use, rerouting trails and roads, removing unsightly human-made features and non-native plants, restoring natural contours, and revegetating with native plants.
- ▲ **Policy SA-2** Maintain significant landscapes or features that were formerly maintained by natural processes.
 - Control encroaching vegetation where it adversely affects significant scenic, historic or habitat resources (See Vegetation Management, Cultural Resources, and Invasive Species Management policies).
 - Control vegetation to create or maintain important scenic viewpoints and vistas (See Vegetation Management and Invasive Species Management policies).
 - Require MROSD tenants to maintain landscapes and improvements to acceptable visual standards that do not detract from a visitor’s experience or adversely impact wildlife.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and objectives of the Preserve Plan related to scenic resources would be implemented if the Preserve Plan is approved:

Goal PU2: Provide low-impact, high-value site-sensitive interpretation and education activities

Obj PU-2.1 Ensure any new visitor access features are sited and designed to protect landscape visual character

Goal NR1: Increase the acreage of protected habitat and connectivity to wildlife corridors

Obj NR-1.1 Continue to purchase properties and conservation easements to expand and protect the Preserve's natural resources, aesthetic values, and connectivity

4.1.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Evaluation of potential aesthetic and visual resource impacts are based on review of site photos and documents pertaining to the project site, including review of aerial photographs and field observations and photographs taken on an April 2015 site visit. Environmental Protection Measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on aesthetics and visual resources if it would:

- ▲ have a substantial adverse effect on a scenic vista;
- ▲ substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▲ substantially degrade the existing visual character or quality of the site and its surroundings;
- ▲ create a new source of substantial light or glare which would adversely affect day or nighttime views in the area; or
- ▲ conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to aesthetics and visual resources.

IMPACT ANALYSIS

Impact 4.1-1: Effects to a scenic vista or substantial degradation of the site's existing visual character or quality.

The project site is part of the overall scenic vista associated with the Santa Cruz Mountains portion of the Pacific Coast Range. This scenic vista, including the project site, is visible from Highway 17, SR 35, and surrounding rural residences. The visual character of the project site is primarily a natural setting dominated by views of dense evergreen and deciduous forests. Proposed improvements at Bear Creek Stables would not result in a substantial adverse change to the scenic vista or degrade the visual character or quality of the site. Instead, it would provide a more unified appearance to the existing developed area of the Stables property. At the former Alma College site, the visual character of the project site would change with proposed demolition of several existing dilapidated and hazardous structures. Although the change would be noticeable to those familiar to the site, because the former Alma College site access is currently restricted, any changes to the visual character would be mostly unnoticed. In addition, the change to the visual character would not be considered an adverse visual change, but would rather benefit from the overall rehabilitation and reuse of the former Alma College site, which would allow the public to gain access and appreciate the visual qualities of the site and structures proposed for rehabilitation. Other project components, such as trails, restrooms, and parking areas, would be designed consistent with County and MROSD policies related to visual quality. Overall, changes in the views of the Preserve's recreational facilities would be barely perceptible and would not obstruct the panoramic views of the site and surrounding areas. Therefore, these activities would not substantially degrade the visual quality and character of the sites or have a substantial adverse effect on a scenic vista. This would be considered **less-than-significant**.

Bear Creek Stables Alternatives

As discussed above, views of existing development at the Bear Creek Stables site is largely unavailable to Bear Creek Road motorists because of interceding topography and dense forest canopy. For residences located west of Bear Creek Road at higher elevations, distant views of development at Bear Creek Stables are available. From these higher elevation vantage points, views of the developed northern portion of Bear Creek Stables are blocked by an interceding hill. Visually, Bear Creek Stables Alternatives A, B, C, and A2 would be similar because these alternatives involve removal of most of the existing facilities and replacement with new stables and associated equestrian facilities. Under these alternatives, the pasture area would be fully restored to natural landscape, and the paddock area would be rebuilt with materials to create a uniform appearance. The primary differences are that the most developed scenario as described in Alternative B would include a livery stable, an optional composting station, a larger public riding arena, a secondary arena (potentially covered), and the caretaker residence would be located closer to the stables entrance. These differences would be difficult to distinguish if viewed from any off-site vantage point where the stables are visible. Therefore, because these alternatives would be visually similar, for the purposes of this analysis, Bear Creek Stables Alternatives are not evaluated separately, but are discussed together.

Scenic Vistas

For Bear Creek Road motorists, new views of a parking area would likely be partially visible through the dense forest canopy, and some distant and limited views of the proposed new caretaker residence may be available. Other project features would remain out of view from Bear Creek Road, because of intervening topography and dense vegetation. For residences located north of Bear Creek Road and at higher elevations, the new parking areas and structures would be visible as part of the distant views of the Bear Creek Stables property. However, existing older structures associated with the stables are already visible from these locations, and the proposed landscaping and structure removal/improvements at the site are anticipated to make development at the site appear more organized and visually appealing, especially because the design of the new structures would be intended to be consistent with the style of the old barn and to blend in with the natural surroundings. For motorists on Highway 17 and residences near the highway, implementation of any of the Bear Creek Stables alternatives or a related iteration would result in the replacement of existing old structures that are distantly visible and replacing them with new structures that are more organized and

visually appealing as described above. Overall, improvements at the Stables would result in a minor change to the overall scenic vista associated with the Bear Creek Redwoods Preserve.

Visual Character of the Site

The visual character of the stables site is defined by the existing old structures, many of which are in disrepair, as well as unkempt landscaping and eroding soils. Perhaps the most defining structure on the site is the old stables building, which was built in 1916 and adds an historic feel to the site. The fate of the old stables building depends on which Bear Creek Stables alternative is approved. Alternatives A, C, and A2 would include retaining the building, through stabilization or restoration, while Alternative B would demolish and replace the structure with a new, one to two story, multi-purpose building. The new buildings would be designed to be consistent with the appearance of the old stables building, to blend in with the natural surroundings, and to be consistent with County General Plan policies and design requirements. Pasture and hillside restoration, new landscaping, and BMPs to reduce soil erosion would also improve the existing visual character of the project site. The proposed landscaping and new structures would appear much more organized and functional than the current elements appear. Overall, implementation of the proposed Preserve Plan would benefit the visual character of the site.

Alma College Site

As discussed above, the former Alma College site is mostly obstructed from any off-site views because of intervening topography and dense vegetation. The site is generally only accessed by MROSD staff and a small number of annual visitors who acquire a permit. The Alma College site is therefore not part of an existing scenic vista and this discussion will focus primarily on the visual character of the site.

Visual Character of the Site

The visual character of the former Alma College site is defined by a complex of structures, many of them historic-era and in various states of disrepair. As described in Chapter 3, "Project Description," activities proposed at the Alma College site would include demolition of the most dilapidated buildings that cannot feasibly be rehabilitated; rehabilitation of a 1909 chapel, 1934 library roof structure, and gardens; and construction of a restroom, parking areas, signage, benches, and trails. These changes will alter the existing visual character of the former Alma College site in a positive way. The changes will result in a more visually cohesive site, with structures in a more visually appealing condition, and gardens that make sense with the existing paths and terraces and provide more of a historical context to the site. The new recreational features and structures would be tastefully designed to flow with the existing structures and landscape. Design of the parking lots and other site improvements would require implementation of Environmental Protection Measure AES-3 in Appendix C, which would result in screening of parking areas to visually buffer views from sensitive viewpoints. Overall, implementation of the Preserve Plan would provide a more visually appealing character to the former Alma College site and would allow the public the opportunity to view the site.

Recreational Facilities

Approximately 20 miles of new trails and associated signage are proposed throughout the Preserve, many of which would follow the footprint of existing trails, as well as historic logging and access roads. The addition of new trails located outside of existing trail and road footprints would result in minor changes to views throughout the site. Consistent with MROSD Policy SA-1, proposed trails and associated signage would be located in areas that minimize their visibility from a distance and in a way that blends in with the natural environment. In addition, implementation of Environmental Protection Measures AES-1 and AES-2 in Appendix C would ensure that proposed trail alignments blend in with the surrounding natural setting and that siting of trails shall avoid noticeable changes to open hillsides and ridgelines.

Users of MROSD recreational facilities would have access to new views of the Preserve because of the proposed expanded trails. While recreational activities would expand over time as MROSD implements phases of the Bear Creek Preserve Plan, this expansion is not expected to be substantial such that large changes in the scenic landscape would be observable. Overall, changes in the views of the Preserve's recreational facilities would be barely perceptible or subordinate in a panoramic view of the surrounding areas and would be designed consistent with the surrounding natural landscape. Therefore, these activities

would not substantially degrade the visual quality and character of the sites, or have a substantial adverse effect on a scenic vista.

Implementation of the Preserve Plan would not substantially adversely affect scenic views and would not result in changes that would substantially adversely affect the visual character of the site. The impact to the environment is considered **less than significant**. Overall, the proposed Preserve Plan would result in a benefit to the visual character of the Bear Creek Stables site and the former Alma College site.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.1-2: Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or local scenic road.

Activities proposed that may result in tree removal include the establishment of new recreation trails and construction of parking areas and driveway access. Specifically, construction of parking areas near the former Alma College site would result in removal of several medium- to small-sized trees, and construction of the driveway to the Lower Parking Lot would require removal of several trees (to maintain adequate line of site) near Bear Creek Road, a Santa Clara County local scenic roadway. Two of the trees to be removed would likely qualify as heritage trees, due to their species (coast live oak) and size. No tree removal is proposed within view of SR 35 and Highway 17, and rock outcroppings located on the site would not be removed or altered. Historic-era buildings located at the former Alma College site are proposed for demolition or rehabilitation; however, views of the former Alma College site are not available from Highway 17 or SR 35, and are only fleetingly available from Bear Creek Road. Some distant and limited views of proposed structures within the Bear Creek Stables property may become available to Highway 17 motorists and distant views of new recreational trails may become available to Bear Creek Road, Highway 17, and SR 35 motorists. Consistent with MROSD Policy SA-1, proposed trails and associated signage would be located in areas that minimize their visibility from a distance and in a way that blends in with the natural environment. In addition, implementation of Environmental Protection Measures AES-1 and AES-2 would ensure that proposed trail alignments blend in with the surrounding natural setting and that siting of trails would avoid noticeable changes to open hillsides and ridgelines. Overall, these activities would not have a substantial adverse effect on scenic resources within the vicinity of a state scenic highway or local roadway. This would be a **less-than-significant** impact.

SR 35 is officially designated as a State Scenic Highway and runs adjacent and through the southwestern portion of the Preserve. Highway 17 is an Eligible Scenic State Scenic Highway that runs adjacent to a portion of the Preserve's eastern boundary. The Santa Clara County General Plan and Zoning Ordinance identify several local scenic roadways, including Bear Creek Road (Santa Clara County, January 2013, Section 3.30.050), which runs through the Preserve and provides primary access to the Preserve from SR 35 and Highway 17.

Activities proposed that may result in tree removal include establishment of new recreation trails and construction of parking areas and driveway access. Construction of the driveway to a new parking area near the former Alma College site would result in the removal of several small-to-medium sized trees. Construction of the access to the Lower Parking Lot would require removal of several large trees, including two oak trees that would likely qualify as heritage trees due to their size and species. The removal of these trees is necessary to maintain adequate line of site for vehicles entering and exiting the site. These large trees are located near Bear Creek Road, a Santa Clara County local scenic roadway. Removal of the trees would require compliance with the County's heritage tree ordinance. Aesthetically, the removal of the large trees might be noticeable to frequent Bear Creek Road motorists familiar with the local canopy. However, vegetation and other trees are located near the two large oak trees and removal of the large trees, while adverse, would not constitute a significant change in the overall viewshed. The proposed access is consistent with Santa Clara General Plan policies related to local scenic roadways, including Policy C-PR 37,

38, 41, and 43. No tree removal would occur within view of SR 35 and Highway 17 and rock outcroppings located on the site would not be disturbed under the proposed project. Tree removal is further addressed in Chapter 4.3, Biological Resources.

Historic buildings located at the former Alma College site are proposed for demolition or rehabilitation; however, views of the former Alma College site are not available from Highway 17 or SR 35, and are only very briefly available from a short segment of Bear Creek Road. Some distant and limited views of proposed structures within the Bear Creek Stables property may become available to Highway 17 motorists and distant views of new recreational trails may become available to Bear Creek Road, Highway 17, and SR 35 motorists. As discussed above, approximately 20 miles of new trails would be opened for recreational use, some of which would be constructed within the footprint of existing trails, access roads, and historic logging roads. Overall, changes in the views of MROSD recreational facilities would be barely perceptible from nearby scenic highways and roads. Consistent with MROSD Policy SA-1, proposed trails and associated signage would be located in areas that minimize their visibility from a distance and in a way that blends in with the natural environment. In addition, implementation of Environmental Protection Measures AES-1 and AES-2 in Appendix C would ensure that proposed trail alignments blend in with the surrounding natural setting and that siting of trails shall avoid noticeable changes to open hillsides and ridgelines.

Implementation of the Preserve Plan would not have a substantial adverse effect on scenic resources within the vicinity of a state scenic highway or local roadway. This would be a **less-than-significant** impact.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.1-3: Substantial new source of light or glare.

Limited nighttime lighting is currently used at the Bear Creek Stables arenas. This lighting would continue to be used with implementation of the Preserve Plan. New lighting associated with proposed structures on the Bear Creek Stables property would be limited to safety lighting. Outdoor lighting is not provided within MROSD preserve parking areas, and limited special events at the former Alma College site or Bear Creek stables would occur only during posted Preserve (daytime) hours. Environmental Protection Measure AES-4 requires that new lighting includes light shields and other devices to ensure that no new light or glare will impact sensitive receptors. This would be a **less-than-significant** impact.

Nighttime light and glare levels in the project vicinity are very low. The only light and glare sources in the project area are existing rural residences and the arena lighting at Bear Creek Stables, but these sources are minimal. Similar to other MROSD preserves, the Preserve Plan would not include parking area lighting within any of the proposed parking areas. Similar to existing lighting at Bear Creek Stables, new exterior lighting would be limited to safety lighting (porch lights, walkways) and minimal arena lighting. Implementation of Environmental Protection Measure AES-4 in Appendix C would require that new lighting proposed at Bear Creek Stables have light shields and other devices to ensure that no new light or glare will shine directly onto nearby residences or local motorists and so that the lighting will not substantially affect night sky visibility. As discussed in Chapter 3, "Project Description," limited special events at the former Alma College site or Bear Creek Stables would occur only during posted Preserve (daytime) hours. Therefore, no nighttime events would occur under the proposed project. Impacts associated with light and glare would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

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4.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential short-term and long-term air quality impacts caused by the proposed project. The method of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions is consistent with the recommendations of the Bay Area Air Quality Management District (BAAQMD), the California Air Resources Board (ARB), and the U.S. Environmental Protection Agency (EPA). In addition, mitigation measures are recommended as necessary to reduce significant air quality impacts.

4.2.1 Environmental Setting

The project site is located in Santa Clara County, which is within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB also includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara Counties, the western portion of Solano County, and the southern portion of Sonoma County. The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

CRITERIA AIR POLLUTANTS

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. Ozone, nitrogen dioxide, and particulate matter are the key criteria air pollutants in the SFBAAB. Emission source types health effects of these pollutants are summarized in Table 4.2-1. Monitoring data applicable to the project site is provided in Table 4.2-2.

Table 4.2-1 Sources and Health Effects of Key Criteria Air Pollutants			
Pollutant	Sources	Acute¹ Health Effects	Chronic² Health Effects
Ozone	secondary pollutant resulting from reaction of ROG and NO _x in presence of sunlight; ROG results from incomplete combustion and evaporation of chemical solvents and fuels; NO _x results from the combustion of fuels	increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	permeability of respiratory epithelia, possibility of permanent lung impairment
Nitrogen dioxide (NO ₂)	combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	chronic bronchitis, decreased lung function
Respirable particulate matter (PM ₁₀), Fine particulate matter (PM _{2.5})	fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO ₂ and ROG	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	alterations to the immune system, carcinogenesis

Notes: NO_x = oxides of nitrogen; ROG = reactive organic gases.

¹ Acute refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.

² Chronic refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Sources: EPA 2014

Table 4.2-2 Summary of Annual Air Quality Data (2012–2014)			
Ozone ¹	2012	2013	2014
Maximum concentration (1-hour/8-hour, ppm)	0.085/0.073	0.087/0.075	0.090/0.078
Number of days state standard exceeded (1-hour/8-hour)	0/1	0/1	0/3
Number of days national standard exceeded (1-hour/8-hour)	0/0	0/0	0/1
Respirable Particulate Matter (PM₁₀) ²	2012	2013	2014
Maximum Concentration (µg/m ³)	29.6	58.1	56.4
Number of days state standard exceeded (measured ³)	1	5	1
Number of days national standard exceeded (measured ³)	0	0	0
Fine Particulate Matter (PM_{2.5}) ²	2012	2013	2014
Maximum Concentration (µg/m ³)	38.4	57.7	60.4
Annual Average (µg/m ³)	*	12.4	8.4
Number of days national standard exceeded (measured ³)	2	4	2

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million; * = Insufficient data to determine the value, N/A = not available

¹ Data from the Los Gatos station (306 University Avenue)

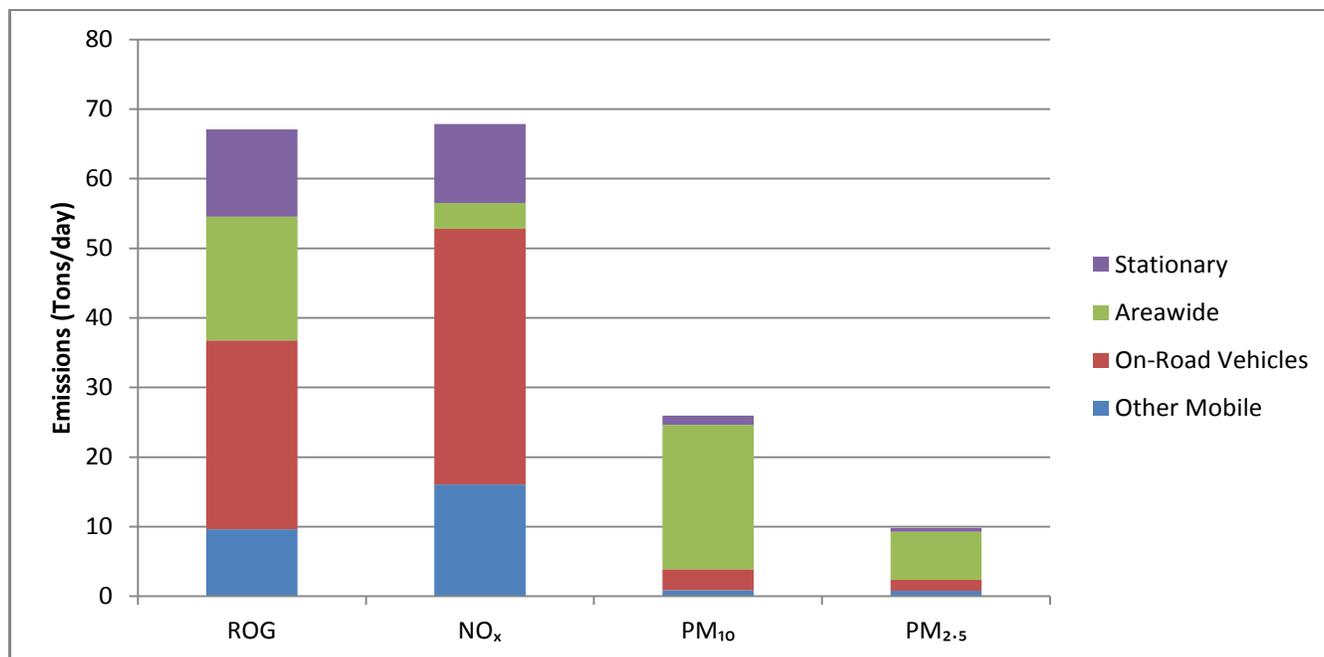
² Data from the San Jose-Jackson Street station

³ Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Sources: ARB 2015

Emissions Inventory

Exhibit 4.2-1 summarizes emissions of criteria air pollutants within Santa Clara County for various source categories. ARB provides estimates for the County’s 2012 inventory. According to this inventory, mobile sources are the largest contributor to the estimated annual average for air pollutant levels of ROG and NO_x accounting for approximately 55 percent and 78 percent respectively, of the total emissions. Areawide sources account for approximately 90 percent and 70 percent of the County’s PM₁₀ and PM_{2.5} emissions, respectively (ARB 2013a).



Source: ARB 2013a

Exhibit 4.2-1

Santa Clara County 2012 Emissions Inventory Estimate

In the project vicinity, emissions primarily result from fuel combustion in on-road vehicles, as well as from stationary sources, such as natural gas combustion at homes and businesses. The majority of these emissions would likely result from vehicle traffic along Highway 17. As described in Section 4.12, "Traffic" and Section 4.10, "Noise," Highway 17 is located along the western boundary of the Preserve and carries the most vehicle traffic in the project vicinity, with an estimated 67,000 vehicles passing by the Bear Creek Preserve daily. In comparison, less than 3,000 vehicles are estimated to travel along Bear Creek Road daily.

Monitoring Station Data and Attainment Area Designations

The BAAQMD and ARB operate a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants within the Bay Area. Existing and probable future levels of air quality in Santa Clara County can generally be inferred from ambient air quality measurements conducted by the BAAQMD at its nearby monitoring stations. Santa Clara County currently has five monitoring stations that measure criteria pollutants, including ozone, PM_{2.5}, PM₁₀, CO, and NO₂. The closest monitoring station to the project site is the Los Gatos station (306 University Avenue), but only ozone measurements are available from this site. Other pollutants are available from another monitoring site close to the project area located at the San Jose-Jackson Street station. Another monitoring station in Cupertino is located closer than the San Jose station, but does not have sufficient data for most of the years between 2012 and 2014. Table 4.2-2 shows a three-year summary of monitoring data for ozone, PM_{2.5}, and PM₁₀, the main pollutants of concern, from the two selected stations. The table also compares these measured concentrations with state and federal ambient air quality standards. In Santa Clara County, ozone and particulate matter are of the most problematic pollutants (County of Santa Clara 2015).

Both ARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." "Unclassified" is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called "nonattainment-transitional." The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. Attainment designations for the year 2012 through 2014 in Santa Clara County are shown in Table 4.2-3 for each criteria air pollutant.

Table 4.2-3 Ambient Air Quality Standards and Designations for Santa Clara County					
Pollutant	Averaging Time	California		National Standards ¹	
		Standards ^{2,3}	Attainment Status ⁴	Primary ³	Attainment Status ⁶
Ozone	1-hour	0.09 ppm (180 µg/m ³)	N	-	N (Other) ⁷
	8-hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)	N (Marginal)
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	A	35 ppm (40 mg/m ³)	U/A
	8-hour	9 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	
	8-hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	A	0.053 ppm (100 µg/m ³)	U/A
	1-hour	0.18 ppm (339 µg/m ³)		0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	-	A	0.030 ppm (80 µg/m ³)	U/A
	24-hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)	
	3-hour	-		0.5 ppm (1300 µg/m ³) ⁵	
	1-hour	0.25 ppm (655 µg/m ³)		0.075 ppm	
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	N	-	U/A
	24-hour	50 µg/m ³		150 µg/m ³	

Table 4.2-3 Ambient Air Quality Standards and Designations for Santa Clara County

Pollutant	Averaging Time	California		National Standards ¹	
		Standards ^{2,3}	Attainment Status ⁴	Primary ³	Attainment Status ⁶
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	N	12.0 µg/m ³	N (Moderate)
	24-hour	-		35 µg/m ³	
Lead ⁸	30-day Average	1.5 µg/m ³	A	-	-
	Calendar Quarter	-		1.5 µg/m ³	U/A
	Rolling 3-Month Avg	-		0.15 µg/m ³	U/A
Sulfates	24-hour	25 µg/m ³	A	No National Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	U		
Vinyl Chloride ⁸	24-hour	0.01 ppm (26 µg/m ³)	Not Available		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer—visibility of 10 mi or more	U		

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million

¹ National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

² California standards for ozone, CO (except in the Lake Tahoe Basin), SO₂ (1- and 24-hour), NO₂, PM, 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 (CAAQS) are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

³ Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m³)]. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. Secondary national standards are also available from EPA.

⁴ Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

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

Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area. Non-attainment designations for ozone are classified as marginal, serious, severe, or extreme depending on the magnitude of the highest 8-Hour ozone design value at a monitoring site in a non-attainment area.

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

⁵ Secondary Standard

⁶ Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

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

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

Maintenance (M): any area previously designated nonattainment pursuant to the CAAA of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAA, as amended.

⁷ On July 10, 1998 (63 FR 37258), EPA published the final rule redesignating the San Francisco Bay Area to nonattainment with the federal 1-hour ozone NAAQS. EPA did not assign the Bay Area a classification. Then on July 22, 1999 (64 FR 39416) EPA published a final rule assigning the area a nonattainment classification on moderate for purposes of funding appropriation under the Transportation Equity Act for the 21st Century, Congestion Mitigation and Air Quality improvement Program only.

⁸ ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: ARB 2013b, ARB 2013c, EPA 2015; data compiled by Ascent Environmental in 2015.

TOXIC AIR CONTAMINANTS

Concentrations of toxic air contaminants (TACs) are also used to indicate the quality of ambient air. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the latest edition of the California Almanac of Emissions and Air Quality that characterizes TACs (ARB 2010:1-34), the majority of the estimated health risks from TACs can be attributed to relatively few

compounds, the most important being particulate matter from diesel exhaust (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs that pose the greatest existing ambient risk in California, for which data are available, are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Sources of these TACs vary considerably and include (but are not limited to) consumer products, gasoline dispensing stations, auto repair and auto body coating shops, dry cleaning establishments, chrome plating and anodizing shops, welding operations, and other stationary sources.

Diesel PM poses the greatest health risk among the 10 TACs mentioned. Based on receptor modeling techniques, ARB estimated its health risk to be 480 excess cancer cases per million people in the SFBAAB in the year 2000, which when coupled with the average health risk within the SFBAAB of 179 cancer cases per million people yields a total health risk of 659 cancer cases per million people. Since 1990, emissions of diesel PM have decreased in the SFBAAB even though population and vehicle miles travelled (VMT) are growing, due to adoption of more stringent emission standards. However, the Metropolitan Transportation Commission has indicated that per-capita daily VMT in Santa Clara County has remained relatively flat since 2003 (MTC 2015) when VMT was 25.3 miles per capita each day and was 25.0 miles per capita in 2013. Overall, levels of most TACs, except para-dichlorobenzene, have decreased since 1990 (ARB 2010:4-23, 5-61).

Existing sources of TACs in the project vicinity are primarily diesel PM from nearby Highway 17. Other sources of TACs include minor operation of diesel-powered vehicles and equipment at Bear Creek Stables, such as diesel-powered vehicles towing horse trailers, tractors, chippers, excavators, and delivery trucks. Most of the existing diesel equipment have been upgraded to clean-idle technology. Equestrian activities, such as use of arenas and trails, as well as regular maintenance of trails and road may generate airborne dust, which can contain earth metals and silica.

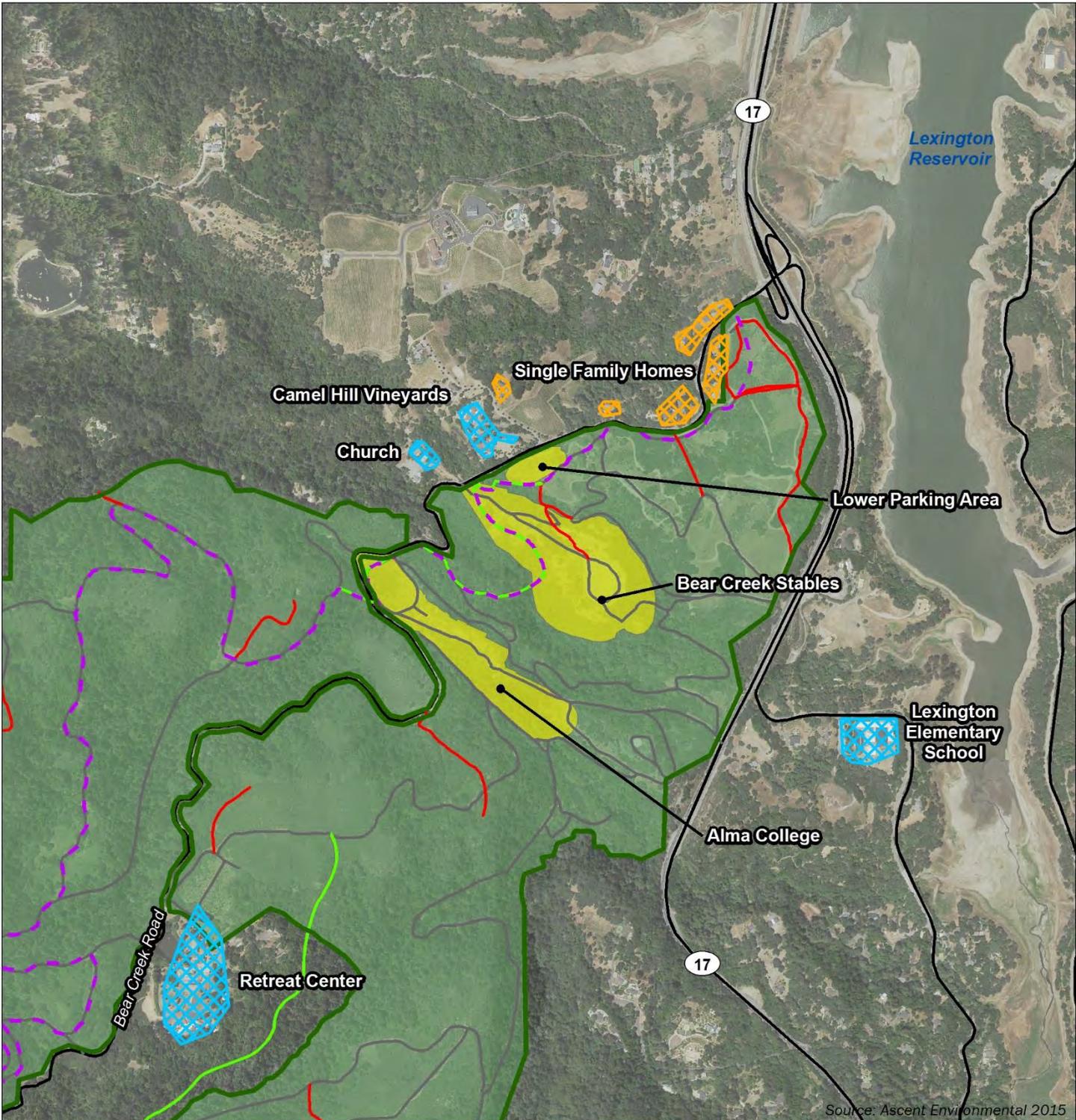
ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Odor sources in the project area consist of odors from equestrian facilities, such as manure piles, located at Bear Creek Stables and equestrian trails throughout the Preserve.

SENSITIVE RECEPTORS

Sensitive land uses are generally considered to include those uses where exposure to pollutants could result in health-related risks to individuals. Residential dwellings and places where people recreate or congregate for extended periods of time such as parks or schools are of primary concern because of the potential for increased and prolonged exposure of individuals to pollutants.

Sensitive receptors closest to potential construction activities include several single family residences located along Bear Creek Road north of the Lower Parking Area and a church, Our Lady of Perpetual Help Church, located 390 feet north of the proposed Bear Creek Road crossing. An elementary school, Lexington Elementary, is located approximately 2,200 feet southeast of Bear Creek Stables. A retreat center, Presentation Center, is located 0.61 miles south of the former Alma College Site and may have potential sensitive receptors using outdoor facilities. These sensitive receptors are identified in Exhibit 4.2-2. Preserve users present during construction activities may also be impacted by exposure to pollutants.

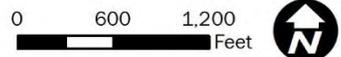


Source: Ascent Environmental 2015

Legend

- Bear Creek Redwoods Preserve
- Major Roads
- Multi-Use Trail
- New Trail
- Eliminate Trail or Close to Public Access
- Existing Roads/Trails
- Areas of Disturbance
- Sensitive Receptors**
- Residential Land Use
- Other Land Uses

Note: All trail alignments are approximate. Final trail alignments will be adjusted based on specific field conditions and to minimize effects to trees, native vegetation, and other natural features.



Aerial: NAIP 2014
G15010027 01 017

Exhibit 4.2-2

Sensitive Receptors



4.2.2 Regulatory Setting

The project site is located in the SFBAAB. Air quality at the project site is regulated by EPA, ARB, and the BAAQMD. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, State and local regulations may be more stringent.

FEDERAL

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress in 1990. The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 4.2-3, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO₂, SO₂, respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect public welfare.

EPA and ARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for TACs to limit emissions. These, in conjunction with additional rules set forth by BAAQMD, described below, establish the regulatory framework for TACs.

STATE

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). California law authorizes ARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare (California Ambient Air Quality Standards [CAAQS] [Table 4.2-3]). ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, including diesel PM, and adopted EPA's list of HAPs as TACs.

LOCAL

Bay Area Air Quality Management District

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

As mentioned above, BAAQMD adopts rules and regulations. All projects are subject to BAAQMD's rules and regulations in effect at the time of construction. Specific rules applicable to the construction activities under the alternatives being considered may include, but are not limited to:

- ▲ **Regulation 2, Rule 1, General Permit Requirements.** Includes criteria for issuance or denial of permits, exemptions, appeals against decisions of the Air Pollution Control Officer (APCO) and BAAQMD actions on applications.
- ▲ **Regulation 2, Rule 2, New Source Review.** Applies to new or modified sources and contains requirements for Best Available Control Technology and emission offsets. Rule 2 implements federal New Source Review and Prevention of Significant Deterioration requirements.
- ▲ **Regulation 5, Open Burning.** Generally prohibits open burning, but also allows for exemptions such as agricultural burning, disposal of hazardous materials, fire training, and range, forest, and wildlife management.
- ▲ **Regulation 6, Rule 1, General Requirements.** Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions and opacity.
- ▲ **Regulation 7, Odorous Substances.** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation, but meeting such limitations shall not exempt such person from any other requirements of BAAQMD, state, or national law. The limitations of this regulation shall not be applicable until BAAQMD receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this regulation become effective, as a result of citizen complaints described above, the limits shall remain effective until such time as no citizen complaints have been received by BAAQMD for one year. The limits of this Regulation shall become applicable again if BAAQMD receives odor complaints from five or more complainants within a 90-day period. BAAQMD staff investigate and track all odor complaints it receives and make attempts to visit the site and identify the source of the objectionable odor and assist the owner or facility in finding a way to reduce the odor.
- ▲ **Regulation 8, Rule 3, Architectural Coatings.** Limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within BAAQMD.
- ▲ **Regulation 11, Rule 2, Asbestos Demolition, Renovation, and Manufacturing.** Limits asbestos emissions during demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities.

Air Quality Plans

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources. For state air quality planning purposes, the Bay Area is classified as a serious non-attainment area for the one-hour ozone standard. The "serious" classification triggers various plan submittal requirements and transportation performance standards.

Santa Clara County General Plan

Santa Clara County recently adopted a revision to the Health Element of the County's 1994 General Plan in August 2015. The County's General Plan Health Element has various policies in place related to the improvement of air quality within the county. Policies relevant to the proposed project are shown below:

- ▲ **HE-C.20 Greenhouse gases and air quality.** The County shall promote plans and developments that reduce greenhouse gas emissions and result in decreased air pollution, especially for communities with disproportionate exposure to air pollution, and for vulnerable populations such as children, seniors, and those with respiratory illnesses.
- ▲ **HE-G.1 Air quality environmental review.** The County shall continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and greenhouse gas emissions.
- ▲ **HE-G.2 Coordination with regional agencies.** The County shall coordinate with the Air District to promote and implement stationary and area source emission measures.
- ▲ **HE-G.4 Off-road sources.** The County shall encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.
- ▲ **HE-G.6 Regional/local plans.** The County shall encourage and support regional and local land use planning that reduces automobile use and promotes active transportation.
- ▲ **HE-G.7 Sensitive receptor uses.** The County shall promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.

Proposed Bear Creek Redwoods Preserve Plan

The proposed Bear Creek Redwoods Preserve Plan does not contain any additional policies with respect to air quality.

4.2.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Construction

Short-term construction-related emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 computer program (SCAQMD 2013). CalEEMod was used to calculate construction of trail rehabilitation and construction, parking lots, retaining walls, and building construction and renovation. As recommended by the BAAQMD for roadway projects, the Road Construction Emissions Model Version 7.1.5.1 was used to calculate emission from the construction of vehicle and pedestrian bridges (BAAQMD 2012). Modeling was based on project-specific information (e.g., general schedule, building types, amounts of demolition, total cut and fill volumes, area to be paved), where available, and model default parameters that are based on the project's location, land use type, and type of construction.

Calculations assumed that activities associated with the larger construction plan elements, including building and bridge construction, structural demolition, mass grading, and paving would not overlap with each other within or between the three phases (as stated in Section 3, "Project Description").

Adjustments to default values were made based on the type of construction activity required. Construction activity was estimated for Phases 1, 2, and 3. Detailed model construction assumptions, inputs, schedule, and emissions summaries are provided in Appendix D.

Operations

All operational emissions associated with the operation of the project were estimated using CalEEMod. It was assumed that the planned land uses would be operational immediately after construction is completed for each phase (e.g., land uses constructed under Phase 1 would be operational once construction of Phase 1 is complete). Mobile-source emissions were estimated based on worst-case trip rates estimated in the project's traffic study and presented in Section 4.12, "Traffic and Transportation," and assuming an average trip length of 12.4 miles, the default trip length in CalEEMod. Electricity consumption were calculated using GHG emission factors forecasted for the Pacific Gas and Electric Company for 2020 based on the utility's progress toward achieving the State's Renewable Portfolio Standard (RPS) goal of attaining 33 percent of electricity from renewable sources. This emissions factor was applied to all years of operation due to the uncertainty pertaining to the application of RPS goals in years beyond 2020. The project's level of electricity and natural gas usage were based on default consumption rates provided by CalEEMod for similar types of land uses. Specific model assumptions and inputs for all of these calculations can be found in Appendix D.

Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

BAAQMD has not officially recommended the use of its thresholds in CEQA analyses and CEQA ultimately allows lead agencies the discretion to determine whether a particular environmental impact would be significant, as evidenced by scientific or other factual data. BAAQMD also states that lead agencies need to determine appropriate air quality thresholds to use for each project they review based on substantial evidence that they include in the administrative record of the CEQA document. One resource BAAQMD provides as a reference for determining appropriate thresholds is the *CEQA Thresholds Options and Justification Report (Justification Report)* developed by its staff in 2009 (BAAQMD 2009). The *Justification Report* outlines substantial evidence supporting a variety of thresholds of significance. Since that time, the thresholds substantiated by the *Justification Report* have been used by lead agencies in the SFBAAB.

For the purposes of this project, the following thresholds of significance, as included in the aforementioned *Justification Report* unless otherwise noted, are used to determine if an air quality impact would be significant. The project would result in a significant air quality impact if it would:

- ▲ cause daily construction-generated criteria air pollutant or precursor emissions to exceed an average of 54 pounds per day (lbs/day) for ROG, 54 lbs/day for NO_x, 82 lbs/day of PM₁₀ exhaust, or 54 lbs/day of PM_{2.5} exhaust, or substantially contribute to emissions concentrations (e.g., PM₁₀) that exceed the NAAQS or CAAQS;
- ▲ cause daily long-term operational regional criteria air pollutant or precursor emissions to exceed an average of 54 lbs/day for ROG and 54 lbs/day for NO_x, 82 lbs/day of PM₁₀ exhaust, or 54 lbs/day of PM_{2.5} exhaust, or substantially contribute to emissions concentrations (e.g., PM₁₀) that exceed the NAAQS or CAAQS;
- ▲ not implement BAAQMD's Best Management Practices for dust emissions (e.g., PM₁₀ and PM_{2.5}) and other construction-related emissions;
- ▲ result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the California 1-hour ambient air-quality standard of 20 ppm or the 8-hour standard of 9 ppm;
- ▲ generate TAC emissions that would expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million and/or a hazard index of 1;

- ▲ locate sensitive receptors where they would be exposed to a combined level of cancer risk from nearby sources of TACs that exceeds 100 in one million and/or a combined hazard index of 10. This threshold is consistent with the cumulative health risk threshold included in BAAQMDs *Justification Report* (BAAQMD 2009:5) as well as the prioritization scores BAAQMD uses to implement the Hot Spots Information and Assessment Act (ARB 2008); or
- ▲ create objectionable odors affecting a substantial number of people (i.e., five confirmed complaints per year averaged over three years).

ISSUES NOT DISCUSSED FURTHER

All potential air quality issues identified in the significance criteria are evaluated below.

IMPACT ANALYSIS

Impact 4.2-1: Short-term construction-generated emissions of criteria air pollutants and precursors.

Short-term construction-generated emissions would not exceed BAAQMD's significance threshold for criteria air pollutants and precursors (i.e., ROG, NO_x, exhaust PM₁₀ and PM_{2.5}). The project also includes dust control and other construction-related measures required in BAAQMD's Best Management Practices. Therefore, fugitive dust emissions would not contribute to concentrations of PM₁₀ and PM_{2.5} that exceed the NAAQS or CAAQS and other construction-related emissions would not exceed recommended thresholds. This would be a **less-than-significant** impact.

Construction-related activities would result in project-generated emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from site preparation (e.g., grading, and clearing), use of off-road equipment, material delivery, and worker commute, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Particulate matter emissions also result from combustion of fuels and from tire and brake wear. Emissions of ozone precursors, ROG and NO_x, are associated primarily with exhaust from construction equipment, haul truck trips, and worker trips. ROG emissions are also generated during asphalt paving and the application of architectural coatings.

Average daily construction emissions are summarized in Table 4.2-4 for ROG, NO_x, PM₁₀, and PM_{2.5} for each construction year and phase. These emissions are calculated by dividing the total annual emissions by the number of construction days in a given construction year. Average daily emissions by year may vary depending on the level of construction activity in a given year. The average daily emissions presented in this analysis are based on model default construction activity and approximate scheduling for each phase described in Section 3, "Project Description." Overall daily average emissions are also calculated over the total number of construction days over the entire construction period. Refer to Appendix D for a detailed summary of the modeling assumptions, applied construction schedule, inputs, and outputs.

As shown in Table 4.2-4, construction of the project would result in maximum average daily emissions of 3.0 lbs/day of ROG, 26.4 lbs/day of NO_x, 1.5 lbs/day of PM₁₀ exhaust, and 1.4 lbs/day of PM_{2.5} exhaust, which would be less than the allowable emissions limits established by the selected BAAQMD thresholds. The maximum average daily emissions level represents the highest average daily emissions over the entire project schedule. These emissions reflect on-site construction equipment usage, hauling emissions, and worker commute trips. Table 4-2-4 also shows the overall average daily emissions, which are lower than the maximum average daily emissions described above; however, to remain conservative, this analysis focuses on the maximum average daily emissions levels.

Table 4.2-4 Average Daily Construction-Generated Emissions of Criteria Air Pollutants and Precursors by Construction Year

Phase	Year ⁴	Construction Days per year	ROG (lbs/day)	NO _x (lbs/day)	PM ₁₀ Exhaust (lbs/day)	PM _{2.5} Exhaust (lbs/day)
1	1	208 ²	0.8	6.2	0.3	0.3
	2	260	3.0	26.4	1.5	1.4
	3	261	0.7	5.6	0.3	0.3
2	4	261	1.7	17.3	0.9	0.8
	5	82	1.4	11.6	0.6	0.6
	6	198 ³	1.0	8.4	0.4	0.4
	7	210	3.0	15.6	0.8	0.7
	8	260	1.8	14.9	0.7	0.7
	9	130	2.7	12.0	0.5	0.5
3	10	93 ⁴	2.0	16.1	0.9	0.8
	11	41	0.1	0.5	0.0	0.0
	12	32	1.2	7.8	0.4	0.3
	13 ⁵	0	0	0	0	0
	14 ⁵	0	0	0	0	0
	15 ⁵	0	0	0	0	0
Total Construction Days ⁶		2,036				
Total Emissions (tons over entire construction period)			1.8	13.6	0.7	0.7
Maximum Average Daily Emissions ⁷ (lb/day)			3.0	26.4	1.5	1.4
Project Average Daily Emissions ⁸ (lb/day)			1.7	13.4	0.7	0.7
Threshold of Significance (lb/day)			54	54	54	82
Exceeds Threshold?			No	No	No	No

Notes: Sums may not add due to rounding. ROG = reactive organic gases, NO_x = oxides of nitrogen, PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less, PM_{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less, lbs/day = pounds per day

¹ Modeling assumes construction would begin in 2016, but construction would likely begin after 2016. Because criteria pollutants generally decrease over time with improved pollution control technology, these estimates are generally conservative. See the "3.0 Construction Detail" section of the CalEEMod outputs in Appendix D for specific construction schedule assumptions.

² Includes 80 construction days for the construction of a vehicle bridge and retaining wall.

³ Includes 180 construction days for the construction of a vehicle bridge, retaining wall, and two pedestrian bridges.

⁴ Only includes construction days for the construction of two vehicle bridges, a 1-acre parking lot, and two pedestrian bridges.

⁵ No activity is shown to occur in years 13 through 15 because Phase 3 would only include construction of surface parking, trail construction, vehicle bridges, and pedestrian bridges. Based on model defaults these activities can be completed in less than 6 years. Thus, a compressed construction schedule would result in a conservative estimate of emissions.

⁶ Approximate

⁷ Maximum of average daily emissions calculated for each construction year.

⁸ Average daily emissions calculated by dividing the total emissions by the total number of construction days over the entire construction period.

See Appendix D for detail on model inputs, assumptions, and project specific modeling parameters.

Source: Modeling conducted by Ascent Environmental in 2015 using CalEEMod v. 2013.2.2

The project's fugitive PM₁₀ and PM_{2.5} dust emissions could contribute to pollutant concentrations that exceed the NAAQS or CAAQS if dust control measures are not implemented. Environmental Protection Measure AQ-1, included as Appendix C, specifically requires that construction activities would follow BAAQMD construction measures to control dust. This would meet BAAQMD's threshold requirements and would comply with County's policy (HE-G.1) requiring projects to be consistent with BAAQMD's requirements for air emissions. For these reasons this would be a **less-than-significant** impact.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.2-2: Long-term operational emissions of criteria air pollutants and precursors.

Operation of the proposed plan under full buildout would not result in emissions of ROG, NO_x, PM₁₀, or PM_{2.5} that exceed applicable mass emission thresholds. Thus, long-term operational emissions of criteria air pollutants and precursors would not conflict with the air quality planning efforts or contribute substantially to the nonattainment status of Santa Clara County with respect to the NAAQS or CAAQS for ozone, PM₁₀, or PM_{2.5}. This would be a **less-than-significant** impact.

Long-term operational emissions from the project would result from vehicle trips to and from the project site, natural gas combustion associated with space and water heating, operation of landscaping and maintenance equipment, and periodic routine application of architectural coatings.

New vehicle trips would be associated with regular visitation as the Preserve is opened to the general public, as well as with occasional special events at Bear Creek Stables and former Alma College. Special events could generate up to 500 new vehicle trips if events at former Alma College and Bear Creek Stables occurred simultaneously (which would be possible, but rare). Aside from special events, the Preserve is also expected to generate an average of 267 and 667 daily vehicle trips on weekdays and weekends, respectively, for recreational visitors. Combining event and recreational trips would result in a maximum of 1,167 daily vehicle trips. Assuming recreational visitors drive 12.4 miles per trip (based on CalEEMod defaults for local commute trips) and event visitors drive 25 miles per trip, at full build-out of the Preserve Plan, the Preserve would generate 1,744,467 VMT per year.

For other operational emissions sources, maintenance of new trails would involve the operation of emissions-generating landscaping equipment. Also, operation of new building space could increase natural gas combustion.

Table 4.2-5 summarizes and estimates the changes in emissions sources of the project compared to existing conditions, respectively. These estimates reflect the average daily emissions at the project's full build-out. Passenger vehicle emissions factors for 2030 were used as conservative assumption because the project build-out would not be completed until at least 2035 and technology would likely improve with time, reducing future emissions generated per VMT.

Table 4.2-5 Average Daily Emissions of Criteria Air Pollutants during Operation of Bear Creek Redwoods in 2030 (Alternative B)

Emissions Sources	ROG (lbs/day)	NO _x (lbs/day)	PM ₁₀ Exhaust (lbs/day)	PM _{2.5} Exhaust (lbs/day)
Mobile	1.2	0.7	0.5	0.2
Natural Gas ¹	0.0	0.1	0.0	0.0
Area Source ²	1.3	0.0	0.0	0.0
Total	2.5	0.8	0.5	0.2
Threshold of Significance	54	54	82	54
Exceeds Threshold?	No	No	No	No

Notes: Maximum daily emissions represent emissions occurring during a special event day.

¹ No natural gas use is anticipated at the proposed outdoor arenas or trails.

² Operational architectural coating emissions would only apply to the arenas and the former Alma College visitor's center.

ROG = reactive organic gases
 NO_x = oxides of nitrogen
 PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
 PM_{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
 lbs/day = pounds per day

See Appendix D for detail on model inputs, assumptions, and project specific modeling parameters.

Source: Modeling conducted by Ascent Environmental in 2015 based using CalEEMod v. 2013.2.2

As shown in Table 4.2-5, average daily unmitigated long-term mobile-source emissions would not exceed applicable mass emissions thresholds. Therefore, long-term operational emissions of criteria air pollutants and precursors would not conflict with the air quality planning efforts or contribute substantially to the nonattainment status of Santa Clara County with respect to the NAAQS or CAAQS for ozone, PM₁₀, or PM_{2.5}. This impact is would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.2-3: Mobile-source carbon monoxide emissions.

Though buildout of the plan would result in additional vehicle trips on the surrounding roadway network, project operation would not result in increases in traffic such that the BAAQMD screening criteria for local carbon monoxide (CO) concentrations would be triggered. Therefore, the project would not result in increased concentrations of CO that would expose sensitive receptors to unhealthy levels. This would be a **less-than-significant** impact.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. CO disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities.

CO concentration is a direct function of vehicle idling time and, thus, traffic flow conditions. Under specific meteorological conditions, CO concentrations near congested roadways and/or intersections may reach unhealthy levels with respect to local sensitive land-uses such as residential areas, schools, and hospitals. This is why CO is a pollutant of localized concern and analyzed at the local level.

BAAQMD provides a screening methodology to analyze project impacts from localized CO emissions. This screening methodology states that localized concentrations of CO would not exceed the CAAQS or NAAQS if the following criteria are met:

- ▲ Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- ▲ The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- ▲ The project traffic would not increase traffic volumes at affected intersections 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).

Full build out of the proposed project would result in new visitor trips. Based on the traffic study conducted, see Section 4.12, "Traffic and Transportation," the project would generate up to 1,167 new daily trips. This is not result in enough new daily peak-hour trips to trigger any of the criteria discussed above. As a result, the project would not result in exceedances of the CAAQS or NAAQS. This impact would be would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.2-4: Exposure of sensitive receptors to toxic air contaminants.

Construction activities would not result in substantial emissions of diesel PM, even during the most intense construction season, and would not take place in the same locations affecting the same off-site receptors in the plan area every construction season during the buildout period. During major construction of proposed project features, the Preserve area under construction would be closed to the public (consistent with MROSD practice), avoiding exposure of Preserve users to toxic air contaminants. TACs associated with long-term operations of the BCRPP would also be intermittent and relatively low. Therefore, levels of TACs from project-related construction and operations would not result in an increase in health risk exposure at off-site sensitive receptors. This impact would be **less than significant**.

The exposure of sensitive receptors (e.g., existing and future off-site residents) to TAC emissions from project-generated construction and operational sources is discussed separately below, followed by an analysis of the exposure of the proposed project to TACs emitted by existing nearby sources.

Short-Term Construction

Construction-related activities would result in temporary, short-term project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment used for site preparation (e.g., demolition, clearing, grading); trail construction or upgrades; paving; application of architectural coatings; and other miscellaneous activities.

Particulate exhaust emitted from diesel-fueled engines (i.e., diesel PM) was identified as a TAC by the ARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (ARB 2005), so diesel PM is the focus of this discussion. Based on the emission modeling conducted and presented in Table 4.2-4 above, an average daily exhaust emissions of PM₁₀, which is a surrogate for diesel PM, would not exceed 1.5 lbs/day during the most intense year of construction activity (anticipated to be the second year of construction). Activity in this year would include demolition, grading, paving, trenching, and architectural coating as well as building renovation at former Alma College. Furthermore, diesel PM would be generated from different portions of the plan area rather than a single location, and different types of construction activities (e.g., site preparation, paving, building construction) would not occur at the same place at the same time.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher health risk exposure level for any exposed receptor. According to OEHHA, HRAs, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities that result in TAC exposure (OEHHA 2012:11-3). Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the periods of construction.

Another important consideration is the proximity of nearby sensitive receptors. Studies show that diesel PM is highly dispersive (e.g., diesel PM concentrations decrease by 70 percent at 500 feet from the source) (Zhu et al. 2002:1032), and receptors must be in close proximity to emission sources to potentially be exposed to concentrations of concern. The sensitive receptors closest to proposed construction activities include several single family homes along Bear Creek Road between Mellots Road and Highway 17. These homes are located as close as 100 feet from Bear Creek Road and approximately 620 feet from the nearest construction staging area at the Lower Parking Area. A few of these homes are located within 50 feet of proposed rehabilitated trails where a dozer may be operated for a relatively short period. Other nearby land uses include a church and elementary school, located 400 and 2,000 feet from the nearest construction area at Bear Creek Stables, respectively.

The residents located along Bear Creek Road would not be exposed to substantial increases in emissions of diesel PM from haul trucks because haul trucks would access the project site via Highway 17. In addition, only 15 haul trucks per day would access the project site.

Construction areas would be closed to public use and, thus, would reduce the exposure of trail users to sources of diesel PM. For these reasons, impacts to Preserve visitors would be minimal. Additionally, given the locations of receptors relative to potential diesel PM emission sources and the temporary nature of construction activities within specific locations on the project site, the concentrations and durations of any diesel PM exposure would be limited.

Long-Term Operations

The project would not site new sensitive receptors close to TAC sources, such as roadways or electricity generation facilities. Moreover, operation of the project would not generate substantial new heavy-duty truck trips that could increase diesel PM emissions along roadways leading to the site. Operation of Bear Creek Stables would remain similar to existing conditions, except for some special events throughout the year, which would generate mostly passenger vehicle trips. New trips associated with operation of the new proposed trails and use of the former Alma College site would mostly be conducted by non-diesel passenger vehicles.

Summary

Considering the relatively low mass of diesel PM emissions that would be generated during project construction, the relatively short duration of construction activities within specific portions of the project site, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index greater than 1.0. This would be a **less-than-significant** impact.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.2-5: Exposure of sensitive receptors to odors.

The proposed project would not result in any new sources of odor into the area or introduce new odor-sensitive receptors where they would be exposed to substantial objectionable odors. Therefore, this impact would be **less than significant**.

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of members of the public to objectionable odors would be deemed to have a significant impact.

During construction, minor odors from the use of heavy duty diesel equipment and the laying of asphalt would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. Paving activities at the Lower Parking Area and the proposed Bear Creek Road Crossing would be located closest to existing receptors. This activity would take place approximately 400 feet west of a single family home.

During operations, the proposed project would not substantially increase the number of horses kept at Bear Creek Stables. Thus, odors associated with manure dumps and horse stables would remain mostly unchanged from existing conditions. No other major odor sources are proposed and no sensitive land uses would be constructed under project conditions.

Project implementation would not result in any major sources of odor. Diesel exhaust from the use of on-site construction equipment would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. Thus, neither construction nor operation of the project would create objectionable odors affecting a substantial number of people. Also, the project would not locate odor-sensitive land uses in close proximity to any existing odor sources. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

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4.3 BIOLOGICAL RESOURCES

This section addresses biological resources known or with potential to occur in the project vicinity, and describes potential effects of project implementation on those resources. Biological resources include common vegetation (including invasive weeds) and habitat types, sensitive plant communities, aquatic habitats, and special-status plant and animal species. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the potential direct and indirect impacts of project implementation, and mitigation measures recommended to address impacts determined to be significant or potentially significant.

No comments pertaining to biological resources were received during public review of the Notice of Preparation for the proposed project.

4.3.1 Environmental Setting

HABITATS WITHIN THE PRESERVE

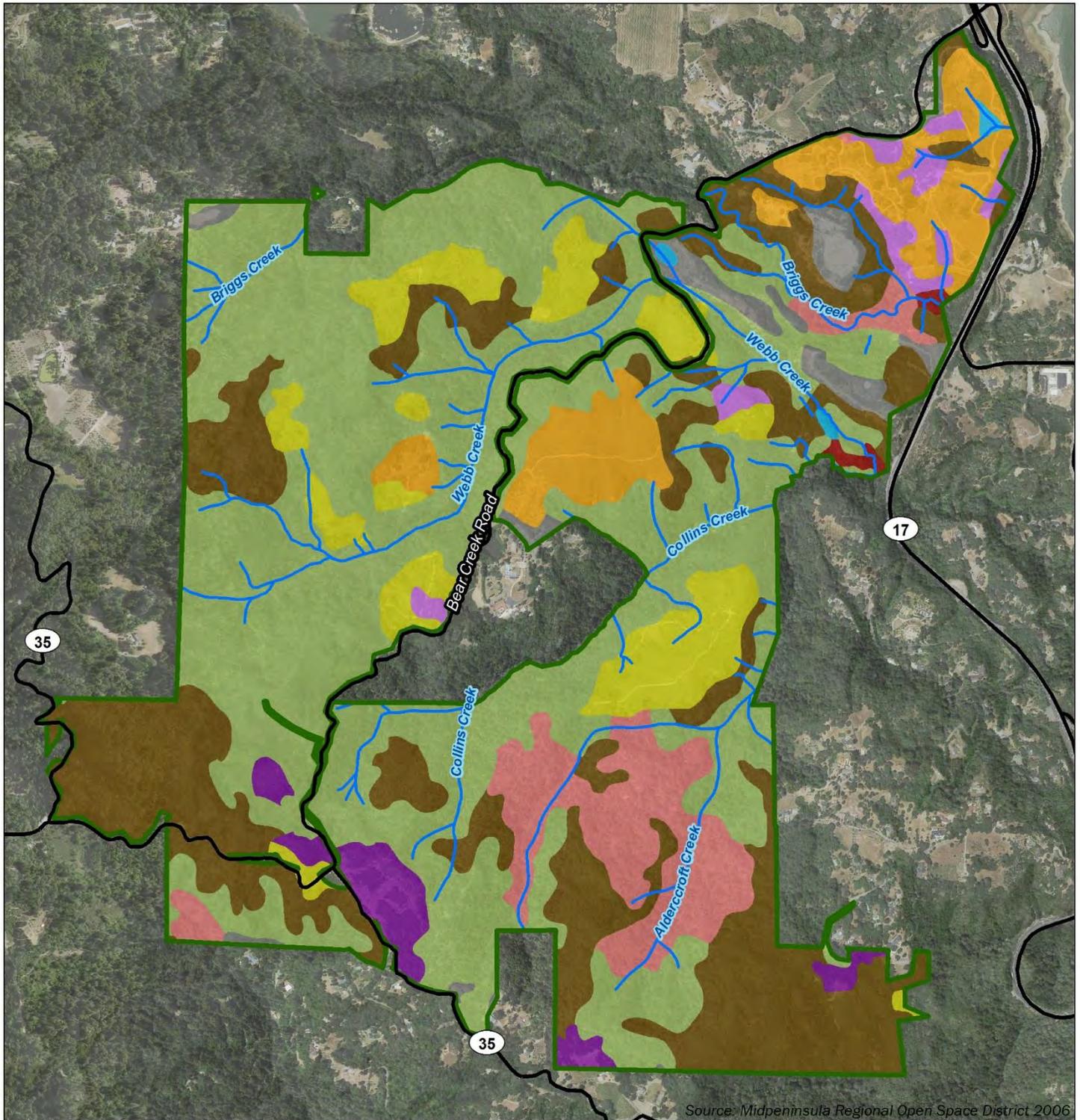
The dominant habitat types within the Preserve are described below, including common plant and wildlife species that are found in each of the habitat types. Special-status plant and wildlife species are described under sensitive biological resources.

Redwood Forest

Redwood forest is present within several areas of the Preserve, and is dominated by coast redwood (*Sequoia sempervirens*), with some areas with Douglas fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), and California bay (*Umbellularia californica*) (Exhibit 4.3-1). The redwood forest primarily occurs within canyons and along slopes that receive high winter rainfall, and most redwoods within the Preserve are second growth trees in areas that have been previously logged. The understory and abundance of invertebrates in redwood forests provide foraging habitat for a number of species. Wildlife species commonly found within this habitat include Trowbridge shrew (*Sorex trowbridgii*), California myotis (*Myotis californicus*), California giant salamander (*Dicamptodon ensatus*), California newt (*Taricha torosa*), and banana slug (*Ariolimax columbianus*). Bird species commonly found in redwood forest within the Preserve include western screech-owl (*Megascops kennicottii*), Steller's jay (*Cyanocitta stelleri*), common raven (*Corvus corax*), chestnut-backed chickadee (*Poecile rufescens*), brown creeper (*Certhia Americana*), winter wren (*Troglodytes hiemalis*), and Pacific-slope flycatcher (*Empidonax difficilis*) (H.T. Harvey & Associates 2006).

Douglas Fir Forest

Much of the Preserve is Douglas fir forest (Exhibit 4.3-1). This habitat type has substantial areas of tanoak and California bay, and some areas of Pacific madrone (*Arbutus menziesii*). Wildlife species found in Douglas fir forest are similar to those found within the redwood forest on-site, but also include pygmy nuthatch (*Sitta pygmaea*), hermit warbler (*Setophaga occidentalis*), black-throated gray warbler (*Setophaga nigrescens*), and purple finch (*Haemorhous purpureus*). This habitat type also provides habitat for sharp-tailed snake (*Contia longicaudae*), rubber boa (*Charina bottae*), yuma myotis (*Myotis yumanensis*), and Merriam's chipmunk (*Neotamias merriami*).



Source: Midpeninsula Regional Open Space District 2006

Legend

Bear Creek Redwoods Preserve

Major Roads

Vegetation Types

Riverine

Annual Grassland

Aquatic

Coast Oak Woodland

Coastal Scrub

Disturbed/Developed

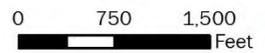
Douglas Fir

Former Agriculture

Montane Hardwood

Redwood

Valley Foothill Riparian



Aerial: NAIP 2014
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Exhibit 4.3-1

Habitats within the Preserve



Coast Oak Woodland

Coast oak woodlands are found primarily in the northeastern portion of the Preserve and are dense, closed-canopy, broadleaved evergreen forests (Exhibit 4.3-1). This habitat type is dominated by coast live oak (*Quercus agrifolia*), although California bay and tanoak are also common within this habitat type. The shrub understory includes blackberry (*Rubus* spp.), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpos albus*), and toyon (*Heteromeles arbutifolia*). This habitat type provides high quality habitat for a variety of wildlife species including mountain lion (*Puma concolor*), western gray squirrel (*Sciurus griseus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), wild boar (*Sus scrofa*), acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), chestnut-backed chickadee, oak titmouse (*Baeolophus inornatus*), white-breasted nuthatch (*Sitta carolinensis*), Nuttall's woodpecker (*Picoides nuttallii*), slender salamander (*Batrachoseps attenuatus*), ringneck snake (*Diadophis punctatus*), and western skink (*Plestiodon skiltonianus*). Hutton's vireo (*Vireo huttoni*) and dark-eyed junco (*Junco hyemalis*) also commonly nest within coast oak woodland. Santa Cruz black salamander (*Aneides flavipunctatus niger*), which is an uncommon species and consider a Species of Special Concern by the California Department of Fish and Wildlife (CDFW), was found within this habitat type in the Preserve (Conrad et al. 2003 cited in H.T. Harvey & Associates 2006).

Montane Hardwoods

Montane hardwoods are found throughout the Preserve (Exhibit 4.3-1). This habitat type is dominated by black oak (*Quercus velutina*), blue oak (*Quercus douglasii*), valley oak (*Quercus lobataa*), and California buckeye (*Aesculus californica*). Montane hardwoods within the Preserve provide high quality habitat similar to the coast oak woodland habitat and wildlife species found within this habitat type are similar to those found within the coast oak woodland.

Valley Foothill Riparian

Within the Preserve, the valley foothill riparian woodlands occur within forested upland habitats and; therefore, are generally narrow with little understory (Exhibit 4.3-1). This habitat type is dominated by box elder (*Acer negundo*), big leaf maple (*Acer macrophyllum*), and alder (*Alnus* sp.). Because the valley foothill riparian habit within the Preserve is poorly defined, it does not provide as high quality of habitat as other areas of valley foothill riparian habitat within the county. This habitat does provide habitat for a variety of mammals, amphibians, and reptiles including raccoon (*Procyon lotor*), deer mice (*Peromyscus maniculatus*), San Francisco dusky-footed woodrat, garter snake (*Thamnophis sirtalis*), and Pacific treefrog (*Pseudacris regilla*). Valley foothill riparian habitat also supports a variety of wintering and migrating bird species including Pacific-slope flycatcher, warbling vireo (*Vireo gilvus*), Wilson's warbler (*Cardellina pusilla*), and black-headed grosbeak (*Pheucticus melanocephalus*) (H.T. Harvey & Associates 2006).

Coastal Scrub

Coastal scrub is found primarily within the northern and north-central portions of the site and is dominated by coyote brush (*Baccharis pilularis*), as well as non-native French broom (*Genista monspessulana*) and scotch broom (*Cytisus scoparius*) (Exhibit 4.3-1). Wildlife commonly found within this habitat type include coyote (*Canis latrans*), California mouse (*Peromyscus californicus*), black-tailed jackrabbit (*Lepus californicus*), brush rabbit (*Sylvilagus bachmani*), Pacific gopher snake (*Pituophis catenifer catenifer*), Northern Pacific rattlesnake (*Crotalus oreganus oreganus*), northern alligator lizard (*Elgaria coerulea*), and western fence lizard (*Sceloporus occidentalis*). This habitat type also provides habitat for western scrub-jay, dark-eyed junco, California thrasher (*Toxostoma redivivum*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), wrentit (*Chamaea fasciata*), Bewick's wren (*Thryomanes bewickii*), and Anna's hummingbird (*Calypte anna*) (H.T. Harvey & Associates 2006).

Annual Grassland

Annual grassland is primarily found within the northern portion of the Preserve and is dominated by non-native grasses such as wild oat (*Avena barbata*) and soft chess brome (*Bromus hordeaceus*) (Exhibit 4.3-1). This habitat type supports a variety of species including deer mice, California ground squirrel (*Spermophilus*

beecheyi), Botta's pocket gopher (*Thomomys bottae*), black-tailed deer (*Odocoileus hemionus columbianus*), coyote, bobcat (*Lynx rufus*), western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Elgaria multicarinata multicarinata*), and gopher snake (*Pituophis catenifer*). Bird species that use this habitat include western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), American pipit (*Anthus rubescens*), mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), barn swallow (*Hirundo rustica*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (H.T. Harvey & Associates 2006).

Fresh Emergent Wetland

Three ponds located within northeastern portion of the Preserve are classified as open water/fresh emergent wetland habitat (Exhibit 4.3-1). These ponds have little emergent wetland vegetation, but still provide substantial habitat for aquatic species. The ponds provide nesting habitat for song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), and mallard (*Anas platyrhynchos*). The ponds also provide foraging habitat for green heron (*Butorides virescens*), belted kingfisher (*Megaceryle alcyon*), double-crested cormorant (*Phalacrocorax auritus*), and many species of waterfowl. Non-native bullfrog (*Lithobates catesbeianus*) have been recorded at all three ponds, and Pacific tree frog has been recorded at Upper Lake, also known as Front Lake. In addition, California newt was found at Mud and Lower Lakes, rough skinned newt (*Taricha granulosa*) at Mud Lake, and non-native fish, including bluegill (*Lepomis macrochirus*), mosquitofish (*Gambusia affinis*), brown bullhead (*Ameiurus nebulosus*), and largemouth bass (*Micropterus salmoides*) were identified in Upper and Lower Lakes (H.T. Harvey & Associates 2006; Balance Hydrologics 2016). Western pond turtle (*Emys marmota*) have been detected at both Upper and Lower Lakes during 2016 surveys. Lower Lake currently has good quality basking habitat for western pond turtle and Upper Lake has moderately good upland habitat that could support western pond turtle nests. Non-native red eared slider (*Trachemys scripta elegans*) along with Louisiana red-swamp crayfish (*Procambarus clarkii*) have also been observed at Upper Lake (Balance Hydrologics 2016).

Riverine

Riverine habitat within the Preserve includes several ephemeral, intermittent, and perennial streams (Exhibit 4.3-1). The streams on-site provide marginal habitat for wildlife. No fish were observed within the streams although they may provide habitat for California giant salamander and California newt. The streams on-site may also provide marginal habitat for North American beaver (*Castor canadensis*), although they are primarily associated with streams above Lexington Reservoir.

Barren

Barren lands within the Preserve are developed and include paved areas, buildings, highly disturbed areas associated with developed areas, and some ornamental vegetation (Exhibit 4.3-1). Species that use these areas include striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), mourning dove, non-native European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock pigeon (*Columba livia*). Bear Creek Stables likely supports barn swallow (*Hirundo rustica*) and black phoebe (*Sayornis nigricans*), and the former Alma College site provides roosting habitat for several bat species (H.T. Harvey & Associates 2006).

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources evaluated as part of this analysis include special-status species and sensitive natural communities. The California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) were used as well as previous biological reports prepared for the Preserve to identify previously reported occurrences of special-status species and sensitive natural communities in the project vicinity. The CNDDDB is a statewide database, managed by CDFW that is continually updated with the location and condition of the state's rare and declining species and habitats. Although the CNDDDB is the most current and reliable tool available for tracking occurrences of special-status species, it contains only those records that have been reported to CDFW. MROSD also maintains its own GIS database of sensitive species reported on MROSD-owned lands. Occurrences of sensitive biological resources in the project vicinity are documented

in the CNDDDB and MROSD's GIS database. A search of the CNPS online *Inventory of Rare and Endangered Plants* (CNPS 2015) was also conducted.

Special-Status Species

Special-status species are plants and animals in the following categories:

- ▲ listed or proposed for listing as threatened or endangered under federal Endangered Species Act (ESA) or candidates for possible future listing;
- ▲ listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA);
- ▲ listed as Fully Protected under the California Fish and Game Code;
- ▲ animals identified by CDFW as species of special concern;
- ▲ plants considered by CDFW to be “rare, threatened or endangered in California” (California Rare Plant Ranks of 1A, presumed extinct in California; 1B, considered rare or endangered in California and elsewhere; and 2, considered rare or endangered in California but more common elsewhere). Note, that while these ranking do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under California Environmental Quality Act (CEQA);
- ▲ considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- ▲ otherwise meets the definition of rare or endangered under CEQA Section 15380(b) and (d).

Special-Status Plants

Based on the CNDDDB, CNPS, and surveys of the Preserve conducted by H.T. Harvey & Associates and MROSD, 87 special-status plant species have been previously documented in the project vicinity. Eighteen of these species were excluded from the table because suitable habitat for these species is not present within the Preserve, or because the Preserve is outside of the geographic or elevation range (680 – 2,400 feet) of these species. Twenty-one additional species were excluded because they are on CNPS List 3 (plants for which more information is needed – review list) or List 4 (Plants of limited distribution – watch list) species, which are generally not considered special-status species under CEQA. Table 4.3-1 presents the potential for occurrence of remaining special-status plant species within the Preserve.

Table 4.3-1 Special-Status Plant Species with Potential to Occur at the Bear Creek Redwoods Open Space Preserve					
Species	Status ¹			Habitat	Potential for Occurrence
	FESA	CESA	CRPR		
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	E	–	1B	Cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	–	–	1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Arctostaphylos andersonii</i> Anderson's manzanita	–	–	1B	Broadleafed upland forest, chaparral, north coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.

Table 4.3-1 Special-Status Plant Species with Potential to Occur at the Bear Creek Redwoods Open Space Preserve

Species	Status ¹			Habitat	Potential for Occurrence
	FESA	CESA	CRPR		
<i>Arctostaphylos regismontana</i> Kings mountain manzanita	–	–	1B	Broadleaved upland forest, chaparral, north coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Arctostaphylos silvicola</i> Bonny Doon manzanita	–	–	1B	Chaparral, closed-cone and lower montane coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Calyptridium parryi</i> var. <i>hesseae</i> Santa Cruz mountains pussypaws	–	–	1B	Chaparral, cismontane woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Campanula californica</i> Swamp harebell	–	–	1B	Bogs and fens, closed-cone and North Coast coniferous forest, coastal prairie, meadows, marshes and swamps	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Carex comosa</i> Bristly sedge	–	–	2	Coastal prairie, marshes and swamps, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Carex saliniformis</i> Deceiving sedge	–	–	1B	Coastal prairie, coastal scrub, meadows and seeps, marshes and swamps.	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	–	–	1B	Valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Chorizanthe pungens</i> var. <i>hartwegiana</i> Ben Lomond spineflower	E	–	1B	Lower montane coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Chorizanthe robusta</i> var. <i>hartwegii</i> Scotts Valley spineflower	E	–	1B	Meadows and seeps, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	E	–	1B	Chaparral, cismontane woodland, coastal dunes, coastal scrub	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Cirsium fontinale</i> var. <i>campylon</i> Mt. Hamilton fountain thistle	–	–	1B	Chaparral, cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Collinsia multicolor</i> San Francisco collinsia	–	–	1B	Closed-cone coniferous forest, coastal scrub	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Dacryophyllum falcifolium</i> Tear drop moss	–	–	1B	North Coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Didymodon norrisii</i> Norris's beard-moss	–	–	2	Cismontane woodland, lower montane coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Dirca occidentalis</i> Western leatherwood	–	–	1B	Broadleaved upland forest, chaparral, closed-cone and north coast coniferous forest, cismontane woodland, riparian woodland	Potential habitat present. Prior surveys did not identify any occurrences.

Table 4.3-1 Special-Status Plant Species with Potential to Occur at the Bear Creek Redwoods Open Space Preserve

Species	Status ¹			Habitat	Potential for Occurrence
	FESA	CESA	CRPR		
<i>Dudleya abramsii</i> spp. <i>setchellii</i> Santa Clara Valley dudleya	E	—	1B	Cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Eriogonum nudum</i> var. <i>decurrens</i> Ben Lomond buckwheat	—	—	1B	Chaparral, cismontane woodland, lower montane coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Erysimum teretifolium</i> Santa Cruz wallflower	E	E	1B	Chaparral, lower montane coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Fissidens pauperculus</i> Minute pocket moss	—	—	1B	North Coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Fritillaria liliacea</i> Fragrant fritillary	—	—	1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	—	—	1B	Coastal bluff scrub, coastal scrub, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Hesperocypris abramsiana</i> var. <i>abramsiana</i> Santa Cruz cypress	E	E	1B	Closed-cone and lower montane coniferous forest, chaparral	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Hoita strobilina</i> Loma Prieta hoita	—	—	1B	Chaparral, cismontane woodland, riparian woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Lessingia micradenia</i> var. <i>glabrata</i> Smooth lessingia	—	—	1B	Chaparral, cismontane woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Malacothamnus arcuatus</i> Arcuate bush-mallow	—	—	1B	Chaparral, cismontane woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	—	—	1B	Chaparral, cismontane woodland, coastal scrub, riparian woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Malacothamnus hallii</i> Hall's bush-mallow	—	—	1B	Chaparral, coastal scrub	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Microseris paludosa</i> Marsh microseris	—	—	1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Mielichhoferia elongata</i> Elongate copper moss	—	—	2	Cismontane woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Monardella villosa</i> ssp. <i>globosa</i> Robust monardella	—	—	1B	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.

Table 4.3-1 Special-Status Plant Species with Potential to Occur at the Bear Creek Redwoods Open Space Preserve

Species	Status ¹			Habitat	Potential for Occurrence
	FESA	CESA	CRPR		
<i>Monolopia gracilens</i> Woodland woollythreads	–	–	1B	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Orthotrichum kellmanii</i> Kellman's bristle moss	–	–	1B	Chaparral, cismontane woodland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Pedicularis dudleyi</i> Dudley's lousewort	–	–	1B	Chaparral, cismontane woodland, North Coast coniferous forest, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Penstemon rattanii</i> var. <i>kleei</i> Santa Cruz Mountains beardtongue	–	–	1B	Chaparral, lower montane and North Coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Pentachaeta bellidiflora</i> White-rayed pentachaeta	E	E	1B	Cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Piperia candida</i> White-flowered rein orchid	–	–	1B	Broadleafed upland forest, lower montane and North Coast coniferous forest	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Plagiobothrys diffusus</i> San Francisco popcorn-flower	–	E	1B	Coastal prairie, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Polygonum hickmanii</i> Scotts Valley polygonum	E	E	1B	Valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Senecio aphanactis</i> chaparral ragwort	–	–	1B	Chaparral, cismontane woodland, coastal scrub	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Silene verecunda</i> ssp. <i>verecunda</i> San Francisco campion	–	–	1B	Chaparral, coastal bluff scrub, coastal scrub, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	–	–	1B	Broadleafed upland forest, chaparral, closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Streptanthus albidus</i> ssp. <i>albidus</i> Metcalf Canyon jewel-flower	E	–	1B	Valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> Most beautiful jewel-flower	–	–	1B	Chaparral, cismontane woodland, valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	–	–	1B	Broadleafed upland forest, cismontane woodland, coastal prairie	Potential habitat present. Prior surveys did not identify any occurrences.
<i>Tropidocarpum capparideum</i> Caper-fruited tropidocarpum	–	–	1B	Valley and foothill grassland	Potential habitat present. Prior surveys did not identify any occurrences.

Table 4.3-1 Special-Status Plant Species with Potential to Occur at the Bear Creek Redwoods Open Space Preserve

Species	Status ¹			Habitat	Potential for Occurrence
	FESA	CESA	CRPR		
Notes: CRPR = California Rare Plant Rank; CNDDDB = California Natural Diversity Database; CESA = California Endangered Species Act; FESA = Federal Endangered Species Act					
¹ Legal Status Definitions					
Federal Endangered Species Act:			California Rare Plant Ranks:		
E	Endangered (legally protected)		1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)		
T	Threatened (legally protected)				
California Endangered Species Act:			2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)		
E	Endangered (legally protected)				
Source: CNPS 2015					

Special-Status Animals

Based on a review of the results of the CNDDDB search, documented species ranges, review of relevant documents pertaining to biological resources, and conditions observed during surveys previously conducted for the site, a list of special-status wildlife species in the vicinity of the Preserve was compiled (Table 4.3-2). Nineteen special-status animals have potential to occur within the Preserve and are described in more detail below.

Table 4.3-2 Special-Status Animal Species, Their Status, and Potential Occurrence on Bear Creek Redwoods Open Space Preserve

Name	Status ¹			Habitat	Potential for Occurrence On Site
	FESA	CESA	Other		
Amphibians and Reptiles					
Santa Cruz black salamander (<i>Aneides niger</i>)	-	-	CSC	Mesic forests in the fog belt of outer Coast Range. Endemic, with a small geographic range. Moist streamside microhabitats, often in shallow standing water or seeps. Spends much of life cycle underground.	Suitable habitat present in forest, oak woodland, and grassland throughout the Preserve.
California giant salamander (<i>Dicamptodon ensatus</i>)	-	-	CSC	Mesic coastal forests and coastal chaparral. Breeding and larval development occurs in cold permanent and semipermanent streams	Suitable habitat present in oak woodland, coniferous forests, and coastal scrub habitat throughout the Preserve.
Western pond turtle ² (<i>Emys marmota</i>)	-	-	CSC	Creeks, ponds and other aquatic habitat. Needs upland heavy soils to breed.	Suitable habitat is present in ponds. Has been observed breeding on-site.
California red-legged frog ² (<i>Rana aurora draytonii</i>)	T	-	CSC	Freshwater ponds and still pools in streams.	Suitable habitat present, and recorded in the northern part of the Preserve in 1999. However, surveys conducted in 2006 failed to detect species in the ponds in the northeastern part of the Preserve. Currently appears to be absent as a breeder, but dispersing individuals could occasionally occur in streams and ponds. Presence is anticipated to be limited due to presence of bullfrog.
Foothill yellow-legged frog (<i>Rana boylei</i>)	-	-	CSC	Streams, usually with relatively little riparian vegetation and a cobble substrate.	Suitable habitat present in creeks on the Preserve. Not detected during surveys, but could potentially occur.

Table 4.3-2 Special-Status Animal Species, Their Status, and Potential Occurrence on Bear Creek Redwoods Open Space Preserve

Name	Status ¹			Habitat	Potential for Occurrence On Site
	FESA	CESA	Other		
Birds					
Golden eagle (<i>Aquila chrysaetos</i>)	-	-	FP	Nests on cliffs or in large trees, forages over grasslands and oak woodlands.	No nesting habitat present, and no local nesting records. Considered absent as a breeder, but could occur as a rare forager in grasslands.
White-tailed kite (<i>Elanus leucurus</i>)	-	-	FP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Open grasslands provide suitable foraging habitat, and numerous trees provide suitable nesting habitat. Expected to breed in suitable habitat on the Preserve.
American peregrine falcon (<i>Falco peregrinus anatum</i>)	E	P	-	Nests on cliffs, and occasionally on buildings or bridges; forages for birds over many habitats.	No nesting habitat present. Likely to occur as an uncommon forager, primarily during migration and winter.
Long-eared owl (<i>Asio otus</i>)	-	-	CSC	Occurs in dense riparian woodlands and other woodlands, and forages over grasslands and other open habitats.	Potential habitat occurs on Preserve. Could breed in forested areas and forage on the Preserve.
Vaux's swift (<i>Chaetura vauxi</i>)	-	-	CSC	Nests in chimneys and in hollow snags in redwood forests.	No suitable nesting habitat in structures, and no large snags suitable for nesting. Unlikely to breed on the Preserve, occurring only as an occasional forager and migrant.
Olive-sided flycatcher (<i>Contopus cooperi</i>)	-	-	CSC	Nests in late-successional conifer forests with open canopies. Montane forests dominated by Douglas fir, but also tan oak, live oak and madrone. Associated with edges, openings, and clearings.	Potential habitat occurs on Preserve. Could breed in forested areas on the Preserve.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	-	-	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Shrubs and trees in open habitats provide marginal breeding habitat. Could breed near grasslands on the Preserve.
Purple martin (<i>Progne subis</i>)	-	-	CSC	Open riparian forests with large trees such as sycamores or snags with cavities for nesting	Potential habitat present, and species may occur on-site in coast oak woodlands and valley riparian habitats.
California yellow warbler (<i>Setophaga petechia brewsteri</i>)	-	-	CSC	Nests in dense stands of willow and other riparian habitat	Riparian habitat in the northeastern part of the Preserve is marginally suitable for breeding, but this species occurs on the Preserve primarily as a migrant.
Bryant's savannah sparrow (<i>Passerculus sandwichensis alaudinus</i>)	-	-	CSC	Nests and forages in grasslands or ruderal areas within and just above the fog belt.	Potential habitat present, and species may occur on-site in grasslands or ruderal areas.
Tricolored blackbird (<i>Agelaius tricolor</i>)	-	-	CSC	Nests colonially in cattails or other emergent vegetation around freshwater ponds.	Emergent vegetation around ponds not extensive enough to be suitable for breeding. Could occur in grasslands or disturbed areas (e.g., near the Bear Creek Stables) as an occasional forager.
Mammals					
Pallid bat ² (<i>Antrozous pallidus</i>)	-	-	CSC	Forages on the ground in open habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	Grasslands likely not extensive enough to provide suitable foraging habitat; this species was not detected during bat surveys in 2002 and 2003, but was detected on-site during 2015 and 2016 surveys. Pallid bat individuals or a small maternity colony are likely present (H.T. Harvey & Associates 2016).

Table 4.3-2 Special-Status Animal Species, Their Status, and Potential Occurrence on Bear Creek Redwoods Open Space Preserve

Name	Status ¹			Habitat	Potential for Occurrence On Site
	FESA	CESA	Other		
Townsend's big-eared bat ² (<i>Corynorhinus townsendii</i>)	-	CT	CSC	Forages aerially in a variety of habitats. Typically roosts in caves, but can also roost in anthropogenic structures.	maternity roosts not detected, but acoustic data collected in 2016 provide strong evidence for the presence of a maternity colony (H.T. Harvey & Associates 2016). Individuals have been found roosting at former Alma College. Roosting and foraging individuals expected to occur occasionally.
Western red bat ² (<i>Lasiurus blossevillei</i>)	-	-	CSC	Roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	Detected roosting in buildings on-site during 2015 surveys.
San Francisco dusky-footed woodrat ² (<i>Neotoma fuscipes annectens</i>)	-	-	CSC	Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.	Coastal scrub, oak woodlands, and riparian habitats provide suitable habitat. Observed on-site.
Ringtail (<i>Bassariscus astutus</i>)	-	-	FP	Prefers riparian and heavily wooded habitats near water.	Potential habitat present, and species may occur on site in coastal scrub, oak woodlands, and riparian habitats. Species observed near Lexington Reservoir.

¹ Status definitions:

Federal Endangered Species Act (FESA):

E Endangered
T Threatened
CT Candidate Threatened

California Endangered Species Act (CESA):

E Endangered Other:
CSC Considered California species of special concern by CDFW (no formal protection other than CEQA consideration)
FP Fully Protected Species (formally protected under the California Fish and Game Code)

² Species observed on-site.

Source: CNDDB 2015, MROSD, pers. comm. 2015, Shuford and Gardali 2008

Santa Cruz Black Salamander, California Giant Salamander, California Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle

California red-legged frog is federally listed as threatened and a California species of special concern. Santa Cruz black salamander, California giant salamander, foothill yellow-legged frog, and western pond turtle are California species of special concern. A petition to list western pond turtle as federally threatened or endangered is currently under review with USFWS. California red-legged frog requires still or slow-moving water with emergent vegetation and is often found in stock ponds or seasonal pools that dry during late summer and fall. Although breeding success increases in absence of predatory fish, California red-legged frogs can be found in stream habitats in areas where suitable pooling occurs. Foothill yellow-legged frog requires perennial stream habitats with rocky or cobble substrate. Western pond turtle is generally associated with permanent or near-permanent aquatic habitats, such as lakes, ponds, streams, freshwater marshes, and agricultural ditches. In the Preserve, suitable aquatic habitat is present in the streams and ponds and western pond turtle has been observed basking in the ponds and nesting in upland areas. Santa Cruz black salamander has been observed in the oak woodland habitat in the Preserve, and suitable habitat for the species is also present in other moist forest and grassland habitats with streams or seeps. California giant salamander is associated with moist forest habitats and use the streams within the Preserve for breeding and larval development. However, the presence of non-native species such as bullfrog, fish, and crayfish within the ponds reduces the quality of the habitat for these species.

Golden Eagle, White-tailed Kite, and Other Raptors

Golden eagle and white-tailed kite are fully protected under the California Fish and Game Code. Golden eagle is also protected under the Golden and Bald Eagle Protection Act. Nests of all raptors (hawks and owls) are protected under Section 3503.5 of the California Fish and Game Code. The Preserve does not have suitable nesting habitat for golden eagle; however, it could occur as a rare forager in grasslands. In addition, the grasslands and woodlands found on site provide potentially suitable foraging and nesting habitat for white-tailed kite and other raptors.

Long-eared Owl

Long-eared owl is a California species of special concern that could nest within the Preserve. Long-eared owls typically nest in woodland, riparian, and coniferous forests, and they often use the abandoned nests of raptors. Although long-eared owl is not common in Santa Clara County, suitable habitat is present within the Preserve.

Olive-sided Flycatcher, Purple Martin, Loggerhead Shrike, Yellow Warbler, and Bryant's Savannah Sparrow

Olive-sided flycatcher, purple martin, loggerhead shrike, yellow warbler, and Bryant's savannah sparrow are all California species of special concern that could nest in the Preserve. Olive-sided flycatchers nest in mature forests near clearings and other forest openings. Purple martins typically nest in tree cavities, but may also use artificial structures. Loggerhead shrikes nest in shrubs and small trees in shrublands and open woodlands and typically forage in grasslands and agricultural fields. Yellow warblers are widespread in the Santa Cruz Mountains and breed along foothill streams supporting willow, white alder, and bigleaf maple, with a thick shrub understory. Bryant's savannah sparrows are year-round residents in moist grasslands and ruderal areas that are influenced by coastal fog.

San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat is a California special species of concern. This species prefers hardwood forest, riparian, and brushland habitat. In 2006, several woodrat nests were observed within the northern portion of the Preserve in broom/coyote brush habitat. It is likely that this species is widespread within the Preserve, and the species was observed in buildings at the former Alma College site during 2015 bat surveys (H.T. Harvey & Associates 2006, 2015).

Special-Status and Common Bats

Three special-status bats, Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), and western red bat (*Lasiurus blossevilli*), as well as Mexican free-tailed bat (*Tadarida brasiliensis*), California myotis (*Myotis californicus*)/Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), hoary bat (*Lasiurus cinereus*), fringed myotis (*Myotis thysanodes*), and big brown bat (*Eptesicus fuscus*) have been documented in or have the potential to roost in the Preserve. Townsend's big-eared bat is a California species of special concern and is a candidate for listing as Threatened under CESA. Pallid bat and western red bat are also species of special concern. In 2002 and 2015, bat surveys were conducted within the Preserve. In 2002, a large maternity roost of Mexican free-tailed bats (100+ individuals) and a single Townsend's big-eared bat were present in the main chapel building at the former Alma College site. Ten Mexican free-tailed bats were captured exiting the building and all were pregnant females, indicating a maternity colony. In addition, one long-eared myotis was observed in the attic of the classroom building at the former Alma College site (Heady and Frick 2002). In 2015, the Classroom, 1950s Library, 1934 Library, and Chapel buildings at the former Alma College site were surveyed for bats and acoustical and sunset emergence surveys were also conducted. Evidence of bat inhabitation was present in all of the buildings surveyed, and the surveys indicated that hundreds, if not thousands, of bats occupy the buildings during peak periods, and that the buildings have likely been colonized by bats for more than a decade. Townsend's big-eared bat, Mexican free-tailed bat, California myotis/Yuma myotis, pallid bat, western red bat, hoary bat, big brown bat, long-eared myotis, and fringed myotis were detected during the 2015 surveys (H.T. Harvey & Associates 2015). Bat houses previously installed near the former Alma College site were also inhabited by bats shortly after installation.

Ringtail

Ringtail is a fully protected species and is a member of the raccoon family. Ringtail are typically found within riparian habitat and den in hollow trees, logs, snags, rock recesses, and abandoned burrows or woodrat nests. They are nocturnal and are rarely seen; however, the Preserve is within the species' range (ringtails have been sighted near Lexington Reservoir), and suitable habitat is present on-site. Therefore, although the likelihood is low, this species has the potential to occur within the Preserve.

Sensitive Natural Communities

Sensitive natural communities include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the federal Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act, as discussed below in Section 4.3.2 "Regulatory Setting." Sensitive natural communities may be of special concern to regulatory agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Many of these communities are tracked in CDFW's CNDDDB, a statewide inventory of the locations and conditions of the State's rarest plant and animal taxa and vegetation types.

Several plant communities within the Preserve are considered to be sensitive because of known and potential habitats that support special-status species or regionally special plant species. These habitats include the redwoods, montane hardwoods, coast oak woodlands, valley foothill riparian, and fresh emergent wetlands, which are described above.

4.3.2 Regulatory Setting

FEDERAL

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regulate the taking of terrestrial and inland species and anadromous and marine species listed as threatened or endangered under the ESA. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If a project would result in take of a federally-listed species, either the project applicant must acquire an incidental-take permit, under Section 10(a) of ESA, or if a federal discretionary action is involved, the federal agency consults with USFWS or NMFS under Section 7 of the ESA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act declares it is illegal to take bald eagles, including their parts, nests, or eggs unless authorized. "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause injury to an eagle, a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or nest abandonment. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA

provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all migratory birds native to the United States.

Section 404 of the Clean Water Act

Section 404 of the federal CWA requires a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land, or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; relatively permanent tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE verification. MROSD is in the process of obtaining Routine Maintenance Agreement from USACE that provides Section 404 compliance for routine maintenance activities within MROSD's preserves.

Section 401 Water Quality Certification

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine regional water quality control boards (RWQCB). MROSD has a Routine Maintenance Agreement with the San Francisco RWQCB that provides Section 401 compliance for routine maintenance activities within MROSD's preserves.

STATE

California Endangered Species Act

The CESA prohibits the taking of state-listed endangered or threatened species, as well as candidate species being considered for listing. Project proponents may obtain a Section 2081 incidental take permit if the impacts of the take are minimized and fully mitigated, and the take would not jeopardize the continued existence of the species. A "take" of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harm" or "harass" as is included in the federal ESA. As a result, the threshold for a take under CESA may be higher than under ESA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States as well as areas that meet the definition of "waters of the state." Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 404 of the CWA provided they meet the definition of waters of the state. Mitigation requiring no net loss of wetlands functions and values of waters of the state is typically required by the RWQCB.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Sections 1600 et seq. of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity. "Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. MROSD has a Routine Maintenance Agreement with CDFW that provides Section 1602 compliance for routine maintenance activities within MROSD's preserves.

Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species unless the take is covered under a Natural Community Conservation Plan that is approved by CDFW.

Protection for Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. Section 3513 of the California Fish and Game Code codifies the federal MBTA.

LOCAL

Santa Clara County General Plan

The following policies in the Santa Clara County General Plan are applicable to biological resources within the Preserve:

- ▲ **C-RC 27:** Habitat types and biodiversity within Santa Clara County and the region should be maintained and enhanced for their ecological, functional, aesthetic, and recreational importance.
- ▲ **C-RC 28:** The general approach to preserving and enhancing habitat and biodiversity countywide should include the following strategies:
 - 1. Improve current knowledge and awareness habitats and natural areas.
 - 2. Protect the biological integrity of critical habitat areas.
 - 3. Encourage habitat restoration.
 - 4. Evaluate the effectiveness of environmental mitigations.
- ▲ **C-RC 29:** Multi-jurisdictional coordination necessary to adequately identify, inventory, and map habitat types should be achieved at the local, regional, state, and federal levels.
- ▲ **C-RC 31:** Areas of habitat richest in biodiversity and necessary for preserving threatened or endangered species should be formally designated to receive greatest priority for preservation, including baylands and riparian areas, serpentine areas, and other habitat types of major significance.
- ▲ **C-RC 32:** Land uses permitted in resource conservation areas should not be allowed to degrade the integrity of natural habitat.

- ▲ **C-RC 33:** Linkages and corridors between habitat areas should be provided to allow for migration and otherwise compensate for the effects of habitat fragmentation.
- ▲ **C-RC(i)13:** Acquisition of areas of significance through the County's Open Space Authority, MROSD, County Parks, National Wildlife Refuge, and other agencies and non-profit organizations for permanent preservation.
- ▲ **C-RC 34:** Restoration of habitats should be encouraged and utilized where feasible, especially in cases where habitat preservation and flood control, water quality, or other objectives can be successfully combined.
- ▲ **C-RC(i)15:** Explore opportunities for restoration of habitat, particularly with respect to wetland, riparian, needed to protect threatened and endangered species.
- ▲ **C-RC 35:** The status of various threatened and endangered species and the effectiveness of strategies and programs to preserve biodiversity should be monitored and evaluated on an ongoing basis.

Midpeninsula Regional Open Space District Resource Management Policies

MROSD prepared a Resource Management Policy document to define the policies and practices used to protect and manage resources on MROSD lands (MROSD 2012). The Resource Management Policies are intended as a tool to:

- ▲ set the framework for MROSD's resource management program;
- ▲ provide general direction for issue-specific and site-specific planning;
- ▲ give staff and Board the basis for informed, consistent, and effective resource management decisions;
- ▲ inform the public of the purpose and intentions of MROSD's resource management program;
- ▲ provide a basis for evaluation of MROSD's progress in reaching its resource management objectives.

From MROSD's Basic Policy:

Objective 2: Open Space Management: The District follows management policies that ensure proper care of the land, that provide public access appropriate to the nature of the land, and that are consistent with ecological values and public safety.

The resource management mission of MROSD is to protect and restore the natural diversity and integrity of its resources for their value to the environment, and the public, and provide for the use of the Preserves consistent with resource protection.

Specifically, MROSD will:

- ▲ Favor protection of resources when use significantly interferes with resource protection.
- ▲ Provide an effective interdisciplinary resource management program to protect and enhance natural and cultural resources. This program should include planning, interpretation, research, protective measures, maintenance, and monitoring practices.
- ▲ Prevent or minimize human-caused and accelerated impacts, including erosion, invasion by non-native species, disruption of the natural flow of water, degradation of water quality, trampling of vegetation, and displacement of wildlife.
- ▲ Protect and restore known rare, endangered, or special concern species and habitats, as well as seriously degraded or deteriorating areas. Give priority to endangered habitats and consider the relative scarcity of the specific resources involved.

- ▲ Manage open space as a composite resource, not separate and isolated parts. Maintain ecological processes as well as individual species and features. Consider the regional context and cumulative impacts of resource management decisions. Favor long-term goals over short-term benefits.
- ▲ Support recreational use of District lands, consistent with resource protection. Consider present and potential use.
- ▲ Balance efforts to protect and restore resources with efforts to acquire and provide public access to lands.
- ▲ Monitor changing conditions and the effectiveness of resource management practices.

Midpeninsula Regional Open Space District Integrated Pest Management Guidance Manual

The Integrated Pest Management (IPM) Guidance Manual is a process for efficiently managing pests, including harmful invasive plants, invasive animals, flammable vegetation near structures, and rodents and insects, throughout all of MROSD's properties, while protecting human health and environmental quality. The IPM specifically identifies typical pests occurring in recreational facilities, including mosquitos, social wasps, ticks, rattlesnakes, and invasive vegetation. IPM is a long-term, science-based, decision-making system that uses a specific methodology to manage damage from pests. IPM requires monitoring site conditions before, during, and after treatment to determine if objectives are being met and if methods need to be revised. IPM requires that non-chemical methods be considered in addition to chemical methods (i.e., pesticides, herbicides, insecticides). The overall methodology of the IPMP includes correct identification of the pest and understanding of its life cycle; determining and mapping the extent of the problem or infestations; establishing the tolerance level for control actions; utilizing the least toxic suite of treatment methods to control the pest at vulnerable stages of its life cycle; and the monitoring of pest populations and effectiveness of treatment methods (MROSD 2014). The IPM Guidance Manual includes Best Management Practices (BMPs) and the EIR prepared for the IPM includes mitigation measures to reduce environmental impacts associated with implementation of the IPM. Consistent with the IPM Guidance Manual, a separate IPM Plan was prepared for the Bear Creek Redwoods Preserve in 2016, which prioritizes issues and provides specific treatments for controlling invasive plant species at the Preserve.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and objectives of the Preserve Plan related to biological resources would be implemented if the Preserve Plan is approved:

Goal NR1: Increase the acreage of protected habitat and connectivity to wildlife corridors

- Obj NR-1.1 Continue to purchase properties and conservation easements to expand and protect the Preserve's natural resources, aesthetic values, and connectivity
- Obj NR-1.2 Maintain working relationships with other land owners and stakeholders in the vicinity of the Preserve to coordinate efforts to identify and retain habitat linkages

Goal NR2: Protect habitats that support diverse biological resources, are unique, or are important for the conservation of rare, threatened and endangered species

- Obj NR-2.1 Protect and enhance special-status species habitat and other sensitive biotic communities
- Obj NR-2.2 Protect and, where appropriate, enhance forest habitat
- Obj NR-2.3 Plan public access features to avoid adverse impacts and habitat fragmentation
- Obj NR-2.4 Identify wildlife movement corridors; work cooperatively with neighboring landowners to identify and preserve corridors and habitat linkages

Obj NR-2.5 Restrict access to areas that require intensive resource management or support sensitive biotic resources

Goal NR3: Protect native wildlife

Obj NR-3.1 Identify, protect, and monitor special-status wildlife populations

Goal NR4: Repair and monitor ecologically damaged and disturbed areas

Obj NR-4.1 Control key invasive plant species

Obj NR-4.2 Manage Sudden Oak Death

Goal NR5: Protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat

Obj NR-5.1 Protect water quality and improve stream habitat

Obj NR-5.2 Treat stormwater runoff and monitor potential sources of sediment and pollutants

Obj NR-5.3 Identify and maintain existing springs, water infrastructure, and water rights

Goal MO3: Reduce wildfire risk

Obj MO-3.1 Manage wildland fuels and reduce fire hazards to natural resources, structures, and facilities

4.3.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Potential impacts on biological resources resulting from implementation of the Preserve Plan were determined by evaluating the actions proposed in the Preserve Plan in relation to the habitat characteristics of the Preserve to identify potential loss of common and sensitive habitats, and evaluate potential effects to common and special-status species that could result from this habitat loss. Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

The following standards of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, the proposed project would have a significant impact with regard to biological resources if it would:

- ▲ result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species (as defined above) in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▲ result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- ▲ result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA or state protected wetlands as defined by the Porter-Cologne Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means;

- ▲ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- ▲ conflict with any local applicable policies protecting biological resources; or
- ▲ conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other applicable HCP.

ISSUES NOT DISCUSSED FURTHER

Although construction may require use of cofferdams to divert one or more waterways on-site during construction of culverts or bridges, no special-status fish are present or have access to the Preserve. Therefore, the Preserve Plan would not adversely affect special-status fish or their habitat. This issue is not discussed further.

The Preserve is not within an area covered under an adopted HCP, NCCP, or other approved local, regional, or state conservation plan. In 2013, the Santa Clara Valley HCP/NCCP was adopted; however, the area covered by this plan is east of the Preserve. Therefore, implementation of the Preserve Plan would not conflict with the provisions of an adopted conservation plan and this issue is not evaluated further.

IMPACT ANALYSIS

Impact 4.3-1: Loss of special-status plants.

Although there have been no documented occurrences of special-status plants within the Preserve, there is potential habitat for a number of special-status plant species on-site. Special-status species are protected under ESA, CESA, or CEQA. Ground-disturbing activities related to the trail construction, road improvements, water conveyance pipelines, improvements to Bear Creek Stables and the former Alma College site, or road and trail improvements/maintenance could result in disturbance or removal of habitat for special-status species; however, implementation of environmental protection measures, which includes pre-construction surveys and avoidance measures would further minimize potential effects on special-status plants. In addition, recreational use of the Preserve is expected to be primarily limited to previously disturbed areas. Therefore, the potential for loss of special-status plants would be **less than significant**.

Although no special-status plants have been documented within the Preserve, a total of 48 special-status plants have potential to occur on-site (see Table 4.3-1). Trail and road improvements, including construction of bridges and retaining walls, construction of recreational facilities and water conveyance pipelines, improvements to Bear Creek Stables and the former Alma College site, and maintenance to trails, roads, and bridges could result in removal of habitat or individuals, smothering, compaction of soils, or crushing of root systems of special-status plants, which could affect the survival of these populations. However, implementation of Environmental Protection Measures BIO-1 through BIO-10 in Appendix C, would avoid or minimize disturbance of special-status plants during construction by conducting biological assessments prior to construction, routing trails and facilities to avoid special-status species whenever possible, and revegetating areas that have been disturbed. With implementation of these protection measures, effects to special-status plants during construction would be minimized. Once construction is complete, continued use of the Preserve and maintenance would primarily be limited to designated trails and parking areas and activities within the previously disturbed Bear Creek Stables and former Alma College site. Therefore, potential impacts of recreational use on special-status plants are expected to be minimal. In addition, implementation of Environmental Protection Measures BIO-11 through BIO-14, which would further minimize disturbance of special-status plants by requiring adaptive management techniques including limitations of trail use, rerouting, or trail closure based on results of monitoring sensitive habitats. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.3-2: Loss of bat colonies or special-status individuals.

Implementation of the Preserve Plan would involve modifications to existing abandoned buildings within the former Alma College site and some tree removal. Previous surveys have documented the presence of bat colonies within several of the former Alma College buildings. Rehabilitation, demolition, sealing, or other construction activities at these facilities could result in disturbance to active bat colonies that could affect the survival of young or adult bats. In addition, removal of large trees that provide roosting habitat could affect survival of young or adult bats. Loss of an active bat colony or special-status bats would be **potentially significant**.

Surveys conducted within the Preserve identified a large maternity roost of Mexican free-tailed bats and Townsend's big-eared bat, pallid bat, and western red bat, which are special-status species, in the buildings at the former Alma College site. In addition, as discussed above, several other bat species were also documented roosting in the buildings at the former Alma College site. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from early April until mid-October. Buildings with the highest quality habitat for bats include the chapel and 1950s library (H.T. Harvey & Associates 2016). The chapel building would likely be rehabilitated and used for events or as a visitor center. The classroom building is proposed to be removed with implementation of the Preserve Plan. In addition, several large trees that could provide roosting habitat for special-status bats would be removed. The Preserve Plan would include tracking known populations of bat colonies that inhabit the former Alma College structures to gather information on the health of these populations and determine the need for future land management actions to protect them. The Preserve Plan proposes to work with a wildlife biologist to humanely exclude and relocate bats currently inhabiting the former Alma College buildings into appropriately-designed structures that will provide alternate roosting habitat for both common and special-status bats. Implementation of the Preserve Plan would also include monitoring the use of bat houses or other structures to ensure that relocated populations are thriving.

However, demolition of buildings, tree removal, or other construction activities that cause noise, vibration, or physical disturbance could directly or indirectly affect the survival of adult or young bats including special-status bat species. Loss of an active bat colony or take of an individual special-status bat resulting from construction disturbance or demolition of structures would be a **potentially significant** impact.

Mitigation Measure 4.3-2: Implement measures to protect bat colonies.

To mitigate for activities requiring removal of roosting bats from buildings, pre-construction surveys for roosting bats within areas of potential disturbance in the Preserve will be conducted by a qualified biologist. Surveys will consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and/or an evening emergence survey to note the presence or absence of bats. The type of survey will depend on the condition of the buildings. If no bat roosts are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts, but are not required.

If roosts of Townsend's big-eared bats, pallid bats, or western red bats are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in coordination with CDFW and may include construction and installation of bat boxes or other structures suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before

bats are excluded from the original roost sites. MROSD has successfully constructed bat boxes elsewhere that have subsequently been occupied by bats. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the structures may be removed or sealed.

To mitigate for removal of large trees during the April through August nursery season to tree roosting bats:

- ▲ Avoid removal of trees greater than 16 inches in diameter at breast height (dbh) during the April through August nursery season when possible.
- ▲ If removal of trees greater than 16 inches dbh during the April through August nursery season cannot be avoided, a qualified biologist will conduct surveys for roosting bats where suitable large trees are to be removed. Surveys will consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to note the presence or absence of bats. If evidence of roosting bats is found, the number and species of roosting bats will be determined. If no evidence of bat roosts is found, then no further study will be required.
- ▲ If bat roosting sites are located in trees to be removed during the nursery season, no nursery sites will be disturbed until a qualified biologist confirms that there are no lactating females and that young are fully independent of flight and thermoregulation. If a non-nursery bat roost is to be removed, a roost removal plan shall be prepared and submitted to CDFW. The roost removal plan will describe the method of exclusion of bats from the roost. Possible methods include installation of one-way doors or sealing roost entrances for bats that roost within tree cavities. Netting or other methods may be used to prevent bats from roosting within vegetation. No bats will be excluded until the plan is approved by CDFW and alternative roosting habitat is available. The bats will be excluded from the roosting site before the site is closed.

Significance after Mitigation

Implementation of this mitigation measure would reduce significant impacts to bat colonies to a **less-than-significant** level by surveying for bats prior to disturbance to potential roosting habitat, and minimizing impacts if they are present by providing alternative roost habitat and excluding the bats from the roost habitat to be removed.

Impact 4.3-3: Loss of special-status wildlife.

Implementation of environmental protection measures (See Appendix C) as part of Preserve Plan would ensure that proposed activities would not result in the degradation of habitat and loss of special-status wildlife species, including nesting birds and special-status mammals. However, improvements proposed in or adjacent to ponds, waterways, or wetlands could affect special-status amphibians and reptiles. Special-status species are protected under ESA, CESA, California Fish and Game Code, CEQA, or other regulations. Ground-disturbing activities related to construction could result in disturbance or removal of habitat for these species or loss of individuals. Therefore, the potential loss of special-status wildlife would be **potentially significant**.

Special-status Amphibians and Reptiles

Although previous surveys failed to detect either species, the Preserve provides suitable habitat for California red-legged frog and foothill yellow-legged frog including three ponds and several streams on-site. The quality of the habitat provided for these species at the three ponds is reduced by the presence of non-native fish, turtles, crayfish, and bullfrogs. Western pond turtles breeding habitat has been observed on-site within approximately 2.8 acres of grassland adjacent to Upper Lake. An additional 2.67 acres of potential western pond turtle breeding habitat exists in and around former Alma College, although no breeding has been observed to date in this area. An endemic species with a small geographic range, Santa Cruz black salamander is also found within the Preserve. Potential habitat for California giant salamander is also present within the Preserve. Construction activities adjacent to or within waterways on-site including, construction of the Alma College parking area adjacent to Upper Lake, and construction of pipeline

crossings, bridges, and culverts across streams on-site have the potential to remove habitat or result in direct or indirect effects to California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander and western pond turtle. Therefore, construction-related impacts on special-status amphibians and western pond turtle would be **potentially significant**. It should be noted that although construction of the Alma College parking area could result in removal of up to one acre of potential western pond turtle breeding habitat, other habitat for western pond turtle occurs in the region, including within other ponds on the project site.

The Preserve Plan also includes potential actions to enhance habitat for special-status amphibians and reptiles by working to eradicate or control non-native species through implementation of an invasive species control (integrated pest management) program. A pond management plan will be developed to determine the feasibility of these actions and a hydrology and hydraulic analysis as well as a structural assessment of the three ponds will be conducted. Pond inputs, outlets, and current capacity will be documented. A structural analysis, including geotechnical and engineering geology investigations will be completed for each of the ponds. Recommendations to improve or maintain the pond basins and berm for down steam flood protection as well and long-term pond viability for native wildlife habitat will be made and will include coordination with CDFW. Recommendations will be reviewed by MROSD staff for feasibility. Once approved for long-term use and management, any required engineering plans and specifications will be drafted for permitting and re-construction. Pond restoration recommendations will be specific to each pond and may involve inlet and/or outlet improvements, berm reconstruction, de-sedimentation, connection to existing water infrastructure, or installation of appropriately sized drainage features. Implementation of Environmental Protection Measures BIO-15, including monitoring for red-legged frog and other sensitive aquatic species and modifying recreational facilities or uses that could adversely affect these species, would ensure that sensitive aquatic species would be protected from potential recreation- and maintenance-related impacts. The Preserve Plan also requires a qualified biologist to assist with the design of the Alma College parking area to minimize operations-related effects to individual western pond turtles and other sensitive aquatic species. Design features could include (but would not be limited to) siting the parking area away from areas immediately adjacent to the pond, installing signage to warn drivers that sensitive wildlife could be present, and requiring visitors to stay on trails.

Nesting Birds

Some tree removal will be required for construction of roadway improvements and staging areas. Up to two large coast live oak trees would need to be removed for construction of the Lower Parking Area and several trees would need to be removed along Bear Creek Road for the Alma College parking area. Ground-disturbing and other construction activities could also result in disturbance to bird nests in adjacent trees. Suitable nesting habitat for white-tailed kite, purple martin, loggerhead shrike, yellow warbler, and other raptors such as Cooper's hawk and sharp-shinned hawk is found within the Preserve. Because implementation of the Preserve Plan would require some tree removal and could disturb nests or nesting individuals, this impact would be **potentially significant**.

San Francisco Dusky-footed Woodrat

In 2006, several woodrat nests were observed within the northern portion of the Preserve in broom/coyote brush habitat. It is likely that this species is widespread within the Preserve (H.T. Harvey & Associates 2006). Disturbance related to construction and maintenance of trails, staging areas, and other recreational facilities could result in removal of habitat or loss of individual woodrats. Therefore, this impact would be **potentially significant**.

Ringtail

Although the likelihood is low for ringtail to occur within the Preserve, the Preserve is within the species' range and suitable habitat is present on-site. Trees that are 6 inches dbh or greater and are hollow or have large cavities provide potential den sites for ringtail. Removal of such trees or other vegetation during construction could destroy den sites. Therefore, this impact would be **potentially significant**.

Mitigation Measure 4.3-3a: Implement measures to protect special-status amphibians and western pond turtle.

MROSD shall implement the following measures during construction within suitable habitat for special-status amphibians:

- ▲ Construction within or adjacent to waterways will be avoided during the breeding season for California red-legged frog and foothill yellow-legged frog (November – March) and western pond turtle (May – mid-July). If construction cannot be avoided within or adjacent to waterways during the breeding season, a qualified biologist shall conduct a pre-activity survey for California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, and western pond turtle prior to implementing actions that include ground disturbance, vegetation removal, or other activities within or adjacent to potential habitat that could otherwise harm California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, or western pond turtle. A qualified biologist shall inspect the work area while vegetation and debris is removed during the initial phase of construction. Because Santa Cruz black salamander lay and brood eggs below ground, prior to ground disturbance, rocks, logs, and other debris shall be turned over and visually inspected. If no California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, or western pond turtle are observed during either the pre-activity survey or during removal of vegetation and debris, then work may proceed without a qualified biologist present. If any of these sensitive species are observed at any time before or during construction within the work area by anyone involved in the project, work shall cease and USFWS and/or CDFW shall be contacted. Measures to avoid and minimize disturbance to sensitive reptiles and amphibians shall be implemented and may include delaying the disturbance until after eggs or larvae have metamorphosed, redesigning the project footprint to avoid the species, moving individuals to areas of suitable habitat outside of the disturbance area, or other feasible measures acceptable to the wildlife agencies.

Mitigation Measure 4.3-3b: Implement measures to protect nesting birds.

To minimize potential disturbance to nesting birds, project activities shall occur during the non-breeding season (September 16 through February 14), unless it is not feasible to do so, in which case the following measures shall be applied:

- ▲ During trail construction, road improvements, and other construction activities, removal of trees greater than 6 inches dbh shall be limited to the greatest degree possible.
- ▲ If construction activity is scheduled to occur during the nesting season (February 15 to September 15), a qualified biologist shall conduct pre-construction surveys to identify active nests that could be affected by construction. The surveys shall be conducted before the approval of grading and/or improvement plans and no less than 14 days and no more than 30 days before the beginning of construction in a particular area. If no nests are found, no further measures are needed.
- ▲ If active nests are found, impacts on nesting birds shall be avoided by establishment of appropriate buffers around the nests. No project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged or the nest is no longer active. A 500-foot buffer for large raptors such as buteos, 250-foot buffer for small raptors such as accipiters, and 250-foot for passerines are generally adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with CDFW depending on site-specific conditions. For trail construction, use of non-power hand-tools may be permitted within the buffer area if the behavior of the nesting birds would not be altered as a result of the construction. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Mitigation Measure 4.3-3c: Implement measures to protect San Francisco dusky-footed woodrat.

To minimize potential disturbance to San Francisco dusky-footed woodrat, the following measures will be implemented:

- ▲ Prior to removal of any buildings or vegetation within riparian, oak woodland, montane hardwood, or coastal scrub, redwood or Douglas fir forests, a qualified biologist will conduct a survey for woodrat nests within the area to be disturbed. If no woodrat nests are found, no further measures are necessary.
- ▲ If woodrat nests are found, they should be avoided if possible and a minimum buffer of 10 feet shall be established around the nest(s). This buffer may be adjusted in consultation with CDFW.
- ▲ If the nests cannot be avoided, MROSD will consult with CDFW in areas where removal of San Francisco dusky-footed woodrat nests is required. Consultation will occur prior to removal of the nests. Actions needed to protect woodrat nests will be determined in consultation with CDFW and may include the live capture and relocation of woodrats to suitable adjacent habitats and removal of nesting sites. Trapping activities will occur prior to April and after July each year to prevent impacts to woodrats rearing young or young woodrats. Nest middens will be dismantled by hand under the supervision of a biologist. Nest material will be moved to suitable adjacent areas that will not be disturbed. As woodrats exhibit high site fidelity, buildings with previous woodrat nests will be regularly inspected for potential intrusion to prevent infestation.

Mitigation Measure 4.3-3d: Implement measures to protect ringtail.

If any trees that are 6 inches or greater in dbh need to be removed, MROSD and its contractors shall implement the following measures to protect ringtail:

- ▲ A qualified biologist will conduct pre-construction surveys to identify any potential ringtail den sites. If no den sites are identified, no further measures are needed.
- ▲ If a ringtail den site is identified, it will not be removed from May through August. The den site may be removed or sealed from September through April. A qualified biologist will verify the den is not occupied immediately prior to removing or sealing the den.

Significance after Mitigation

Implementation of these mitigation measures would reduce significant impacts associated with the degradation of habitat for special-status species and potential loss of individuals to a **less-than-significant** level by surveying for special-status species and avoiding or minimizing impacts if they are present.

Impact 4.3-4: Loss of sensitive natural communities and fill of waters of the United States.

Although pipelines, trails, bridges, and other recreational facilities would be located to avoid sensitive natural communities and wetlands to the extent possible, construction of these facilities, including temporary use of cofferdams, could require removal of riparian and wetland vegetation and could result in the placement of fill material into waters of the United States. This impact would be **potentially significant**.

Sensitive natural communities and wetlands would be avoided to the extent possible in the siting and design of trails, bridges, culverts, retaining walls, and other recreational facilities and implementation of Environmental Protection Measures BIO-1 through BIO-9 would further reduce potential impacts to sensitive natural communities. However, pond restoration recommendations may involve inlet and/or outlet improvements, berm reconstruction, de-sedimentation, connection to existing water infrastructure, or installation of drainage features. Although these actions would result in overall benefits to the pond habitat, there would be some fill of waters associated with these actions. In addition, trail and road improvements and maintenance including construction of bridges, retaining walls, and culverts, as well as temporary dewatering and use of cofferdams for construction of these improvements, would disturb sensitive natural communities and could result in temporary or permanent fill of waters of the United States. Furthermore, because the locations and design of the proposed recreational facilities have not been finalized, there is the potential for direct or indirect affects to waterways to occur or for riparian or wetland vegetation to be removed. Therefore, loss of sensitive natural communities would be **potentially significant**.

Mitigation Measure 4.3-4: Avoid and minimize impacts to sensitive natural communities and compensate for loss of riparian and wetland habitats.

MROSD will seek to avoid wetland impacts through siting, design, and other avoidance measures. However, if avoidance is not possible, MROSD will review its Routine Maintenance Agreements with CDFW and the RWQCB to determine if the proposed activities are covered by these permits. If so, MROSD will comply with the terms of these existing agreements.

If MROSD determines that one or more activities are not covered by existing permits, a jurisdictional wetland delineation will be conducted by a qualified wetland specialist for sensitive areas that cannot be avoided. The preliminary delineation shall be submitted to USACE for verification. The wetlands may be subject to CDFW regulation under Section 1602 of the Fish and Game Code. No grading, fill, or other ground disturbing activities shall occur until all required permits, regulatory approvals, and permit conditions for effects on wetland habitats are secured.

If the wetlands are determined to be subject to USACE jurisdiction, the project may qualify for use of a Nationwide Permit if certain criteria are met. For those wetlands that cannot be avoided, MROSD shall commit to replace, restore, or enhance on a “no net loss” basis (in accordance with USACE, RWQCB, and CDFW) the acreage of all wetlands and other waters of the United States that would be removed, lost, and/or degraded with project implementation. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, RWQCB, and CDFW, as appropriate, depending on agency jurisdiction, and as determined during the permitting processes.

Significance after Mitigation

Implementation of this mitigation measure would reduce potentially significant impacts associated with the sensitive natural communities and wetlands to a **less-than-significant** level by providing replacement, restoration, or enhancement habitat of equal or greater value.

Impact 4.3-5: Effects of increased recreation on wildlife and inference with wildlife movement.

Implementation of the Preserve Plan would result in increased public access to wildlife habitats that previously have experienced limited human disturbance. Proposed trail connections would provide recreational opportunities for hikers, mountain bikers, and equestrians. However, these activities are unlikely to substantially adversely affect native wildlife or plant communities. The construction and use of trails are also not likely to substantially interfere with wildlife movement in the region. Therefore, this impact would be **less than significant**.

The proposed trail connections would be constructed in phases in the future to increase opportunities for public access and recreation within the Preserve. The trail connections would link the Preserve to Lexington Reservoir and Skyline-Summit trail to the Bay Area Ridge Trail. These trails would be open to hiking, equestrian use, and mountain biking (although biking will not be allowed on all trails). Dogs would not be permitted. Recreational use of the trails in previously undisturbed areas may deter some wildlife species from using the area immediately adjacent to the trails, but the effect is not expected to be severe enough in magnitude to cause localized extinctions or restrict the range of native species.

A wildlife corridor connects habitat areas and, by doing so, helps to increase movement and gene flow between core habitat areas resulting in improved fitness for a species. Creation of trail connections from the Preserve to other existing trails is unlikely to substantially deter wildlife movement through the project region. The maximum trail width would be 12 feet; however, many of the trails would be narrower. These trails would not present a substantial barrier to wildlife movement. While construction of trails would not likely create a wildlife barrier, some movement patterns may shift or change, as some species would avoid areas with trails and human scent, and other species may prefer to use the trails for easier access routes. However, these changes are expected to be minor and would not constitute a significant change in wildlife movement patterns. Implementation of Environmental Protection Measures BIO-10 through BIO-14, which

require identification of invasive species, limiting trail use in areas with habitat for special-status species, periodic monitoring of sensitive species, and allow for adaptive management to protect and enhance sensitive species, would also further reduce the potential impacts of recreational use on wildlife and wildlife habitat by reducing the potential to introduce invasive species, limiting trail use in sensitive areas, monitoring sensitive species, and closing trails as needed to reduce impacts to wildlife.

The effects of special events within the Preserve on wildlife would be minimal because they would be limited to Bear Creek Stables and the former Alma College site where there is existing development, no amplified sound or music that could be heard beyond the Preserve boundaries would be allowed, event parking would be within designated staging areas, and no events would occur at nighttime. Therefore, events within the Preserve are not expected to have a substantial impact on wildlife.

In addition, garbage that could degrade habitat and attract pest species could increase with recreational use of the Preserve. However, MROSD implements measures on preserve lands consistent with MROSD's *IPM Guidance Manual* (MROSD 2014), discussed above, including ensuring garbage is contained and food is properly stored, to deter pest species, such as rats, raccoons, jays, and crows. Large populations of predatory pest species can reduce the number of other native species, including migratory birds. MROSD avoids concentrating recreational picnic sites in large areas that may become feeding stations for pest species. In addition, recreational users of MROSD preserves are instructed to dispose of all garbage in proper locations, under a "pack it in, pack it out" approach.

Therefore, the recreational use of the Preserve would not have a substantial adverse effect on native species and is not expected substantially interfere with wildlife movement. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.3-6: Introduction or spread of invasive plants.

Invasive species have been documented within the Preserve, and construction, recreational use, and maintenance has the potential to introduce additional invasive plants or cause invasive plant populations to spread. Noxious weeds and other invasive plants could inadvertently be introduced or spread within the Preserve during grading and construction and maintenance activities if nearby source populations passively colonize disturbed ground, or if personnel and equipment is transported to the site from an infested area. Soil, vegetation, and other materials transported to the Preserve from off-site sources could contain invasive plant seeds or plant material that could become established on-site. Additionally, invasive species could be introduced or spread through use of trails by hikers and equestrians. The introduction and spread of invasive species would degrade terrestrial plant, wildlife, and aquatic habitats, including sensitive communities within the Preserve. However, implementation of environmental protection measures and measures in MROSD's *IPM Guidance Manual* would minimize the introduction and spread of invasive species. Therefore, this impact would be **less than significant**.

Infestations of several noxious weed species—French broom, Spanish broom, yellow starthistle (*Centaurea solstitialis*), harding grass (*Phalaris aquatic*), periwinkle (*Vinca minor*), English ivy (*Hedera helix*), perennial sweet pea (*Lathyrus latifolius*)—were documented within the Preserve during botanical surveys conducted. Once established, invasive plant species can alter ecosystem processes and cause serious deleterious effects on native biological communities. The effects of invasive plant species can also decrease wildlife habitat values. Non-native terrestrial and aquatic invasive species compete with native plant and animal species; their introduction and proliferation in ecosystems can substantially alter the dynamics of native aquatic and terrestrial communities. This conversion can indirectly affect wildlife and fish species by changing and often reducing food sources and habitat structure and can lead to competition between native plant species and the weeds, often resulting in loss of native vegetation.

Implementing the Preserve Plan could result in the spread of noxious weeds that are present within the Preserve. Additionally, new noxious weed species and other invasive plants could be introduced to the Preserve during construction and maintenance. Construction and maintenance would involve temporary ground-disturbing activities in disturbed and native vegetation types. Constructing new trails, parking areas, and other recreational facilities would temporarily create areas of open ground that could be colonized by invasive plant species from inside or outside of the Preserve. Invasive weeds and other species could inadvertently be introduced or spread in the Preserve during grading and construction and maintenance activities, if nearby source populations passively colonize disturbed ground, or if weed seeds or propagules are inadvertently transported and distributed by equipment and personnel from an infested area. Erosion-control materials, seed mixes, and unwashed construction equipment can also transport propagules of invasive plants to construction sites where disturbed areas can provide ideal conditions for their establishment, and aid their spread into adjacent native plant communities. Following construction, the use of the Preserve by hikers and equestrians could also introduce invasive weeds. However, implementation of Environmental Protection Measures BIO-10 and BIO-14 in Appendix C would reduce the potential for introducing or spreading weed populations in the Preserve by requiring contractors to use equipment free of mud or seed-bearing material, using weed-free fill material, mulch, seeds, and straw material, monitoring trails to ensure early detection of invasive species, and closing trails as needed to protect sensitive resources. In addition, MROSD's *IPM Guidance Manual*, discussed above, provides measures that guide invasive species control throughout all of MROSD's properties (MROSD 2014). Consistent with the *IPM Guidance Manual*, MROSD recently prepared (January 2016) an IPM Plan for the Bear Creek Redwoods Preserve that prioritizes issues and provides specific treatments for controlling invasive plant species at the Preserve. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.3-7: Conflict with any local applicable policies protecting biological resources.

Although some tree removal would be required for the Preserve Plan, tree removal would be avoided to the extent possible and any trees removed would be done in accordance with local policies and ordinances. Because the proposed project is a plan, detailed improvement programs and grading plans will not be prepared until specific improvements are funded and authorized, which would occur after approval of the Preserve Plan. Once these detailed plans are available, MROSD will coordinate with Santa Clara County to adhere to the requirements of the Ordinance. However, impacts to trees are considered **potentially significant** until MROSD complies with the County's Tree Preservation and Removal Ordinance.

The Santa Clara County General Plan includes policies and goals related to protecting biological resources. In addition, the Santa Clara County Tree Preservation and Removal Ordinance (County Code, Sections C16.1 to C16.17) serves to protect all trees measuring 12 inches dbh in areas zoned as Hillside (HS), any heritage trees, and any trees within road rights-of-way. The Preserve Plan is designed to avoid tree removal to the extent possible; however, some tree removal will be required for construction of roadway improvements and staging areas. Up to six pine trees (non-native) over 12 inches dbh would need to be removed along Bear Creek Road for Alma College parking area and two large coast live oak trees would need to be removed for construction of Lower Parking Area. These two trees are not currently listed as heritage trees, but given their species and size, they would likely qualify if nominated. Oak woodland is present within the Preserve (See Exhibit 4.3-1); however, the proposed tree removal would not affect 0.5-acre of the oak woodland canopy. Implementation of the Preserve Plan would include BMPs for Sudden Oak Death, including removing hazard trees.

Because the proposed project is a plan, detailed improvement programs and grading plans will not be prepared until specific improvements are funded and authorized, which would occur after approval of the Preserve Plan. Once these detailed plans are available, MROSD will coordinate with Santa Clara County to adhere to the requirements of the Ordinance. However, impacts to trees are considered **potentially significant** until MROSD complies with the County's Tree Preservation and Removal Ordinance.

Mitigation Measure 4.3-7: Remove and replace trees consistent with the Santa Clara County Tree Preservation and Removal Ordinance (County Code, Sections C16.1 to C16.17).

MROSD will comply with the requirements of the Santa Clara County Tree Preservation and Removal Ordinance as applied to parcels greater than 3 acres in lands zoned HS and as applied to trees located within County right-of-way. For removal of large oak trees, MROSD will replace each oak tree removed at a 3:1 ratio with 15-gallon trees, in-kind, or other ratio approved by the County. MROSD will maintain each of the replacement trees.

Significance after Mitigation

Implementation of this mitigation measure would reduce potentially significant impacts associated with tree removal to a **less-than-significant** level by providing replacement trees and complying with the County's Tree Preservation and Removal Ordinance.

4.4 CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the proposed project on known and currently unknown cultural resources and on unknown fossil deposits of paleontological importance. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins), intact structures (e.g., dams, bridges), or districts (including landscapes). A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Paleontological resources include fossils and other remains that are more than 5,000 years old and occur mainly in Pleistocene or older sedimentary rock units.

The primary sources of information for this section are the *Assessment of Recorded Archaeological Resources on the Proposed Los Gatos Country Club Project Area* (Clark 1994), *Archaeological Recording of Historical Resources on the Bear Creek Redwoods THP* (Napton and Greathouse 2000), *Alma College Conditions Assessment Project Phase I: Assessment of Existing Conditions*, prepared by Knapp Architects (2010), *Alma College Historic Resource Study*, prepared by Page & Turnbull (2005), *Historical Resource Assessments Summary Report: Beatty Property and Bear Creek Stables*, prepared by Knapp & VerPlanck Preservation Architects (2010), *Alma College Site Cultural Landscape Rehabilitation Plan*, prepared by PGAdesign (2015), *Alma College Cultural Landscape Rehabilitation Plan CEQA Historic Resource Technical Report* prepared by Page & Turnbull (2015), and the *Cultural Resources Analysis for the Midpeninsula Regional Open Space District Bear Creek Redwoods Preserve Plan Environmental Impact Report*, prepared by Pacific Legacy, Inc. (2016). The Alma College Site Cultural Landscape Rehabilitation Plan has been incorporated into the Preserve Plan and is part of the proposed project; however, this section refers to this specific portion of the proposed project as the “Rehabilitation Plan.”

4.4.1 Environmental Setting

Paleontological Setting

Significant vertebrate and invertebrate fossils and unique geologic units have been documented throughout California. The fossil-yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks (refer to geologic timescale in Table 4.4-1). Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield significant paleontological resources. Depending on location, the paleontological potential of subsurface materials generally increases with depth beneath the surface, as well as with proximity to known fossiliferous deposits.

Era	Period	Time in Millions of Years Ago (approximately)	Epoch
Cenozoic	Quaternary	< 0.01	Holocene
		2.6	Pleistocene
	Tertiary	5.3	Pliocene
		23	Miocene

Era	Period	Time in Millions of Years Ago (approximately)	Epoch
		34	Oligocene
		56	Eocene
		65	Paleocene
Mesozoic	Cretaceous	145	-
	Jurassic	200	-
	Triassic	251	-
Paleozoic	Permian	299	-
	Carboniferous	359	-
	Devonian	416	-
	Silurian	444	-
	Ordovician	488	-
	Cambrian	542	-
Precambrian		2,500	-

Source: U.S. Geological Survey 2010

Santa Clara County, located at the southern end of San Francisco Bay, is flanked on the west by the Santa Cruz Mountains. The Santa Cruz Mountains are composed primarily of Franciscan Assemblage sandstone, shale, chert and serpentine with lesser amounts of Santa Clara, Purisima, San Lorenzo, Monterey, and Vaqueros formations of Tertiary age also occur. The Franciscan Assemblage was deposited originally in a deep marine trench off the California Coast. As a result of convergence of the Pacific and North American plates, those sediments were folded, faulted, and accreted onto the continental margin, forming the Coast Ranges. During the Tertiary period, marine and non-marine sediments were deposited in portions of the Coast Ranges, creating the Tertiary formations mentioned above (Santa Clara County 1994).

The project site is located on a large, deep-seated, relatively-stable landslide that underlies much of the hillside area from Lexington Reservoir upslope to almost the crest of the ridge. Beneath the large landslide are the bedrock materials that underlie this area of the Santa Cruz Mountains. These materials can be divided into two groups based on age and separation by the San Andreas Fault. On the northeast side of the fault are the older, upper Mesozoic age rocks of the Franciscan Assemblage. These rocks consist of melange—a mixture of various types of rocks ranging from fist size to city block size blocks of rock in a matrix of sheared, mashed, and pulverized rock. These rocks are in turn overlain by interbedded conglomerate, sandstone, siltstone, and shale of the Tertiary to Pleistocene age Santa Clara Formation. On the southwest side of the fault are Tertiary age (65 million to 5.3 million years old) rocks of various formations - the Rices mudstone, San Lorenzo shale, Vaqueros sandstone (Coyle 1997).

Pleistocene or older (older than 11,000 years) continental sedimentary deposits are considered as having a high paleontological potential while Holocene-age deposits (less than 10,000 years old) are generally considered to have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms.

Regional Prehistory

Until recently, the cultural history of the Central California coast and inland region has been poorly documented. In the last decades, this has slowly changed as hundreds of archaeological surveys and excavations have been conducted in the area. The majority of this work was undertaken to comply with CEQA, the National Historic Preservation Act (NHPA), and the National Environmental Policy Act of 1969 (NEPA).

A model of subsistence and settlement change was developed in 1973 based on a 12,000 acre survey area containing 50 prehistoric sites. The model proposed a diachronic sequence beginning with a Millingstone Horizon [7000-4000 before present (B.P.)], continuing with a Middle Horizon (4000-1500 B.P.), and concluding with a Protohistoric Period (1500-400 B.P.). In 1993 reevaluation of previous research of the area led to the development of a general culture change sequence for the area. Again divided into three periods (Early Period, 4500-2500 B.P.; Middle Period, 2500-850 B.P.; and Late Period, post-850 B.P.), the sequence is one of decreasing mobility through time due to population pressure and subsequent limitation of resource access. The Early Period is characterized by a high degree of mobility, with sites in the area containing a wide array of faunal remains from both the immediate area and the coast. These faunal remains suggest that the area was occupied from spring through fall, with a possible complementary winter settlement pattern noted on the coast. In the Middle Period, mobility appears to have decreased, since sites with faunal constituents indicate possible year-round occupation. Marine shell becomes less frequent, structures more substantial, and the variety of tools much larger. Residential mobility is all but gone in the Late Period, as the lack of marine shell and predominance of local flora and fauna in the sites suggests. This reduction in territorial base and emphasis on more local resources appears compatible with the Spanish explorers' accounts of aboriginal settlement patterns (Pacific Legacy 2016).

The currently-used chronological system that reflects the significant variability and stylistic/typological transitions seen in artifact assemblages from the Central Coast and adjacent inland areas was developed in 2007. The system identifies six periods [Paleo-Indian, pre-8000 cal B.C. (calibrated years before Christ); Millingstone (or Early Archaic), 8000-3500 cal B.C.; Early, 3500-600 cal B.C.; Middle, 600 cal B.C. - cal anno Domini (A.D.) 1000; Middle/Late Transition, cal A.D. 1000 - 1250; and Late, cal A.D. - 1769]. Three cultures (the Millingstone Culture, the Hunting Culture, and the Late Period) are used to reflect broader patterns (Pacific Legacy 2016).

The Millingstone Culture is the earliest well-established sequence and dates to the Millingstone or Early Archaic Period. This period is defined by the presence of large numbers of handstones, millingslabs, crude core tools, and lesser amounts of flaked stone tools and large side-notched projectile points. Millingstone occupations have been located in a variety of settings from the coast to the nearshore interior valleys. (Pacific Legacy 2016).

The Hunting Culture spans the Early and Middle Periods and is defined by an abundance of stemmed and notched projectile points and large bifaces. The Early Period is marked by the presence of contracting stemmed, Rossi square-stemmed, and large side-notched projectile points. Middle Period sites include contracting-stemmed and large-stemmed points, but no square-stemmed or large side-notched points. Hunting Culture sites occur mainly in coastal areas but extend into nearby valleys as well. Acorns may also have been part of the Hunting Culture diet (Pacific Legacy 2016).

The Middle/Late Transition Period exhibits increasing numbers of arrow points and decreasing numbers of stemmed points. The Late Period is defined by the abundance of Desert side-notched and Cottonwood arrow points. Unlike earlier periods, Late Period sites are more common in the interior than on the coast (Pacific Legacy 2016).

Ethnography

The ethnographically-known aboriginal inhabitants of the region were part of the Ohlone language group. The Ohlone languages belong to the Utian family of the Penutian language stock and were spoken in a large area extending from the San Francisco Bay Area southward along the coast to Point Sur and inland to the Diablo Range and portions of the northern San Joaquin Valley (Pacific Legacy 2016).

Political Organization

The basic Ohlone political unit was the "tribelet," an autonomous, self-governing, territorially defined unit over which recognized authority was given to one person, in most instances the leader or chief. Each triblet would be composed of one or more villages and a number of camps within its recognized and protected resource exploitation zone. Over time several of these triblets amalgamated into larger tribal units. Due to

geographic barriers and distance between Ohlone tribelets, however, the integration of smaller political units into larger ones was the exception rather than the rule among the Ohlone (Pacific Legacy 2016).

Recent studies have suggested that socio-political groups were essentially clusters of unrelated family groups that formed loose cooperative communities in the event of ceremonial festivals, group harvesting efforts, and inter-family conflict resolution. These disparate multi-family communities joined for the majority of the year to form a large village centrally located between their lands. In other instances, rather than forming a single village, these family units distributed themselves into as many as five semi-permanent villages (Pacific Legacy 2016).

Subsistence, Trade, and Material Culture

The Ohlone were hunter-gatherers who occupied semi-permanent camps and villages from which they could take advantage of seasonal changes in resource availability. Dwellings at these habitation sites were dome-shaped, with pole frameworks and thatch for roof and walls. Other structures that could be found in an Ohlone village included: acorn granaries; sweat houses for the men, often located along stream banks; menstrual houses for women; and dance houses and assembly houses, generally located in the center of a village. From these villages the Ohlone visited the mountains, valleys and sloughs to collect resources.

The early explorer Vizcaíno noted a diverse diet among the Ohlone people, which included seeds (dock, tarweed, chia), nuts (pine nuts, buckeye, hazel, pepper/bay nuts), berries (manzanita), grasses, roots, and insects that were gathered nearby. To promote the growth of seed-bearing annuals and control the growth of rampant chaparral species, the Ohlone periodically burned vegetation in areas surrounding village sites or in areas of food gathering and hunting. The single most important food item among the Ohlone was the acorn, at least four species of which were collected and processed into meal or flour. (Pacific Legacy 2016). Terrestrial animals also formed a large portion of the Ohlone diet, and included birds and small mammals, which were hunted, clubbed, trapped, and snared. Fish were also hooked or caught by hand. Shellfish provided an important seasonal food resource (Pacific Legacy 2016).

Regional interaction among the Ohlone, and with neighboring cultures such as the Salinan and Yokuts took place through trade, ceremonies, warfare, and intermarriage. Shell beads were widely used by the Ohlone as a form of currency in exchanges. *Olivella* shells, mussels, abalone shells, salt, dried abalone, woven baskets, and other items were traded for prized goods with nearby villages and with more distant villages located in dissimilar environmental zones. Among the items received by the Ohlone in such transactions were stores of the prized piñon nut and obsidian for tool-making (Pacific Legacy 2016).

The year 1769 marked the advent of Spanish explorations of the valley. The subsequent colonization of the region was accomplished through the introduction of the Hispanic mission system. Starting with Mission San Carlos and the Presidio of Monterey in 1770, several other missions were established over the next thirty years, each exerting their influence over the native people of the project area. The subjugation of the native people resulted in dramatic environmental changes after they could no longer influence the native landscape, while poor nutrition and repeated exposure to introduced European diseases and violence served to decimate the Ohlone. Ultimately, the people affiliated with the project area were dispersed among other tribesmen at Missions Santa Clara, San Juan Bautista, and Santa Cruz. Nonetheless, many survived and their descendants continue to live in the region (MROSD 2011).

Regional History

Spain's colonization of California began in earnest in 1769 with the overland expeditions from San Diego to San Francisco Bay by Lt. Colonel Gaspar de Portolá, and the establishment of a mission and settlement at San Diego. Soon a number of other missions were to follow, and the Royal Presidio of San Francisco was founded in 1776, along with Mission Dolores, soon to be succeeded by Mission Santa Clara and California's first civilian town, el pueblo de San Jose de Guadalupe, in 1777 (MROSD 2011).

After the Mexican Revolution began in 1812, Spain stopped sending supply ships to the presidios. By 1815 the missions became the sole supporter of these communities. The missions expanded their facilities to

encompass a greater range of tasks so that by the end of Spanish rule in 1821, they were the farmers, bankers, manufacturers and traders. Following independence from Spain in 1822, the economy during the Mexican period depended on the extensive rancho system, carved from the former Franciscan missions and at least 500 land grants awarded in the State's interior to Mexican citizens (MROSD 2011).

Santa Clara County and Alma Valley

The annexation of California by the United States in 1848 and the simultaneous Gold Rush were responsible for a formidable influx of American settlers into California. Disregarding Spanish and Mexican land grants, scores of American settlers began illegally squatting on the ranchos. Owners of Mexican-era ranchos were compelled to prove the validity of their land titles – a painstakingly exhaustive and expensive process. In debt to unscrupulous lawyers who frequently took payment for their services in land, most large Mexican ranchos were gradually broken up, particularly in the San Francisco Bay region. However, lingering uncertainty over property boundaries and overlapping claims led to decades of litigation, deterring some American settlers from purchasing former rancho lands. As a result, some pioneers elected to settle the unclaimed “government land” in the previously unsettled Santa Cruz Mountains that wrapped around the south and west sides of the Santa Clara Valley.

Due to the area's isolation and the dearth of records during the chaotic transition from Mexican to American rule, it is impossible to identify the first American settler of the Alma Valley. The earliest Americans in the area were probably loggers in search of redwood for building fence pickets, shingles, and building materials for houses in the Santa Clara Valley. The first recorded saw mill in the area was established by a man named Isaac Branham, who built a water-powered saw mill in 1847 on Los Gatos Creek, approximately where Lexington Dam is located today. However, with the discovery of gold at Sutter's Mill, Branham could not retain a steady labor supply. In 1848, he sold his water rights to Zachariah “Buffalo” Jones. Jones partially solved the labor problem by widening and otherwise improving the three-mile section of the Old Spanish Trail between Los Gatos and the site of his lumber mill. With the completion of the “Jones Road,” Jones was able to more easily transport cut lumber between his mill and Los Gatos, where it could be taken into San Jose (Knapp & VerPlanck Preservation Architects 2010).

For nearly a decade, Jones maintained a near monopoly on travel between Los Gatos and Santa Cruz by charging tolls to those using his road. However, it was steep and only went as far as Jones' mill. In 1858, the Santa Clara County Board of Supervisors granted a franchise to the Santa Cruz Gap Turnpike Joint Stock Company to build a better road through Los Gatos Canyon and the Alma Valley. The new road was completed in May 1858. From Los Gatos it followed the western bank of Los Gatos Creek as far as the site of Alma before it branched off to follow what is now Aldercroft Road to the summit. Tolls were collected along this road until 1877 when Santa Clara County declared it a county road (Knapp & VerPlanck Preservation Architects 2010).

Former Alma College Site

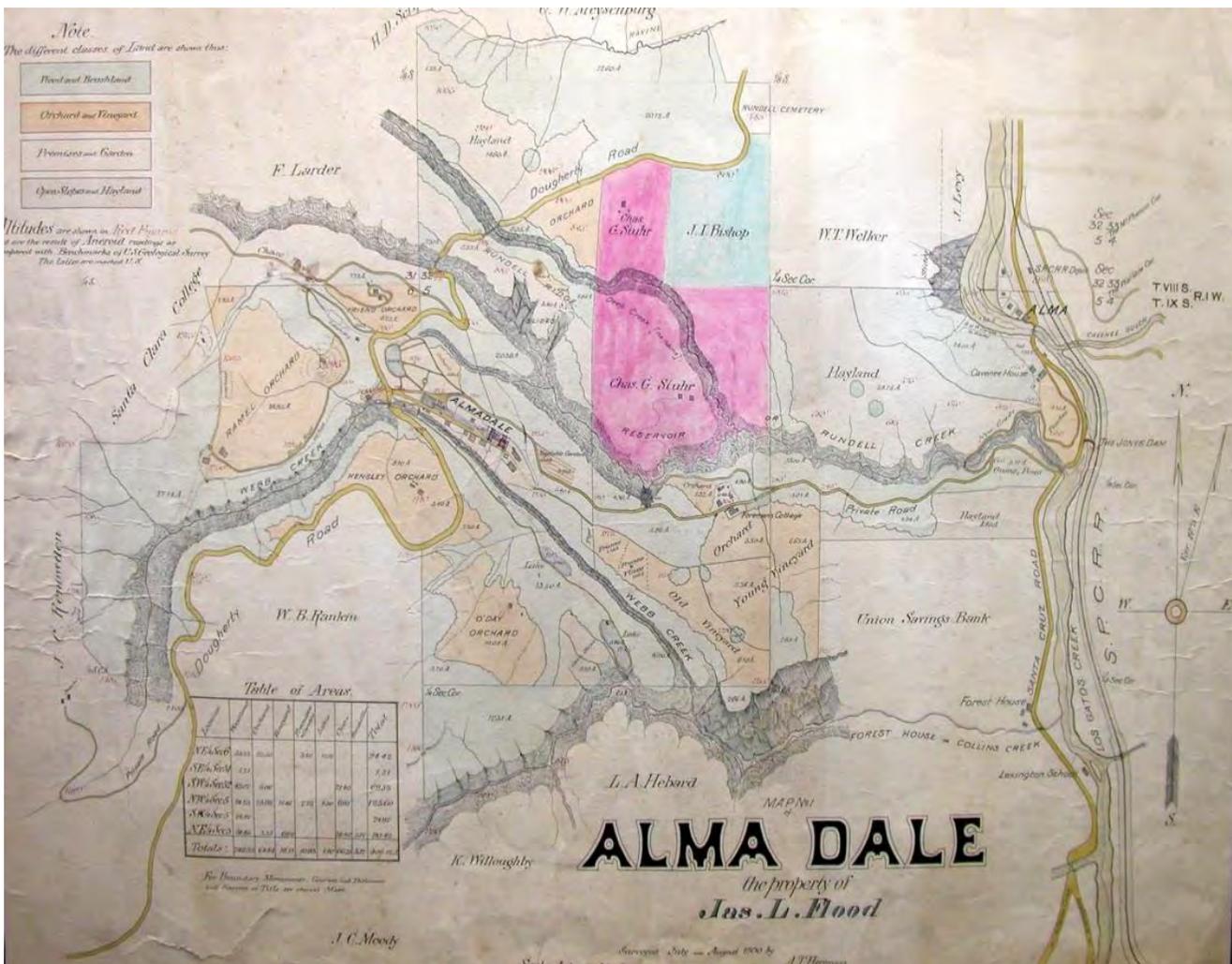
Milling Era

The former Alma College site, as discussed in detail below, is considered eligible for listing as a Cultural Landscape on the California Register of Historical Resources. The complex of buildings and landscape features is located on a long, narrow ridge in the Santa Cruz Mountains approximately three miles south of Los Gatos. Loggers first settled the area in the 1850s, attracted by dense groves of madrones and redwoods that made this one of the more heavily timbered areas south of Humboldt County. In the early 1850s a man named Webb operated a sawmill on the narrow ridge that would eventually be the site of Alma College. Located along Dougherty Road (renamed Bear Creek Road in 1952), Webb's mill took advantage of the level site, serving as a processing point between the forests above and the lumber markets to the north. By the mid-1850s, James S. Howe had taken over the mill and dammed Webb's Creek to form a lagoon and a pressure-driven sawmill. Over the next century, this lagoon, now known as Upper or Front Lake, would prove to be a central organizing element of the landscape. In the 1860s, Lysander Collins opened the Forest House Inn as a stage stop and dining room, about three-quarters of a mile east of the Preserve (see Exhibit 3-2 in Chapter 3, “Project Description”). A settlement eventually grew up around the inn and developed into the town of Alma. The establishment of a train depot in Alma after 1881 made the small town a shipping

point for the orchards located in the hills above Los Gatos. In the 1950s, the town of Alma was inundated and destroyed when the area was dammed for the Lexington Reservoir (Page & Turnbull 2005).

Estate Era

By the 1880s, depletion of the forests led to the decline in the lumber business in the area. Rather than running a mill on the site, Captain Stillman H. Knowles bought the property as a rural retreat. He built a fifteen-room house on the shores of Howe’s lagoon and developed orchards and a commercial trout farm. From that point, the site became a rural estate for several wealthy persons, Captain Stillman H. Knowles (1887-1894); John F. Farley (1894); James L. and Maria Rosina Flood (1894-1905), who named their complex “Alma Dale” (see Exhibit 4.4-1); and Dr. Henry Tevis (1905-1934). Upon purchasing the estate in July 1905, Tevis began altering the house to accommodate his own needs and tastes. The 1906 earthquake, however, significantly damaged the foundations of the house, and Tevis retained the New York architecture firm of Trowbridge & Livingston to design a new house located southeast of the old one. The estate became the primary, year-round residence of Dr. Tevis from 1909 until his death in 1931, and construction continued throughout his tenure (Page & Turnbull 2005).



East of the main house, Tevis initially constructed a lily pond with a brick trellis, and later constructed a large swimming pool, the “Roman Plunge,” on the other side of the trellis. Tevis bought surrounding properties, enlarging the estate to 1,100 acres, encompassing the majority of what is now Bear Creek Redwoods Open Space Preserve. Sixteen miles of oiled roads and 11 miles of dirt roads were constructed around the estate, supplementing the private road to Alma developed by James Flood. Tevis also significantly expanded the water system begun by the Floods, damming creeks high up in the hills and channeling that water throughout the estate. By 1931, the system had the capacity to hold 11 million gallons of water. Much of this water was delivered to the extensive gardens Tevis developed, with the aid of 43 full-time gardeners. In addition to prize winning dahlias, lilies, roses, and fuchsias, Tevis developed experimental gardens of exotic, rare plants. Tevis also reshaped the lake at the entry of the estate, originally Mr. Howe’s mill pond. Beyond the swimming pool, along the Flood’s private road to Alma, Tevis built a small village for the support of his estate and its staff of nearly one hundred servants. The village included servants’ quarters, greenhouses, storage buildings, garages and a barn, reportedly designed by the acclaimed architect, Julia Morgan (Page & Turnbull 2005). Tevis also constructed the Bear Creek Stables complex, which is discussed below.

Tevis died in 1931 and employees stayed to care for the estate until 1934 when ownership transferred to the Sacred Heart Novitiate of Los Gatos and the Jesuit Order. Because the property was sold in the depths of the Depression, the Jesuits obtained 950 acres, upon which Tevis had spent an estimated \$650,000 of improvements, for a mere \$85,000. The estate was renamed Alma College and adapted for use as a Jesuit seminary (Page & Turnbull 2005).

Jesuit Era

The Jesuits, famed for their intellectual achievement, did not arrive in California until 1849 when the Gold Rush-era population explosion resulted in an expansion of Church services. The Jesuits quickly established operations in Northern California, founding a number of colleges, including Santa Clara College in 1851. In 1855 the order opened St. Ignatius, the first Jesuit church and college in San Francisco. St. Ignatius College eventually developed into San Francisco University. In 1909, the Jesuit presence in California had expanded significantly, and they were declared a fully independent Province, which included California, Oregon, Washington, Idaho, Montana and Alaska. Although the Jesuits had founded colleges in the West following the Gold Rush, Alma College was the first Jesuit seminary to be founded in the region. Prior to 1934, Jesuit seminarians from the Province spent their last four years of training at seminaries elsewhere, in the Midwest, East, or Europe (Page & Turnbull 2005).

After purchasing Tevis’ estate in 1934, the Jesuits undertook a large and rapid building campaign to make the estate suitable for their needs. These projects included converting Tevis’ library into a chapel, several additions were made to the rear of the main house to accommodate it for use as a residence for the faculty, a new library just west of the chapel, and a two-story dormitory west of the library. Sometime in the early years of Jesuit habitation, a covered walkway was constructed along the north side of the property, connecting the north façades of the chapel, library and dormitory buildings. In 1935 the Jesuits constructed the Classroom building just south of Dormitory 1, establishing a formal open space, or mall, that led from the main house to the old Howe millpond. The pond, now known as Upper Lake, became the central organizing element for the campus as it expanded. In addition to new buildings in the formal campus area, the Jesuits expanded and adapted Tevis’ village to accommodate new needs, including a large bookbindery that maintained the school’s rare book collection (Page & Turnbull 2005).

In 1937, as the most significant construction on the campus ended, the California Department of Transportation began to alter the path of Highway 17. The new road passed onto Alma College property and forced the removal of a number of Dr. Tevis’ gardens. The rerouting of Highway 17 had stranded the town of Alma a considerable distance from the road, and during the 1940s the town withered to little more than a few houses and a store, primarily patronized by seminarians. In 1952, the state decided to create a reservoir in the valley, deluging Alma and the nearby community of Lexington. While the new reservoir had little impact upon Alma College itself, it drastically altered the view from the ridge, now dominated by a large body of blue water, rather than vegetation (Page & Turnbull 2005).

In 1967, after 33 years at Alma College, the Jesuits decided to relocate the seminary to a new campus in Berkeley, so that the school might take part in the Graduate Theological Union of the University of California. The school actually moved in 1969, and in the fall of that year, the Jesuits began renting the property to a private boarding school. On Christmas Eve 1970, the Tevis house burned nearly completely. The Dormitory buildings were also demolished. The Jesuits continued to lease the property to a series of private schools until 1989 when it sold the land to Hong Kong Metro Realty (Page & Turnbull 2005). It has been indicated that other minor residential structures may have once been present at or near the former Alma College site, but those structures were not extant at the time MROSD purchased the property.

Bear Creek Stables

The Bear Creek Stables complex is located within the Bear Creek Redwoods Open Space Preserve, northeast of former Alma College. The Bear Creek Stables complex was initially constructed 1916-17 as the core of Dr. Harry Tevis' Alma Stock Farm and consists of three buildings: the stables, foreman's house, and cottage/office. The stables were constructed in 1916, the original portion of the foreman's house in 1917, and the office/cabin between 1917 and 1933. All three buildings have been periodically altered since their completion, mostly after 1950 (Knapp & VerPlanck Preservation Architects 2010).

Midpeninsula Regional Open Space District

Post-World War II was a time of rapid growth in the Bay Area. As tract housing and commercial development began to dominate the "Valley of Heart's Delight," concern for the preservation of the Midpeninsula's irreplaceable foothill and bayland natural resources mounted among open space advocates. MROSD was created by successfully placing a voter initiative, Measure R, on the ballot in 1972.

Measure R will preserve open space by creating the Midpeninsula Regional Park District (currently named the Midpeninsula Regional Open Space District). Open space is our green backdrop of hills. It is rolling grasslands - cool forests in the Coast Range - orchards and vineyards in the sun. It is the patch of grass between communities where children can run. It is uncluttered baylands where water birds wheel and soar, where blowing cordgrass yields its blessings of oxygen, where the din of urban life gives way to the soft sounds of nature. It is the serene, unbuilt, unspoiled earth that awakens all our senses and makes us whole again ... it is room to breathe.

At that time, the District was created in northwestern Santa Clara County. Fulfilling the conservationists' original dream to include portions of San Mateo County within the District's boundaries, the voters expanded the District in 1976 to include southern San Mateo County. And in 1992, the District further expanded by annexing a small portion of Santa Cruz County. In the fall of 1999, the upper 805 acres of Bear Creek Redwoods Open Space Preserve was originally acquired by Peninsula Open Space Trust (POST). That same year, MROSD acquired the lower 260 acres of the Preserve, which included former Alma College. In 2001, POST transferred the upper 805 acres to MROSD. With the final approval of the Coastside Protection Program on September 7, 2004, the District's boundary was extended to the Pacific Ocean in San Mateo County, from the southern borders of Pacifica to the San Mateo/Santa Cruz County line.

RECORDS SEARCH

Paleontology Records Search

A search of the University of California Museum of Paleontology database was conducted on August 6, 2015. Records of paleontological finds maintained by the University of California Berkeley Museum of Paleontology (2015) state that there are 186 localities at which fossil remains have been found in Santa Clara County. These occur in three major geologic formations: the Sobrante, Santa Clara, and Merced formations. The database did not list any paleontological resources in or near the Bear Creek Redwoods Open Space Preserve.

Native American Consultation

Native American consultation was initiated by MROSD on July 29, 2015. Ms. Lisa Bankosh of MROSD submitted a letter to the Native American Heritage Commission (NAHC) requesting a search of their Sacred Lands Inventory for information regarding cultural resources within the project area and the vicinity of the project. A response letter was received from NAHC, dated August 4, 2015 which indicated that the search of the Sacred Lands File failed to indicate the presence of cultural resources within the project area.

The NAHC response letter also provided a list of 11 tribal groups or individuals who may have knowledge of cultural resources in the area or may have an interest in the project. Letters were sent to each of the listed individuals on August 5, 2015. The letters provided a brief description of the current status of the project and requested input on cultural resources in the project area. No responses were received to these letters. In June 2016, Pacific Legacy, the archaeological consultant to the District on this project, resent the 2015 letter via email to each of the individuals on the NAHC list, along with a project area map, and followed up with phone calls. Six Native American representatives responded with comments including being kept informed of what Pacific Legacy's recommendations would be; general concern about where trails and horse impacts would be in relation to known sites; request for there to be both Native American monitors and archaeological monitors present for any earth-moving activities and that crews working on the project receive Cultural Sensitivity Training; and requesting confirmation that Pacific Legacy had consulted the Northwest Information Center (NWIC) for previously recorded sites. The results of these communications are summarized below in Table 4.4-2.

Native American Contact Name	Native American Contact Group	Date of Initial Letter	Date of Follow-up Phone Call/Email	Date(s) Reply Received	Comment
Rosemary Cambra	Muwekma Ohlone Indian Tribe of the SF Bay Area	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	None received.	Streich left voicemail message on 6/15/16, summarizing project and outreach effort.
Andrew Galvan	The Ohlone Indian Tribe	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	Conversation with Mr. Galvan on 6/15/16.	Mr. Galvan requested to know if a site list search had been done for the area, and Streich affirmed. He asked to be kept informed of what Pacific Legacy's recommendations would be, at which point he will consider and submit his feedback.
Ramonna Garibay	Trina Marine Ruano Family	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	Ms. Garibay replied/confirmed receiving email on 6/14/16.	Streich left voicemail message on 6/15/16, summarizing project and outreach effort.
Jakki Kehl	Ohlone/Costanoan	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/14/16.	Conversation with Ms. Kehl 6/14/16.	Ms. Kehl could not speak directly to the project, as she wanted time to review the letter and map, and also felt she could not respond meaningfully unless she knew the location and nature of the previously recorded sites. She requested to see copies of previously recorded Ohlone-related site records, along with the final report, and expressed general concern about where trails and horse impact would be in relation to known sites. Streich let her know via a subsequent follow-up email, that Pacific Legacy will pass on her request for site records to MROSD.
Edward Ketchum	Amah Mutsun Tribal Band	8/5/15	Email resending of 2015 letter on 6/14/16.	None received.	No phone contact available.
Valentin Lopez	Amah Mutsun Tribal Band	8/5/15	Email resending of 2015 letter on	Conversation with Mr. Lopez on 6/15/16.	Mr. Lopez expressed concern regarding the location of new trails to be built, that might be near springs, streams, caves, and previously documented sites. He was informed that

Table 4.4-2 Summary of Native American Consultation					
Native American Contact Name	Native American Contact Group	Date of Initial Letter	Date of Follow-up Phone Call/Email	Date(s) Reply Received	Comment
			6/14/16. Follow up call 6/15/16.		Pacific Legacy did not have specific information about trail locations at that time, but that his concerns would be noted. Mr. Lopez said he would review the emailed document and reply with any additional feedback.
Katherine Erolinda Perez	Northern Valley Yokuts, Bay Miwok	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	None received.	Streich left voicemail message on 6/15/16, summarizing project and outreach effort.
Ann Marie Sayers	Indian Canyon Mutsun Band of Costanoan	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	Conversation with Ms. Sayers on 6/15/16.	Ms. Sayers would like there to be both Native American monitors and archaeological monitors present for any earth-moving activities. Her request is for their monitors from Indian Canyon, who are OSHA certified.
Linda Yamane	Ohlone/Costanoan	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	None received.	Streich left voicemail message on 6/15/16, summarizing project and outreach effort.
Michelle Zimmer	Amah Mutsun Tribal Band of Mission San Juan Bautista	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	None received.	Streich left voicemail message on 6/15/16, summarizing project and outreach effort. Ms. Zimmer replied with the following response via email on 6/17/16: over the years they have heard from property owners and those who use the trails, that artifacts have been found, many near the creek; they recommend: 1. All crews working on the project receive Cultural Sensitivity Training; 2. All earth moving, including that which is or has been paved, is to have a qualified and trained Native American monitor present at all times; 3. An archaeological monitor with San Francisco Bay Area experience be present during all earth moving activity. In addition, they would like a copy of the original site records and a copy of all monitoring notes for all earth moving activities.
Irenne Zwierlein	Amah Mutsun Tribal Band of Mission San Juan Bautista	8/5/15	Email resending of 2015 letter on 6/14/16. Follow up call 6/15/16.	Conversation with Ms. Zwierlein on 6/15/16.	Ms. Zwierlein felt the project map supplied was not informative enough to facilitate feedback, but she would be reviewing it and will respond with concerns. She also requested confirmation that Pacific Legacy had consulted the Northwest Information Center for previously recorded sites.

Source: Compiled by Pacific Legacy 2016

Archaeological Resource Literature Review

On June 7, 2016, Pacific Legacy, Inc. conducted a record and information search at the NWIC of the California Historical Resources Information System. The record search area encompassed both the Preserve boundary and included a ½ mile buffer around the preserve (study area).

Cultural resource and study data was also provided by MROSD in the form of GIS location data, site forms, and previous studies. MROSD maintains in-house records regarding the confidential locations of all known cultural resources within its boundaries. MROSD has compiled this information over time through direct information provided by qualified archaeologists as well as a variety of reports and record searches that have been performed for many projects throughout MROSD's jurisdiction. This information was compiled with and compared to the data available at the NWIC and held by Pacific Legacy. For some resources there

were multiple and different locations, identifiers, and boundaries. These data were not field checked to confirm the accuracy of resource records and location data. The list of resources compiled in Tables 4.4-3 and 4.4-4 give primacy to the site identifier and location as provided by the NWIC. If this was not available, then the information was determined based on data included in MROSD GIS and in consultation with MROSD staff (Baldzikowski pers. comm. 2016). The record search consisted of a review of:

- ▲ the National Register of Historic Places (NRHP) Directory of Determinations of Eligibility, (National Park Service 2016);
- ▲ the NRHP and California Register of Historical Resources (CRHR) listings (2012 and Updates) (Office of Historic Preservation [OHP] 2016; State of California 2016);
- ▲ the California Historical Landmarks (State of California 2016);
- ▲ the California Points of Historical Interest listing (State of California 2016);
- ▲ the Office of Historic Preservation (OHP) Historic Property Data File (State of California 2012);
- ▲ the Caltrans State and Local Bridge Survey (State of California 2016); and
- ▲ Santa Clara County Heritage Resource Inventory (2016).

Beginning in the 1970s, a total of 42 studies have been conducted within the study area, 20 of which included portions of the project area. Two of these studies were listed on NWIC base maps; however, no additional information was available. The studies were primarily completed as part of timber harvest plans (THPs), investigations for the development of the Los Gatos Golf Course, oil drilling, Caltrans investigations and private property development and most were completed over 10 years ago. Approximately 75 percent of the project area has been subject to inventory survey at varying degrees of intensity. Table 4.4-3 summarizes the cultural resource investigations complete within the project area.

NWIC Study Number	Author	Date	Type	Results
S-5243	Edwards et al.	1979	Cultural Resource Survey	Positive
S-12291	Garaventa and Harmon	1989	Cultural Resource Survey	Negative
S-14259	Cartier	1992	Cultural Resource Survey	Positive (P-43-000088/CA-SCL-71/H, isolates)
S-16496	Clark	1994a	Cultural Resource Survey	Positive (P-43-000088/CA-SCL-71/H; P-43-000643/CA-SCL-760)
S-16626	Clark	1994b	Phase II Testing	Positive (P-43-000088/CA-SCL-71/H; P-43-000643/CA-SCL-760)
S-18896	Laffey and Detlefs	1995	Historical and Architectural Evaluation	Positive (Alma College District)
S-19331	Foster and Neff	1984	Cultural Resource Survey (THP)	Positive (P-43-000375/CA-SCL-369/H; Historic Site #1)
S-20478	Bourdeau	1998	Cultural Resource Survey	Negative
S-21247	Huff	1998a	Cultural Resource Survey (THP)	Positive (P-43-001132)
S-23553	Napton and Greathouse	2000	Site Specific Investigations (THP),	Positive (Multiple sites)
S-27485	Culver	2001a	Cultural Resource Survey (THP)	Positive (P-43-001521, P-43-001522)
S-33511	Leach-Palm et al.	2007	Cultural Resource Survey	Negative in Project Area
S-34397	Hildreth	2007a	Cultural Resource Survey (THP)	Positive (P-43-002020/CA-SCL-875)

Table 4.4-3 Previous Studies within Preserve Boundary				
NWIC Study Number	Author	Date	Type	Results
S-38430	Mikkelsen et al.	2001	Cultural Resource Survey	Negative in Project Area
--	Pacific Legacy	2010	Cultural Survey and CRHR Evaluation	Positive (Bear Creek/Tevis Stables)
--	Deis	2016	Preliminary Cultural Resources Review/Master Plan	Yes
--	Knapp Architects	2010	Phase I Assessment of Existing Conditions	Positive (Alma College Historic District)
--	Knapp and VerPlanck Preservation Architects	2010a	CRHR Evaluation	Positive (Bear Creek Stables)
--	Page and Turnbull	2005	Historic Resource Study	Positive (Alma College Historic District/Cultural Landscape)
--	PGA Design Landscape Architects	2015	Cultural Landscape Rehabilitation Plan	Positive (Alma College Historic District/Cultural Landscape)

In 1992, Cartier conducted a survey for the Los Gatos Golf Course Project. Cartier identified P-43-000088/CA-SCL-71/H, Resource Location # 1 (one location with two BRMs later recorded as P-43-000643/CA-SCL-760), Resource Location #2 (midden with fire cracked rock and a chert core), and two prehistoric lithic isolates (Resource Locations #3 and #4). Cartier did not document or update these resources on DPR forms. In 1994, Matthew Clark attempted to relocate these prehistoric resources (Clark 1994a). The two isolates and the midden site could not be relocated; however, P-43-000643/CA-SCL-760 and P-43-000088/CA-SCL-71/H were relocated and described.

Later that year, Clark conducted testing at P-43-0000643/CA-SCL-760 and P-43-000088/CA-SCL-71/H and resurveyed the area of Resource Location #2 (midden, FCR and chert core) (Clark 1994b). Clark's crew found no evidence of Resource Location #2 and the location was determined to be either misidentified or incorrectly mapped. Clark (1994b) conducted limited shovel testing around P-43-0000643/CA-SCL-760 and failed to identify prehistoric deposits around the bedrock mortars. The boulders in which the mortars are found have been arranged with other boulders in a semicircle as part of a historic period landscaping feature. The mortars are located on the side of the boulders indicating there are no longer in situ. Clark concluded that there is no evidence of a prehistoric site at this location and the mortars were likely moved from another location. Clark's limited test excavations at P-43-000088/CA-SCL-71/H did not reveal any subsurface prehistoric deposits in the vicinity of the bedrock mortars. He did encounter nineteenth century artifacts and noted numerous historic period disturbances to the site.

In 1995, architectural historians Laffey and Detlefs completed an historical and architectural evaluation for the Los Gatos Country Club that described the history of the area with a focus on the Tevis, Flood, and Alma College occupations. Their work resulted in the documentation of the buildings that comprise Alma College Campus Complex. Subsequent investigations by Knapp Architects (2010) and Page and Turnbull (2005 and 2015) have evaluated the district and evaluated the district as a cultural landscape (Page and Turnbull 2005, 2015). The results of these evaluations are described below.

Numerous surveys conducted for timber harvest plans have identified and documented cultural resources within the Project Area. Foster (1984) surveyed an area in the southern part of the Project Area and identified two historic period site, one a cabin site that was subsequently recorded as P-43-00375/CA-SCL-369/H and one that is a flat with ivy and no other evidence of artifacts that has not been formally recorded. In 1998, Huff surveyed a portion of the northwest corner of the project area for the Novitiate THP. Huff discusses nine resources that had been identified during the preharvest inspection (Huff 1998:3). The nine resources include: former Alma College, swimming pool, framed shed, leveled pad, pharmacy complex, tanks, road to Lexington, paired stone walls, and fire pit. Of these, Huff recorded the paired stone walls (P-

43-001132) and the pharmacy complex (P-43-001131) in 1998, whereas the other resources were not formally recorded because they would not be impacted by the timber harvest. All resources were avoided during the harvest activities.

In 2000, Napton and Greathouse conducted a site specific survey field checking known sites and recording or updating these resources that had been identified by Huff (2000) during a survey of the Bear Creek Redwoods THP, which include large portions of the project area. Napton and Greathouse (2000) recorded or prepared updates for nine historical resources and noted that three resources originally documented by Huff (2000) had been destroyed (BCR THP site # 2 historic refuse outside THP area; BCR THP site # 3 homestead water tank and refuse; and BCR THP site # 4 a shack). These resources included updates for P-43-000088, -000089, and -000375. They prepared new records for P-43-001222, -001223, -001224, -001225, -001226, and -001227. A 2007 survey conducted by Hildreth for the Summit (Lands of Holmes) THP identified and recorded P43-002020, a BRM. They did not relocate the unrecorded 1930s cabin site previously identified by Foster (1984). This survey included areas in the southern part of the Preserve.

Most of the cultural resource surveys note that the ground has poor visibility due to heavy duff. The results of the surveys in addition to data available from MROSD indicate that in addition to the formally recorded cultural resources within the project area, there is potential for undocumented historic period and prehistoric archaeological sites throughout the project area.

Known Resources

A total of 27 cultural resources have been previously recorded within the project area. These include 19 historic-era cultural resources; six prehistoric sites; and two multi-component sites, containing both historic and prehistoric constituents. The historic period resources include: a radio tower; roads; stables; refuse scatters; mining features; water conveyance and retention features; a residence; Alma College Cultural Landscape; bridges; agricultural features; landscaping features; and stone walls. The prehistoric sites include five bedrock mortar sites and one midden site. The majority of these cultural resources have not been evaluated for eligibility for the NRHP or CRHR. Table 4.4-4 summarizes all previously recorded cultural resources and their NRHP and CRHR eligibility status. The status column of the table uses the letter/number criterion references from the NRHP and CRHR, respectively (the CRHR and NRHP are described in more detail below in Section 4.4.2, “Regulatory Setting”).

Table 4.4-4 Historic and Archaeological Resources Previously Recorded in the Project Area				
Primary No./ Trinomial	Name	Description	Reference	Historic Resource Eligibility Status
Multi-Component Resource				
P-43-000088/ CA-SCL-71/H		Five sandstone bedrock outcrops and boulders containing 58 cupules and 19th century debris with a former pond, roadcuts and large redwood stumps. Disturbed.	Popovich 1973; Clark 1994a, b, c	Not Evaluated
P-43-000375/ CA-SCL-369/H	BCR THP#1 and #12	Historic period brick fireplace and rock foundation with refuse deposit and prehistoric bedrock milling outcrop.	Podozorski and Foster 1979; Napton, Greathouse, Kile, Her, Vazquez, Ravalli 2000b	Not Evaluated
Historical Resources				
P-43-003523	Alma College Historic District/ Cultural Landscape	Jesuit School of Theology. Includes multiple built environment and landscape features some of which have been individually recorded. Contributors include the classroom building, 1934 and 1950 library buildings, chapel, landscaping features of upper lake, brick alcove and picnic area. Non-contributing	Laffey 1995;Knapp Architects 2010; Page and Turnbull 2005, 2015	Recommended Eligible as a Cultural Landscape (Criterion A/1); not eligible as an historic district

Table 4.4-4 Historic and Archaeological Resources Previously Recorded in the Project Area

Primary No./ Trinomial	Name	Description	Reference	Historic Resource Eligibility Status
		resources include the radio tower, garage and residence.		
P-43-003524	Alma College Classrooms	1934 Swiss Chalet Style buildings.	Laffey 1995; Laffey and Detlefs 1995; Knapp Architects 2010	Recommended Eligible as a contributor to a Alma College Cultural Landscape
P-43-003525	Alma College Library	1934 library, western section of building.	Laffey 1995; Laffey and Detlefs 1995; Knapp Architects 2010	Recommended Eligible as a contributor to a Cultural Landscape
P-43-003526	Alma College Chapel/Sacristy	1909 library converted to chapel in 1934.	Laffey 1995; Laffey and Detlefs 1995; Knapp Architects 2010	Recommended Eligible as a contributor to a Alma College Cultural Landscape
P-43-003527	Garage and Residence	Two-story garage with living quarters.	Laffey 1995; Laffey and Detlefs 1995; Knapp Architects 2010	Not Eligible, Non-contributor to Alma College Cultural Landscape
P-43-000973	Radio Tower	Radio transmitter tower standing approximately 30 feet high with a metal ladder attached.	Laffey 1995a; Laffey and Detlefs 1995; Knapp Architects 2010	Not Eligible, Non-contributor to Alma College Cultural Landscape
P-43-000974	Picnic Area, Alcove and Upper Lake	St. Joseph's Shrine. Open area, a flight of three brick steps, a masonry rock wall, and an arched alcove and masonry pedestal built ca. 1920s. Part of Alma College Historic District.	Laffey 1995b; Laffey and Detlefs 1995; Maggit and Duval 20014; Page and Turnbull 2005; Knapp Architects 2010	Recommended Eligible as a contributor to a Alma College Cultural Landscape
P-43-000980	Alma College Bridge	Alma College Bridge over Briggs Creek, steel truss bridge	Laffey 1995c	Recommended Eligible (Criterion C/3)
P-43-000981	Bear Creek Stables/Tevis Ranch Stables	Historic period complex including a main residence, stables and an employee residence.	Laffey 1995d; Knapp and Verplank 2010; Vanderslice 2010a, b	Recommended Not Eligible
P-43-000982	Tripp Residence/ Dairy Ranch	A one-story gabled residence with a small wing that was part of the dairy for the Tevis estate.	Laffey 1995e (as cited in Pacific Legacy 2016)	Demolished
Historical-era Archaeological Resources				
P-43-001131	Pharmacy Complex	A roof-like wooden structure associated with a concrete and stone pier structure.	Huff 1998b (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001132	Paired Stone Walls	Two stacked stone walls that may be associated with a former late 1800s logging camp.	Huff 1998c (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001222	Iona School/ BCR THP #5	School grounds, leveled pads, a fenced yard with wooden retaining wall, and one concrete building.	Napton, Greathouse, Kile, and DeWitt 2000a; Napton and Greathouse 2000 (as	Not Evaluated

Table 4.4-4 Historic and Archaeological Resources Previously Recorded in the Project Area

Primary No./ Trinomial	Name	Description	Reference	Historic Resource Eligibility Status
			cited in Pacific Legacy 2016)	
P-43-001223	Rock Cribbing/BCR THP #7	The remains of a dry-laid rock abutment constructed north-south over a tributary of Webb Creek.	Napton, Greathouse, and Kile 2000b; Napton and Greathouse 2000 (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001224	Bridge Over Webb Creek/BCR THP #8	The remains of a wooden bridge with concrete footings and dry-laid rock abutments extending east-west over Webb Creek.	Napton, Greathouse, Kile, and DeWitt 2000c; Napton and Greathouse 2000 (as cited in Pacific Legacy 2016)	Demolished
P-43-001225	Water Tank and Flume of Webb Creek/BCR THP #9	A wooden water tank and the remains of a pipe/flume water conveyance system.	Napton, Greathouse, Kile, and DeWitt 2000d Huff 2000 (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001226	Grape Processing Shed//BCR THP #10	A wooden shed with corrugated metal roof used for grape packing in the 1930s by the former Alma College Jesuit novitiate. In poor condition.	Napton, Greathouse, Kile, Her, Vazquez, and Ravalli 2000d; Napton and Greathouse 2000 (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001227	BCR THP #14	Mining and residential features including a mine adit, dry-laid rock retaining wall, earthen ditch, palm trees, and a scatter of blue stucco.	Napton, Greathouse, Kile, and DeWitt 2000d Huff 2000 (as cited in Pacific Legacy 2016)	Not Evaluated
P-44-000403	Highway 35	Highway 35, post mile 0.02 to 17.12.	Berg and Mikesell 1999 (as cited in Pacific Legacy 2016)	Not Evaluated

Prehistoric Archaeological Resources

P-43-000089/ CA-SCL-72	Midden	Midden containing, chert and obsidian debitage and tools, groundstone, bone and shell in a road bed that intersects a former vineyard.	Smith 1973; Edwards 1979; Napton and Greathouse, Kile, Her, Vazquez, Ravalli 2000a; Napton and Greathouse 2000 (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-000376/ CA-SCL-370	Bedrock Mortars/ BCR THP #13	Two milling features exhibiting nine cups on a sandstone boulder and possible rock shelter.	Napton and Greathouse, Kile, Her, Vazquez, Ravalli 2000c; Napton and Greathouse 2000 (as cited in Pacific Legacy 2016)	Not Evaluated

Table 4.4-4 Historic and Archaeological Resources Previously Recorded in the Project Area				
Primary No./ Trinomial	Name	Description	Reference	Historic Resource Eligibility Status
P-43-000643/ CA-SCL-760	Bedrock Mortars/ Resource Area 1	Two sandstone boulders each containing one bedrock mortar, used in an historic period landscape design element. BRMs appear to be moved here from original location. No prehistoric deposit identified in shovel tests by Clark 1994.	Cartier 1992; Clark 1994; Clark and Porter 1995 (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001521	Bedrock Mortar	Possible bedrock mortar on a sandstone outcrop.	Culver 2001b (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-001522	Bedrock Mortar	Four bedrock mortars embedded in a sandstone outcrop.	Culver 2001c (as cited in Pacific Legacy 2016)	Not Evaluated
P-43-002020/ CA-SCL-875	Hollow Log Mortar	Two bedrock mortars on one slab of exposed sandstone.	Hildreth 2007b (as cited in Pacific Legacy 2016)	Not Evaluated

Note: ¹ The California Register of Historical Resources (CRHR) is described in more detail below in Section 4.4.2, Regulatory Setting.

Source: Pacific Legacy 2016

The buildings of Alma College (P-43-003523) have been evaluated numerous times and have been determined not eligible for the NRHP or CRHR because the buildings no longer retain sufficient integrity. The “Alma College Complex” remains listed on the Santa Clara County Heritage Resource Inventory. The listing includes the Alma College classroom building, auditorium (1950 library), chapel, utility garage, and 1934 library. In addition, the buildings and associated landscape features have been recommended eligible as a cultural landscape (Page and Turnbull 2005, 2015, Knapp 2010). These features are discussed in more detail below under “Built Environment.” The steel truss bridge (P-43-000980) has been recommended eligible for the NRHP and CRHR. The radio tower (P-43-000973), garage and residence (P-43-003527), Bear Creek Stables structures (P-43-000981) have been recommended not eligible (discussed below under “Built Environment”). Two of the recorded resources, Tevis dairy (P-43-000982) and the bridge over Webb Creek (P-43-001224) have been demolished.

Undocumented Resources

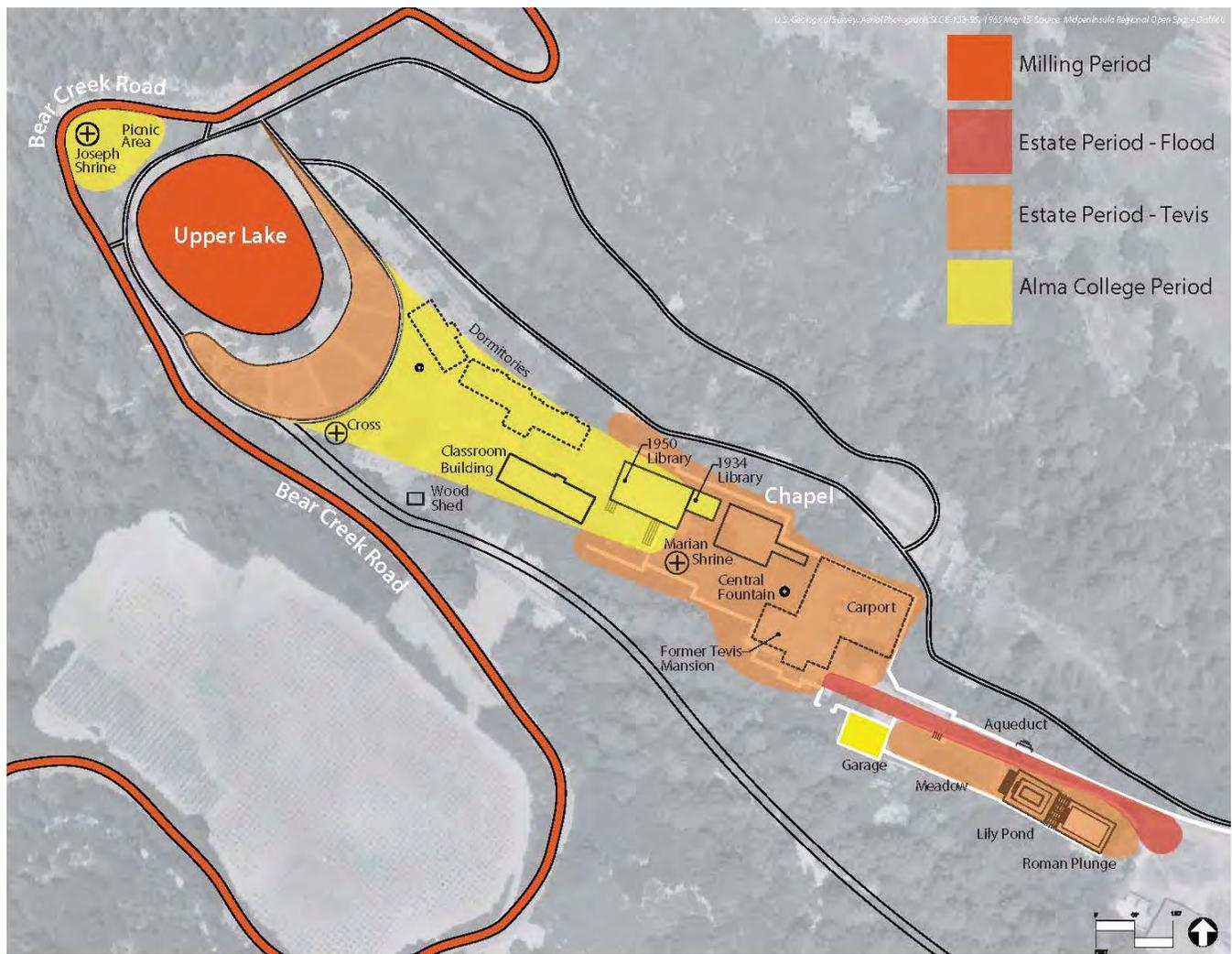
In addition to the previously recorded cultural resources, there are at 11 undocumented resources present within the project area. These resources have been previously identified by MRSOD personnel (Baldzikowski, pers. comm. 2016) and/or are noted in previous cultural resource investigations (Cartier 1992; Clark 1994a, b) but have never been formally recorded on DPR 523 forms or otherwise evaluated for NRHP or CRHR eligibility. All but one of these resources are historic-era archaeological sites. Many of these resources appear to be part of feature systems associated with Alma College. The sole prehistoric site was previously identified by Cartier in 1992, but could not be relocated during two subsequent attempts by Clark (1994a, b). In addition to the previously recorded resources above, the presence of these known but unrecorded resources is also an indication that there may be additional unidentified historic-era and prehistoric cultural resources within the Preserve. Table 4.4-5 lists the known, undocumented cultural resources within the project area.

Table 4.4-5 Undocumented Historic and Archaeological Resources Project Area				
Primary No./ Trinomial	Name	Description	Source	Resource Eligibility Status
Historic- Resources				
n/a	Cistern	Concrete Reservoir/Cistern associated with Flood/Tevis Estate	MROSD (Baldzikowski personal communication 2016)	Undocumented. Likely eligible for listing. Important contributing element to Tevis water system which is an important element identified for the cultural landscape portion of Preserve.
f/a	Pump House	Pump House North end of the lower lake.	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Smallest Dam	Historic waster system dams associated with Flood/Tevis Estate	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Small Dam	Historic waster system dams associated with Flood/Tevis Estate	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Big Dam	Historic waster system dams associated with Flood/Tevis Estate	MROSD (Baldzikowski personal communication 2016)	Undocumented
Historic-era Archaeological Resources				
n/a	Laundry Site	Remnant Development site - pad and possible laundry associated with Flood/Tevis Estate. Old creek crossing and old road.	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Village	20th century village remnants, associated with Flood/Tevis Estate, Alma College	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Dump	20th century dump, associated with Flood/Tevis Estate, Alma College	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	House Site/ Unknown/18	Reported location of a house site, possibly demolished. Flat with vinca in the vicinity	MROSD (Baldzikowski personal communication 2016)	Undocumented
n/a	Tea House	Tea house chimney	MROSD (Baldzikowski personal communication 2016)	Undocumented
Prehistoric Archaeological Resources				
n/a	Resource Location #2	Midden, SCR and Chert core.	Cartier 1992; Clark 1994a, b	Undocumented, not relocated by Clark in 1994
Source: Pacific Legacy 2016				

Built Environment

Alma College Cultural Landscape

The Alma College Cultural Landscape is defined as extending from Bear Creek Road near Upper Lake and including all features contained along the flat-topped ridge line to and including the site of the former Roman Plunge. The site is considered a cultural landscape because, viewed as a whole, it represents significant cultural themes in the development of California, from the lumber milling time to the country estate period of Dr. Tevis. Exhibit 4.4-2 shows the historical periods at the former Alma College site. Other associated features such as the village, vineyard, water infrastructure, etc., are not included as part of the former Alma College site, and have not been evaluated for their relative contribution to the cultural landscape.



Source: PGA Design 2015.

Exhibit 4.4-2

Alma College Site Historic Periods

The essential physical features of the Alma College Cultural Landscape that define its character (character-defining features) were identified in Knapp’s report (2010). These character-defining features contribute to the overall integrity of the cultural landscape to varying degrees. Some elements could be categorized under more than one type (i.e., the concrete fountain basin is both a water feature and a site feature), but are listed under only one category here for the sake of efficiency and readability. It should be noted that several of the character-defining features listed below are in severely deteriorated condition, but were found to contribute to the Alma College Cultural Landscape regardless, as they provide opportunities for interpretation and education (Page & Turnbull 2015). The character-defining features of the Alma College Cultural Landscape include:

- ▲ Topography

 - Brick and concrete retaining walls along north and south perimeters of project site
- ▲ Vegetation

 - Blue cedars along the east end of the plunge
 - Natural or scenic agricultural setting
 - Grapevines

- ▲ Circulation
 - Covered walkway along north façades of Chapel and Library buildings
 - East walkway from Chapel to Tevis House/Faculty Residence ruin
 - Brick stair leading from library level south of the fountain basin to garage level
 - Drive around lake
 - Bear Creek Road
 - Radial organization of elements around the upper lake
 - Carriage Road from the site of the main house to Route 17

- ▲ Water Features
 - Aqueduct
 - Upper Lake, including fountain and infrastructure (renovated in the 1920s)
 - Concrete Fountain Basin

- ▲ Structures, Site Furnishings, and Objects
 - Chapel (1909/1934)
 - Library (1934)
 - Library addition (1950)
 - Classroom Building (1934)
 - Garage (constructed at an unknown date, likely the 1940s)
 - Two dormitory buildings from the Jesuit campus period (only the foundations remain extant)
 - Tevis House/Faculty Residence ruin including carport structure
 - Wood shed
 - Boulder at Residence ruin
 - St. Joseph Shrine
 - Marian Shrine
 - Sequence of the Meadow/Lily Pond/Roman Plunge
 - Pergola with brick columns at the west end of the Roman Plunge terrace
 - Wooden Cross with semi-circular hedge
 - Flagpole
 - Wood posts

Chapel

The Chapel is a Swiss Chalet variation of the Craftsman style and is located between the 1934 Library and the remains of the main house. Some records suggest that portions of this building were initially built as part of the Flood barn, and later adapted by Dr. Tevis to serve as a free-standing library, but no physical evidence survives to indicate that this is true. In 1909, significantly renovated, or constructed anew by Trowbridge & Livingston, Dr. Tevis' library was a single-story building, largely square in plan, with a deep gable roof. In 1934, the Jesuits converted Dr. Tevis' Library to serve as the Chapel. Two small side chapels were added on both the north and south façades of the exterior of the building. The large stone fireplace along the south wall was removed, pews were installed and a raised altar was built at the west end of the main room. In later years, the building fell into disrepair, the pews were removed and the French doors broken and boarded over (see Exhibit 4.4-3). A large colony of bats now inhabits the chapel building.

Library Buildings

The original library building was constructed in 1934 and housed a 5,000-volume collection. Fire concerns encouraged the construction of the first floor in red brick, with a wood shingle-clad second story. The shingle roof had exposed wood eaves and two dormer vents. One-story shingle-sided additions were attached to the east and west façades of the Library, and a semi-enclosed vestibule with a spindle screen window sheltered the main door along the south façade. Early on during the Jesuit tenure, a covered walkway was built along the north side, between the Chapel and Library (see Exhibit 4.4-3).



Alma College Chapel, historic exterior view of south facade. The East Walkway to the Faculty Residence is shown at the right.



Tevis Library, historic exterior view of south and east facades with the original walkway to the Tevis House to the east (not shown).



The chapel.



The brick and shingle 1934 library with larger 1950 library to the right.

Source: MROSD 2010 and 2015

X15010027 01 028

By the late 1940s, the collection had outgrown this small building. A new, reinforced concrete addition was dedicated in November 1950. The 1950 library had a capacity of 110,000 volumes and included offices for the librarian and cataloguers, a reference room, microfilm and photocopying facilities, and seminar rooms. The addition resulted in the demolition of the one-story shingle-clad addition and the alteration of the brick wall on the west façade of the Library.

Classroom Building

Constructed in 1935, the long narrow building consists of two attached sections. To the west, an exterior arcade runs along the north side of the building, connecting a series of classrooms and looking out at what was once the mall for the campus. At the eastern end of the building, an enclosed space occupies the full footprint of the building. Over time, changes were made to the Classroom Building. On the exterior, asphalt shingles replaced the original wood shingles, and metal angle braces have been attached to the arcade capitals, suggesting an attempt at seismic reinforcement. Currently the west façade of the building is finished only with building paper and vertical wood battens, although it seems probable that this façade was originally finished with wood shingles similar to the other three sides of the building. The interior of the building has been more significantly altered. Partition walls have been demolished and finishes removed (see Exhibit 4.4-4).

Main House Foundation

The Main House burned down on Christmas Eve 1970, and today only the northeastern corner of the building survives. Constructed of brick, the remnant consists of one floor above grade and a two-story section that extends into the hillside along the north side of the campus. The surviving remnant was actually an addition to the east side of Tevis' original house, designed in 1920 by George Kelham and then altered in 1923 (see Exhibit 4.4-4).

Dormitories

Built by the Jesuits, the dormitories were located west and slightly north of the 1950 Library, angling progressively to the north to frame the spatial transition from the Upper Lake to the ridge top building cluster. The buildings no longer exist, but their basement walls and slabs remain in place, obscured by overgrown vegetation (see Exhibit 4.4-5).

Bear Creek Stables Complex

The Bear Creek Stables complex was initially constructed 1916-17 as the core of Dr. Harry L. Tevis' Alma Stock Farm. The stables were constructed in 1916, the original portion of the foreman's house in 1917, and the office/cabin between 1917 and 1933. After ranch foreman Reginald Theobald died in 1950, the stables complex was neglected for almost two decades. In 1968, new concessionaires Lester and Helen Porter began making various changes to the site and to individual buildings, including the demolition of a portion of the hay barn and its replacement with the double-height hay loft.

4.4.2 Regulatory Setting

FEDERAL

National Park Service

Among those statutes enacted by Congress that affect historic properties, the National Historic Preservation Act of 1966 (NHPA) is the most significant law that addresses historic preservation. One of the most important provisions of the NHPA is the establishment of the NRHP, the official designation of historical resources. Districts, sites, buildings, structures, and objects are eligible for listing in the Register. Nominations are listed if they are significant in American history, architecture, archeology, engineering, and culture. The NRHP is administered by the National Park Service. To be eligible, a property must be significant under criterion A through D (described below) and ordinarily be 50 years of age or more.



CLASSROOM - UNIT #3
ERECTED 1935

Alma College Classroom Building, historic view of north facade from the northeast.



Main House/Faculty Residence, historic exterior aerial view from the southeast.



Alma College Classroom Building, existing exterior view of north facade.



Main House/Faculty Residence ruin, retaining wall that supported a west portion of the house.

Source: MROSD 2010

X15010027 01 029



Alma College Dormitories, historic views of south facades.



Alma College Dormitory porch ruin, exterior view looking east.
The brick paving, stairs, and a few piers remain.

- A. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Are associated with the lives of persons significant in our past; or
- C. Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

A project is considered to have a significant impact when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. These seven aspects of integrity are described as:

- ▲ **Location.** Integrity of location refers to whether a property remains where it was originally constructed or was relocated.
- ▲ **Design.** Integrity of design refers to whether a property has maintained its original configuration of elements and style that characterize its plan, massing, and structure. Changes made after original construction can acquire significance in their own right.
- ▲ **Setting.** Integrity of setting refers to the physical environment surrounding a property that informs the characterization of the place.
- ▲ **Materials.** Integrity of materials refers to the physical components of a property, their arrangement or pattern, and their authentic expression of a particular time period.
- ▲ **Workmanship.** Integrity of workmanship refers to whether the physical elements of a structure express the original craftsmanship, technology and aesthetic principles of a particular people, place or culture at a particular time period.
- ▲ **Feeling.** Integrity of feeling refers to the property's ability to convey the historical sense of a particular time period.
- ▲ **Association.** Integrity of association refers to the property's significance defined by a connection to a particular important event, person or design.

Cultural Landscapes

Under the NRHP, historic properties may be defined as sites, buildings, structures (such as bridges or dams), objects, or districts, including cultural landscapes. A cultural landscape differs from a historic building or district in that it is understood through the spatial organization of the property, which is created by the landscape's cultural and natural features. Some features may create viewsheds or barriers (such as a fence), and others create spaces or "rooms" (such as an arrangement of buildings and structures around a lawn area). Some features, such as grading and topography, underscore the site's development in relationship to the natural setting. To be listed in the NRHP, a cultural landscape must meet one of the four evaluation criteria and must retain its integrity.

Character Defining Features

For a property to be eligible for national, state, or local designation under one of the significance criteria, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. The *Guidelines for the Treatment of Cultural Landscapes* (Guidelines) state that cultural landscapes are composed of a collection of features which are organized in space. Both landscape features and buildings and structures are able to convey the character of a cultural landscape. Other elements may include small-scale features such as individual fountains or statuary, or patterns of fields and

forests which define the spatial character. Some features may be more important than others. But overall, the Guidelines state that it is the arrangement and interrelationship of these character-defining features as they existed during the period of significance (POS) that is most critical to consider prior to treatment. (The POS is the span of time in which a property attained the significance for which it meets the NRHC or CRHR criteria.) Both the function and visual relationship between spaces is integral to the historic character of a property. In addition, per the Guidelines, it is important to recognize that spatial relationships may change over time due to a variety of factors, including: environmental impacts (e.g., drought, seismic activity), plant growth and succession, and changes in land use or technology.

Secretary of the Interior's Standards

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Secretary's Standards) provide guidance for working with historic properties. The Secretary's Standards are used by lead agencies to evaluate proposed rehabilitative work on historic properties. The Secretary's Standards are a useful analytic tool for understanding and describing the potential impacts of proposed changes to historic resources. Projects that comply with the Secretary's Standards benefit from a regulatory presumption that they would not result in a significant impact to a historic resource. Projects that do not comply with the Secretary's Standards may or may not cause a substantial adverse change in the significance of a historic property (Page & Turnbull 2015).

In 1992 the Secretary's Standards were revised so they could be applied to all types of historic resources, including landscapes. They were reduced to four sets of treatments to guide work on historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction (Page & Turnbull 2015). The four distinct treatments are defined as follows:

- ▲ **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
- ▲ **Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- ▲ **Restoration** depicts a property at a particular period of time in its history, while removing evidence of other periods.
- ▲ **Reconstruction** re-creates vanished or non-surviving portions of a property for interpretive purposes.

Typically, one set of standards is chosen based on the project. In this case, the Alma College Cultural Landscape Rehabilitation Plan (which is incorporated into the proposed Preserve Plan) is focused on adapting a historic property to a new use and user group. Additionally, the former Alma College site represents multiple eras of history that evolved in a vernacular fashion, responding to the needs of the tenants. Therefore, the *Standards for Rehabilitation* are applied (Page & Turnbull 2015). The specific standards are identified under Impact 4.4-1 (See Table 4.4-6).

The Guidelines for the Treatment of Cultural Landscapes

The Guidelines illustrate how to apply the four treatments detailed above to cultural landscapes in a way that meets the Standards. Per the Guidelines, a successful Rehabilitation will see that the character-defining features and materials of a historic landscape are protected and maintained, but a determination is made prior to work that a greater amount of existing historic fabric has become damaged or deteriorated over time, and as a result repair and replacement will be required. The Rehabilitation treatment also allows for the use of substitute materials in the replacement of historic features, and for a new contemporary use through alterations to existing features and compatible new construction (Page & Turnbull 2015).

The Guidelines also include special consideration for work that must be done to meet accessibility, health and safety, environmental protection, or energy efficiency requirements. Typically, work undertaken to meet these requirements is not part of the overall process of protecting cultural landscapes; rather, this work is assessed for its potential impacts on the cultural landscape (Page & Turnbull 2015).

STATE

California Register of Historical Resources

All properties listed in or formally determined eligible for listing in the NRHP are eligible for the CRHR. The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope and with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations (CCR) Title 15, Chapter 11.5, Section 4850. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

1. Is associated with events or patterns of 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.
2. Is associated with the lives of persons important to local, California, or national history.
3. 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.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP described above: location, design, setting, materials, workmanship, feeling, and association.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC, Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

- 1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC, Section 5024.1).
- 2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

- 3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1), including the following:
 - a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - b) Is associated with the lives of persons important in our past;
 - c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - d) Has yielded, or may be likely to yield, information important in prehistory or history.
- 4) The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code, Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

HEALTH AND SAFETY CODE, SECTIONS 7052 AND 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

CALIFORNIA NATIVE AMERICAN HISTORICAL, CULTURAL, AND SACRED SITES ACT

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American's remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

PUBLIC RESOURCE CODE, SECTION 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

ASSEMBLY BILL 52

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September of 2014, establishes a new class of resources under CEQA: “tribal cultural resources.” It requires that lead agencies undertaking CEQA review must, upon written request of a California Native American tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a NOP of an environmental impact report (EIR) or notice of intent to adopt a negative declaration or mitigated negative declaration. AB 52 also requires revision to CEQA Appendix G, the environmental checklist. This revision would create a new category for “tribal cultural resources.”

AB 52 currently applies to those projects for which a lead agency has issued a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration on or after July 1, 2015. As the NOP for this proposed project was issued on June 11, 2015, the requirements of AB 52 do not apply.

LOCAL

Midpeninsula Regional Open Space District Resource Management Policies

The Resource Management Policies document defines the policies and practices used by MROSD to protect and manage resources on MROSD lands. Chapter VI contains policies related to paleontological and geologic features while Chapter VIII addresses cultural resource management. Policies relevant to the Bear Creek Redwoods Preserve Plan are described below:

- ▲ **Policy GS-3:** Protect unique or exceptional geologic features from human damage.
 - Identify locations and document the condition of unique or exceptional geologic features (example: tafoni sandstone formations, serpentine outcrops, sag ponds).
 - Monitor such features to determine if action is needed to prevent or stop damage.
 - Control access to features requiring protection by informing visitors, placing signs and barriers, and enforcing restrictions.
 - Develop security protocols to limit availability and distribution of geographic information for geology and soil resources to protect sites from accidental destruction, looting, and vandalism.
- ▲ **Policy CR-1:** Maintain an inventory of cultural resources on District preserves.
 - Inventory and assess cultural resources throughout the District, including prehistoric and historic archaeological sites, structures, and cultural landscape features. The Cultural Resource Inventory should include a Geographic Information Systems database; however, access to this inventory must be restricted to District staff and qualified professionals, to the extent allowed by law to protect sites from looting and vandalism.

- Record cultural resources in the District's Cultural Resource Inventory when purchasing new property and perform research on previous uses of the property. Examples of research activities include performing a records search with the Northwest Information Center and consulting historic preservation organizations, previous residents, and descendants to gather local historical information.
- Complete archaeological site records for known unrecorded sites on District land and file reports with the Northwest Information Center.
- ▲ **Policy CR-2:** Address cultural resources in the development of preserve use and management plans.
 - Consult the Cultural Resource Inventory when planning projects that may have an impact on cultural resources in the project area.
 - Conduct appropriate reconnaissance measures, such as research or archaeological survey, early in the planning process for trail construction, disturbance in an area of known archaeological sensitivity. Monitor construction activities when appropriate.
 - Locate facilities, such as trails, staging areas, and new structures, to avoid loss or degradation of historically or archaeologically significant resources wherever possible. If not possible to avoid, minimize impacts, for example by: capping site, recording important features and/or artifacts, relocating structures, or data recovery excavation.
 - Include stakeholder groups when developing plans for the management of historically or archaeologically significant resources.
 - Consult with descendent communities such as Native American and other ethnic groups when developing plans for the management of historically or archaeologically significant resources related to their heritage.
 - Assess the significance, integrity, and feasibility of preservation of historic structures when developing Preserve Use and Management Plans or Master Plans. If a structure is determined to be eligible for the California Register of Historic Resources, assess feasibility of preserving the resource.
- ▲ **Policy CR-3:** Protect cultural resources from disturbance to the maximum extent feasible.
 - Wherever possible and appropriate, preserve historical resources and archaeological sites in situ.
 - Prohibit looting, vandalism, and unauthorized removal of cultural resources and associated artifacts from District preserves.
 - Implement security measures such as protective fencing and patrolling to reduce vulnerability of the resources due to vandalism and looting.
 - Develop security protocols to limit availability and distribution of geographic information for cultural resources to protect sites from looting and vandalism.
 - Prohibit District sale, purchase, or commercial trade of individual archaeological artifacts.
 - Develop and follow guidelines for reporting, protecting and recording archaeological sites and features in the event of unexpected discovery.
 - Provide District staff with basic training to identify and protect cultural resources.

- Assess existing operations within areas of known archaeological sensitivity to protect and preserve cultural resources.
- Require that all archaeological investigations or research activities that have the potential to physically significantly impact archaeological resources are carried out by qualified archaeologists, and that a technical report for each project is provided to the District following excavation.
- ▲ **Policy CR-4:** Preserve and maintain cultural resources wherever feasible.
 - Actively pursue grant assistance from local, state, federal, and other programs to supplement District funds to implement historic preservation projects for historically and archaeologically significant resources.
 - Seek partnerships with private or non-profit groups to aid in the restoration, management, and use of historic structures.
 - Assess the condition, identify needed repairs, and prepare maintenance plans for significant high priority historic structures as funds allow.
 - Assess the eligibility of cultural resources for nomination on local registers, the California Register of Historic Resources, and the National Register of Historic Places. Consider nomination to registers for which a resource is determined eligible.
 - Catalog artifacts associated with sites on District lands to prevent deterioration and to document the site and location where the artifacts were recovered. Consider curating artifacts in danger of deterioration. Maintain a cataloging system to preserve artifacts' contextual information and storage locations. Where appropriate, coordinate with other agencies and organizations to assist in long-term curation of District collections.
 - Develop and follow guidelines and procedures governing loans of artifacts to other agencies and organizations.

Santa Clara County General Plan

The Resource Conservation section of the Santa Clara County General Plan (Santa Clara County 1994) contains a number of goals and objectives related to the identification, protection, and enhancement of important cultural resources in the unincorporated areas of Santa Clara County. Strategies and policies that are applicable to the project include the following:

- ▲ **Policy C-RC 49.** Cultural heritage resources within Santa Clara County should be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic and place values.
- ▲ **Policy C-RC 50.** Countywide, the general approach to heritage resource protection should include the following strategies:
 1. Inventory and evaluate heritage resources.
 2. Prevent or minimize adverse impacts on heritage resources.
 3. Restore, enhance, and commemorate resources as appropriate.
- ▲ **Policy C-RC 51.** Inventories of heritage resources should be maintained as the basis for local decision-making regarding such resources.
- ▲ **Policy C-RC 52.** Prevention of unnecessary losses to heritage resources should be ensured as much as possible through adequate ordinances, regulations, and standard review procedures. Mitigation efforts,

such as relocation of the resource, should be employed where feasible when projects will have significant adverse impact upon heritage resources.

- ▲ **Policy C-RC 54.** Heritage resources should be restored, enhanced, and commemorated as appropriate to the value and significance of the resource.

4.4.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

The impact analysis considers the documented and undocumented cultural resource environmental setting in MROSD lands, the potential for discovery of other previously undocumented resources, including as of yet undiscovered components of the built environment, historic and prehistoric archaeological resources, human remains, and substantial adverse physical effects (i.e., disturbance, material alteration, demolition) to known and previously undocumented significant cultural and paleontological resources that could result from implementation of the project. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

The identification of cultural resources involves several steps, including: identifying resources within a project's boundaries; evaluating the resources to determine if they qualify as historical or archaeological resources; and determining the direct or indirect effects of the project on significant cultural resources. Resources found not to be "historically significant" need no further management.

In addition to construction-related impacts which can be readily identified, visitor-related impacts should also be considered in the instance of this project. Increased visitor use of the Preserve could expose cultural resources to effects caused by increased foot traffic, vandalism (intentional and unintentional), and looting. The potential to affect cultural resources will tend to be greater in areas within or proximate to trails, use areas, and other destination points within the preserve. Visitor-related impacts to cultural resource sites are not always as obvious or immediate as construction-related impacts and could include impacts that occur away from the proposed areas of disturbance.

The impact analysis for archaeological resources is based a review of documents on file with MROSD and an updated record search with NWIC of the California Historical Resources Information System. In addition, on April 21, 2016, qualified archaeologists from Pacific Legacy performed a reconnaissance-level survey. All known archaeological resources were visited though they were not formally recorded on DPR 523 forms. Because specific designs and layouts of trails and other facilities have not yet been finalized, the reconnaissance-level survey, which confirmed the presence/absence of archaeological sites, was appropriate. Resources identified during this reconnaissance were not evaluated to determine eligibility for listing in the NRHP or CRHR. These areas will require an additional evaluation report once precise locations of trails and facilities have been finalized.

This section includes a detailed analysis regarding potential impacts to the Alma College Cultural Landscape. This analysis is based on the *Alma College Cultural Landscape Rehabilitation Plan CEQA Historic Resource Technical Report* prepared by Page & Turnbull in December 2015 to evaluate the proposed rehabilitation of the Alma College Cultural Landscape. The report relied on information contained within other studies including, primarily, the *2005 Alma College Historic Resource Study* (also prepared by Page & Turnbull), *Alma College Site Cultural Landscape Rehabilitation Plan*, prepared by PGAdesign (2015), and the *Alma College Conditions Assessment Project Phase 1: Assessment of Existing Conditions* (Knapp 2010). The report uses the historic significance and identified character-defining features to analyze potential impacts under the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and the *Guidelines for the Treatment of Cultural Landscapes*. The analysis also included specific impacts and cumulative impacts pursuant to CEQA.

THRESHOLDS OF SIGNIFICANCE

Criteria for determining the significance of impacts related to cultural resources were based on the environmental checklist form in Appendix G of the State CEQA Guidelines and mandatory findings of significance. Adverse impacts to cultural resources would be considered significant if a project would:

- ▲ cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;
- ▲ cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines;
- ▲ directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- ▲ disturb any human remains, including those interred outside of formal cemeteries.

According to CEQA, a “project with an effect that may cause a substantial adverse change in the significance of an historic resource is a project that may have a significant effect on the environment.” Substantial adverse change is defined as: “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired.” The significance of an historical resource is materially impaired when a project “demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance” and that justify or account for its inclusion in, or eligibility for inclusion in, the California Register. Thus, a project may cause a substantial change in a historic resource but still not have a significant adverse effect on the environment as defined by CEQA as long as the impact of the change on the historic resource is determined to be less-than-significant, negligible, neutral or even beneficial (Page & Turnbull 2015).

In other words, a project may have an impact on a resource, and that impact may or may not impair the historic resource’s eligibility for inclusion in the California Register. If an identified impact would result in a resource that is no longer able to convey its significance and is therefore no longer eligible for the California Register, then it would likely be considered a significant impact. In cases where an impact is identified but the resource is still able to convey its significance and would therefore still be considered eligible for the California Register, it may be considered a less-than-significant impact, or less-than-significant impact with mitigation incorporated (Page & Turnbull 2015).

In addition, according to Section 15126.4(b)(1) of the Public Resources Code (CEQA), if a project adheres to the Secretary of the Interior’s Standards for the Treatment of Historic Properties, the project’s impact “will generally be considered mitigated below the level of a significance and thus is not significant” (Page & Turnbull 2015).

ISSUES NOT DISCUSSED FURTHER

All issues applicable to cultural resources listed under the significance criteria above are addressed in this chapter.

IMPACT ANALYSIS

Impact 4.4-1: Change the significance of a historic resource (cultural landscape).

The Rehabilitation Plan includes a variety of design features that, when incorporated, result in overall compliance with eight out of ten of the *Secretary of the Interiors Standards for Rehabilitation*. The alterations proposed in the Rehabilitation Plan would allow the site to convey its layered historic significance and retain its eligibility as a CRHR. Therefore, this impact would be **less than significant**.

As discussed above, a detailed historic context and evaluation of the Alma College Cultural Landscape was provided in Page & Turnbull's *Alma College Historic Resource Study* (Page & Turnbull 2005). The report found that the chapel appeared individually eligible for listing in the CRHR for its architectural significance (Criterion 3), but that the deteriorated condition of the site resulted in a loss of integrity of the historic district. The report stated that the site might be eligible for listing as a cultural landscape pending further research (Page & Turnbull 2015).

As part of initial planning efforts to open the property to public use, MROSD commissioned Knapp Architects' *Alma College Conditions Assessment Project: Phase 1: Assessment of Existing Conditions* (Knapp 2010). The report found that the former Alma College site is significant as a cultural landscape under Criterion 1 of the CRHR for its historical parallels with the broader events of California history. The report defined the POS for the Alma College Cultural Landscape as circa 1850 to 1951 and stated that although integrity has been compromised due to the loss of several buildings and features, lack of maintenance, and vegetation overgrowth, the former Alma College site retains sufficient integrity to express the layered periods of the site's history, including the Milling period (1850), Tevis Estate period (1906-1934), Alma College period (1934-1949), and the Later Alma College period (1950-1969). According to Knapp Architects' report, the extant structures and features, even those in ruin, still convey the cultural landscape's significance as remnants with interpretive value. However, the report also concluded that the chapel had by 2010 lost sufficient integrity such that it was no longer individually eligible for listing. Follow-up analysis confirmed this conclusion (PGA Design 2015).

In sum, the former Alma College site is a vernacular cultural landscape that is historically significant under CRHR Criteria 1 for its association with the broad events of California history (Page & Turnbull 2015).

The proposed Alma College Cultural Landscape Rehabilitation Plan (Rehabilitation Plan) (PGA Design 2015) is included in the proposed Preserve Plan. (For details, see Exhibit 3-5 in the Project Description.) The Rehabilitation Plan organizes treatment of the character-defining cultural landscape features into a unified whole. The goals and objectives of the Preserve Plan are as follows:

Goal AC1. Include protection of cultural resources, or mitigation for alteration and/or removal of such resources

- Obj AC-1.1 Study alternatives for protecting key structures and features
- Obj AC-1.2 Use Best Management Practices for preservation and/or removal of all structures and cultural landscapes

Goal AC2. Conform with National Park Service guidelines to rehabilitate cultural landscapes

- Obj AC-2.1 Ensure that restore/reuse/remove alternatives retain the distinctive features and spatial relationships of the potentially historic district
- Obj AC-2.2 Preserve the historic character of the property
- Obj AC-2.3 Preserve historic structures that retain integrity and significance to the cultural landscape

Goal AC3. Balance the District's mission with potential improvements and programs

- Obj AC-3.1 Explore alternative funding sources and partnership opportunities
- Obj AC-3.2 Consider potential revenue-generating programs that are consistent with the District's mission and could help support the improvements and long-term maintenance of the Alma College Cultural Landscape

As discussed under “Character Defining Features” in Section 4.4.2 above, for a property to be eligible for national, state or local designation under one of the significance criteria, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. The Guidelines state that it is the arrangement and interrelationship of these character defining features as they existed during the POS that are most critical to consider prior to treatment. As such, cultural landscape features should always be assessed as they relate to the property as a whole (Page & Turnbull 2015).

The proposed Rehabilitation Plan consists of many design features that would rehabilitate and interpret character-defining features of the cultural landscape. Rehabilitation of character-defining features such as vegetation, circulation, buildings, structures, and objects, and water features would include:

- ▲ stabilizing and potentially rehabilitating the 1909 Chapel (through a future partnership);
- ▲ stabilizing the 1934 Library structure and roof;
- ▲ establishing a vegetation management program that would retain contributing landscape vegetation, clear invasive plants, and install low-maintenance, drought-tolerant species to interpret the historic gardens;
- ▲ re-establishing the historic spatial enclosure by bringing the forest up to the edge of the developed site;
- ▲ rehabilitating the St. Joseph and Marion shrines, path systems, covered walkway, terracing, clay tile stairs, fountain basin, and the Lily Pond and Roman Plunge remains;
- ▲ closing the main road through the site to vehicle use and re-establishing it as the central pedestrian path;
- ▲ strengthening and stabilizing retaining walls, where feasible (public access would otherwise be prevented in wall failure hazard zones);
- ▲ rehabilitating the promenade around Upper Lake, and mimicking the radial pathways with native shrubs; and
- ▲ possibly stabilizing the mansion ruins (carport) for use as bat habitat.;

The Rehabilitation Plan also would alter or remove some features of the cultural landscape, including:

- ▲ demolishing the Classroom, Garage, and 1950 Library, buildings while possibly retaining their foundations

In addition, the Rehabilitation Plan would introduce new elements to the site to incorporate new visitor amenities and ensure public safety. These new elements would include:

- ▲ providing a new vehicular entry with adequate line-of-sight, and installing parking for up to 65 vehicles, potentially in two separate lots, near Upper Lake;
- ▲ introducing buffer shrub plantings along the south retaining wall, which cannot be strengthened, to prevent access;
- ▲ introducing new pedestrian circulation; providing for site security; and
- ▲ incorporating new visitor amenities such as restrooms, picnic tables, signage, and interpretive elements.

Analysis of the Rehabilitation Plan under the Secretary’s Standards for Rehabilitation shows that the elements of the proposed Rehabilitation Plan fully comply with Rehabilitation Standards 1, 4, 8, and 10; with

creation of a Preservation Maintenance or Monitoring Plan and an Interpretive Plan as required by the Rehabilitation Plan, the Rehabilitation Plan would comply with Standards 2, 3, 6, and 7; and the Rehabilitation Plan does not comply with Standards 5 or 9. The analysis is summarized in Table 4.4-6 below.

Table 4.4-6 Comparison of the Proposed Rehabilitation Plan to the Rehabilitation Standards		
Rehabilitation Standard	Analysis	Complies with Standard (Y/N)
1. A property will be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.	The Rehabilitation Plan does not require extensive new construction or alteration of the site and takes advantage of the existing environment. While the new use may require the insertion of new features such as picnic areas, accessible toilets, and security rails, it seems as though these interventions will require minimal change to the defining characteristics.	Y
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features and spaces that characterize a property shall be avoided.	The cumulative demolition of the Classroom, the Garage, and 1950 Library Addition buildings and the partial demolition of the 1934 Library will remove too many character-defining features resulting in an impact on the cultural landscape's spatial organization. Retention of their foundations will continue to define the layout of the landscape and guide circulation throughout the site, and an Interpretive Plan will help ensure the developmental history of the cultural landscape is conveyed.	Y with Interpretive Plan
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other buildings, shall not be undertaken.	Most of the character-defining features of the site will be stabilized and/or rehabilitated in place under the Rehabilitation Plan. The Plan does not propose to be move features around the site that could create a false sense of historical development. A Preservation Maintenance or Monitoring Plan is necessary to ensure that new construction is undertaken in a sensitive manner by working with qualified preservation professionals during the project implementation process.	Y with Preservation Maintenance or Monitoring Plan
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.	No one period of development is favored in the Rehabilitation Plan, as the elements of each era built upon the previous one. Per the project description outlined in the Rehabilitation Plan, the rehabilitation will allow the property to continue to be read as a layered historical landscape.	Y
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.	The partial demolition of several buildings, including the garage, the 1934 Library, and the Classroom building would result in the loss of character-defining features that also illustrate construction technique and craftsmanship. This is most evident in the proposed demolition of the 1950 Library, which is the only concrete modernist building on the former campus and therefore a unique example of construction technique and craftsmanship within the cultural landscape.	N
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.	The rehabilitation of specific elements within the cultural landscape may involve the repair and replacement of materials and features, requiring a Preservation Maintenance and Monitoring Plan. A Preservation Maintenance or Monitoring Plan is necessary to require that rehabilitation and repair methodologies abide by the Standards, and that qualified preservation professionals are involved in the design and review process to ensure that the Standards are adhered to on the individual project-level.	Y with Preservation Maintenance or Monitoring Plan
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, will be undertaken using the gentlest means possible.	The Plan does not include a detailed discussion of the chemical or physical treatments proposed for the rehabilitation of character-defining features. Such a level of detail is more appropriate to individual project planning and review during Plan implementation. Detailed treatments would be included in a Preservation Maintenance or Monitoring Plan.	Y with Preservation Maintenance or Monitoring Plan
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.	Archaeological resources were outside the scope of the Alma College Cultural Landscape Rehabilitation Plan. However, the Preserve Plan includes appropriate mitigation measures for both the unexpected discovery of Archaeological and Paleontological materials and the application of the Native American Burial Plan.	Y

Table 4.4-6 Comparison of the Proposed Rehabilitation Plan to the Rehabilitation Standards		
Rehabilitation Standard	Analysis	Complies with Standard (Y/N)
9. New additions, exterior alterations, or related new construction will not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale and architectural features to protect the historic integrity of the property and its environment.	The area where the parking surface is intended to be located is part of a larger system of lawns and paths that radiate out from the Upper Lake. This is a defining characteristic of the cultural landscape that dates to the Estate Period. The Rehabilitation Plan attempts to reduce the impact by shaping the parking surface to resemble the historic lawns, but the intervention is too noticeable and remains incompatible.	N
10. New additions and adjacent or related new construction shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.	The new construction outlined in the Rehabilitation Plan appears as if it could be removed without impacting the essential form and integrity of the historic property. The linear orientation of the site with a central terraced spine lined by buildings (or building foundations) remains apparent.	Y
Source: Compiled by Ascent 2015.		

The Rehabilitation Plan, which includes creation of a Preservation Maintenance or Monitoring Plan and an Interpretive Plan, would result in overall compliance with eight out of ten of the *Secretary of the Interiors Standards for Rehabilitation*. Projects that adhere to all of the Standards will generally be considered below the level of a significant impact. Because the Rehabilitation Plan does not adhere to all of the standards, even with the Preservation Maintenance or Monitoring Plan and Interpretive Plan, additional analysis is provided below to address whether the Rehabilitation Plan results in significant impacts to an historic resource (i.e., would the Rehabilitation Plan materially alter the physical characteristics of the cultural landscape that convey its historical significance in such a way that it would no longer be eligible for listing on the CRHR?). For a property to retain its eligibility for the CRHR, it must have both historic significance and sufficient integrity to convey that significance. Integrity is defined in this context as the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance (Page & Turnbull 2015).

As described above under “Regulatory Setting,” seven aspects of integrity are used to evaluate a resource’s ability to convey its historic significance, including location (meaning in this context to be the place where the historic resource was constructed), design, setting (meaning in this context to be the physical environment of the historic property inclusive of its landscape and spatial relationships), materials, workmanship, feeling (meaning in this context to be the historic resource’s expression of the aesthetic or historic sense of a particular period of time), and association (meaning in this context to be the direct link between the historic resource and an important event or person).

The Rehabilitation Plan includes overall physical changes to the cultural landscape, most notably expressed in the demolition to the foundation of the Classroom Building, the Garage, and the 1950 Library Addition, the partial demolition of the 1934 Library, and the proposed location of the new surface parking lot in an area of historic lawns. These alterations would result in diminished integrity of design, workmanship, and materials. However, as stated in the discussion of character-defining features in the “Regulatory Setting” section, the arrangement and the interrelationship of the features as they existed during the POS are critical to consider when formulating proposed treatment. In other words, elements or features must not be considered in isolation, but in relationship to the landscape as a whole. Thus, spatial organization and land patterns are listed first in the Guidelines (Page & Turnbull 2015).

As written, the Rehabilitation Plan maintains integrity of location, setting, feeling, and association given the proposed treatment of historic circulation patterns, the layout of landscape features (including the retention

of the foundations from the buildings proposed for demolition), and vegetative management. These features contribute more to the overall spatial organization and organization of features than do the individual buildings, and guide movement throughout the site. Additionally, the Rehabilitation Plan proposes retention of features from all eras of development during the POS (1850 to 1951), illustrating the historic land patterns of the property. The amount of change proposed would not adversely affect the property to the point where it can no longer convey its layered historic significance or where it would no longer be eligible for the CRHR as a cultural landscape; rather, most of the identified historic features would be retained, it would be read as a layered landscape with various past uses, and the proposed new construction is minimal and required for the change of use (Page & Turnbull 2015).

The impact resulting from the demolition of three buildings, the partial demolition of the 1934 Library, and the location of the new parking surface would be lessened by the extensive interpretation component already included in the Preservation Plan (Page & Turnbull 2015). While demolition is proposed for three of the items included in the character-defining features list, a great majority of the items are proposed for retention, stabilization, and/or rehabilitation. The Preservation Maintenance or Monitoring Plan and an Interpretive Plan would ensure that the rehabilitation and new construction posed under the Plan would comply with the Standards at the individual project level as projects are phased over time. Therefore, this impact is **less than significant**.

Mitigation Measures

None required.

Impact 4.4-2: Change the significance of a historical resource (Structures).

Many extant structures on the Preserve have been evaluated for eligibility for listing on the CRHR. Structures at Bear Creek Stables were found to be ineligible. The classroom, 1934 and 1950 library, chapel, and garage at Alma College have also been found ineligible for listing on the CRHR, nor is the site eligible as a historic district. However, the “Alma College Complex” remains listed on the Santa Clara County Heritage Resource Inventory; it was originally listed in 1995. The proposed project would result in the demolition of four buildings that are listed as part of the “Alma College Complex” on the Santa Clara County Heritage Resource Inventory. There are also other unevaluated historic-era structures, or structural remnants, that could be affected by the project. Demolition of historic resources would result in a **significant** impact because the historic resources would no longer exist.

As discussed previously, the Bear Creek Stables structures were evaluated for CRHR eligibility in 2010. The report concluded that if it retained integrity, the Bear Creek Stables complex would appear eligible for listing in the CRHR under Criterion 3 (design/construction) as a good example of a complex of elaborate rural ranch buildings. However, the complex does not appear eligible for listing in the CRHR due to extensive alterations that detract from the property’s historic appearance (Knapp and Verplanck 2010). Therefore, none of the buildings associated with the Bear Creek Stables are considered historic resources under CEQA.

Table 4.4-4 above lists structures and features within the Preserve, some associated with the Alma College Cultural Landscape but outside of the main site, that are not included in the Rehabilitation Plan. The Alma College Bridge is a steel truss bridge over Briggs Creek that has been evaluated and recommended eligible for the NRHP and CRHR under Criterion C/3 (design/construction). The bridge would be retained and stabilized (specific stabilization methods would comply with Secretary of the Interior’s Standards, or the bridge will be avoided), if necessary, as part of the Preserve Plan. Other features have not been formally evaluated for their individual eligibility for listing on the NRHP or CRHR, and construction or visitor use may impact these elements. Specific trail alignments, water pipeline alignments, and locations of other proposed features have not been finalized, and it is not certain whether the project could potentially affect these features. It is possible that some of these features may be eligible for listing and that the proposed project could result in adverse effects. Therefore, it is possible that implementation of the Preserve Plan could potentially adversely affect currently unevaluated, but potentially significant historical resources.

As discussed previously, Alma College has been documented and evaluated for historic significance on numerous occasions by various historic preservation professionals. The most relevant of these are the Santa Clara County Heritage Resource Inventory in 1995, the Page & Turnbull 2005 report, and the Knapp Architect's 2010 report.

A detailed historic context and evaluation of Alma College was provided in Page & Turnbull's *Alma College Historic Resource Study*, prepared in 2005 as part of initial planning efforts by MROSD for Bear Creek Redwoods Open Space Preserve. The report found that the Chapel building appeared individually eligible for listing in the CRHR for its architectural significance (Criterion 3); but other building were not eligible. Furthermore, the report found that the "Alma College Complex" did not have sufficient integrity to be eligible as a historic district, due to changes that had occurred prior to acquisition by MROSD. Although the site was determined to maintain integrity of location and workmanship, it had lost integrity of design (the Jesuit conversion of Dr. Tevis' library into the Chapel), materials (changes to interior of the Library and Chapel), setting (loss of Main House), and feeling (loss of Main House and Dormitories). Without the Main House or Dormitory buildings, it is not possible to understand the physical and spatial function of this assemblage of buildings. The site cannot be considered significant for its role as a Jesuit college if it can no longer be perceived as such.

Knapp Architects' *Alma College Conditions Assessment Project: Phase 1: Assessment of Existing Conditions*, was completed in 2010 and re-analyzed the site in its condition at the time. The report concluded that the Chapel was no longer individually eligible for listing on the CRHR, due to loss of integrity over time. The report also concurred with the Page and Turnbull 1995 report that, while the site is historically significant under Criterion 1 for its association with the founding of the first Jesuit seminary in the West, the site no longer retains sufficient integrity to be eligible for the CRHR as a historic district.

Although the former Alma College site has been evaluated and found ineligible as a historic district and the chapel has been determined to be individually ineligible for listing on the CRHR, the "Alma College Complex" remains listed on the Santa Clara County Heritage Resource Inventory. The listing includes the Alma College classroom building, auditorium (1950 library), chapel, utility garage, and 1934 library. The outbuildings are not included on the Santa Clara County Heritage Resource Inventory. Under State CEQA Guidelines Section 15064.5(a), historical resources include resources listed in a local register of historical resources. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant. Although repeated analysis has shown that the buildings are individually ineligible for listing on the CRHR, because the "Alma College Complex" is listed on the Santa Clara County Heritage Resource Inventory and the classroom and library buildings are character-defining features contributing to the Alma College Cultural Landscape, they are considered to be historical resources under CEQA.

The Rehabilitation Plan focuses on stabilization of the most structurally and architecturally intact buildings: Alma College Chapel and 1934 Library superstructure. The Chapel, the covered walkway, and the 1934 Library roof would be stabilized. The deteriorated walkway and stairs on the east side of the Chapel would be removed. The Rehabilitation Plan also includes maintaining the roof of the 1934 Library, with the interior becoming an open interpretive space. If a suitable partnership allows, the Chapel would be rehabilitated in compliance with the Secretary of the Interior's Guidelines. These buildings may be made available to a future partner for rehabilitation and re-use consistent with the MROSD mission, such as a visitor center or classroom. However, the Rehabilitation Plan includes demolishing the garage, 1950 library, and classroom. The buildings will be documented prior to removal, and will be interpreted allow the visitor to understand their former place in the Cultural Landscape, as described below:

Document Historic Buildings before Removal

Before demolition, all the buildings and important site features would be photographed to archival standards, and an archive assembled that includes past documents as well as the photographs. Because the Society of Jesus has a long reputation for scholarship and institutional history, it would be desirable to donate copies of new documentation to the Jesuit Archives in Berkeley to make them available to future researchers.

Interpretation of Buildings to be Demolished

The buildings identified for demolition contain features, materials, and artifacts of value. For this reason, a general survey and inventory would be conducted as an early task in the rehabilitation, with immediate salvage and storage of vulnerable items. The Rehabilitation Plan would interpret the location of the 1950 library on site by retaining the foundation walls level with grade, and the perimeter of the Classroom would be retained such that the footprint of the building would be clearly understandable. If feasible given its proximity to Webb Creek and the San Andreas Fault, the lower level of the Garage may be converted into an overlook, offering visitors a chance to understand the former structure. A robust interpretive plan would be implemented at the site, including signage, programming, and tours.

In addition, implementation of the Preserve Plan could adversely affect currently unevaluated historic resources as listed in Table 4.4-4, including remnants of the historic road and water system, the Iona School remains, rock walls, and other features. The Preserve Plan’s Implementation Table includes actions to reduce impacts to cultural resources, including known historic-era resources. Actions 1.1a through 1.1c and actions 1.2a through 1.2d are designed to reduce impacts to known and unknown cultural resources. The Preserve Plan will, in Phase I, ensure that evaluations are completed for all known and previously unevaluated historic resources. For resources deemed to be significant, recommendations will be developed to ensure that facility construction or visitor use does not impact the integrity of the resource. In addition to the Preserve Plan actions, Environmental Protection Measure CUL-1 (See Appendix C) includes proposed measures to provide further direction for implementing the previously stated actions. Table 4.4-7 below shows the treatment measures required in Environmental Protection Measure CUL-1 for each of the unevaluated resources. See Appendix C for more detail.

Table 4.4-7 Treatment for Unevaluated Historical Resources (Table CUL-1 from Appendix C)			
Primary No./ Trinomial	Name/Description	Preserve Plan Action	Treatment (if eligible for listing on NRHP or CRHR and eligibility is found to be potentially affected)
P-43-001131	Pharmacy Complex. A roof-like wooden structure associated with a concrete and stone pier structure.	Clean up as necessary for public safety.	If the historic evaluation report determines that this structure is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific treatment measures to ensure clean-up does not adversely affect the resource’s eligibility. This may include requiring restrictions on clean-up activities or avoidance of the structure by identifying alternate public safety measures (such as exclusion fencing).
P-43-001222	Iona School/ BCR THP #5. School grounds, leveled pads, a fenced yard with wooden retaining wall, and one concrete building.	Clean up as necessary for public safety.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources’ eligibility. This may include requiring restrictions on clean-up activities or avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
P-43-001226	Grape Processing Shed/BCR THP #10. A wooden shed with corrugated metal roof.	Clean up as necessary for public safety.	If the historic evaluation report determines that this resource is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources’ eligibility. This may include requiring restrictions on clean-up activities or avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing).
P-44-000403	Highway 35. Highway 35, post mile 0.02 to 17.12.	Preserve and Protect	If the historic evaluation report determines that this resource is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources’ eligibility.

Table 4.4-7 Treatment for Unevaluated Historical Resources (Table CUL-1 from Appendix C)			
Primary No./ Trinomial	Name/Description	Preserve Plan Action	Treatment (if eligible for listing on NRHP or CRHR and eligibility is found to be potentially affected)
n/a (undocumented)	Pump House. Pump House North end of the lower lake.	Clean up as necessary for public safety.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring restrictions on clean-up activities of avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a (undocumented)	Small Dam. Historic waster system dams associated with Flood/Tevis Estate	Clean up as necessary for public safety.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring restriction on clean-up activities or avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a (undocumented)	Big Dam. Historic waster system dams associated with Flood/Tevis Estate	Preserve and Protect; implement protective or safety improvements if necessary.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring restrictions on clean-up activities or avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a (undocumented)	Smallest Dam. Historic waster system dams associated with Flood/Tevis Estate	Clean up as necessary for public safety.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring restrictions on clean-up activities or avoidance of the feature(s) by identifying alternate public safety measures (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a (undocumented)	Cistern. Concrete Reservoir/Cistern associated with Flood/Tevis Estate.	Preserve and Protect; implement protective or safety improvements if necessary.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring no clean-up activities and avoidance of the feature(s) with alternate public safety measures that avoid effects to the feature(s) (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a	Tea House. Tea house chimney	Clean up as necessary for public safety.	If the historic evaluation report determines that one or more of these features is individually eligible for listing on the NRHP or CRHR, or is a contributing element to the Alma College Cultural Land scape, the report will establish specific measures to ensure clean-up does not adversely affect the resources' eligibility. This may include requiring no clean-up activities and avoidance of the feature(s) with alternate public safety measures that avoid effects to the feature(s) (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.

Although the Rehabilitation Plan includes elements to interpret the buildings to be demolished, the four buildings and that would be partially or entirely demolished are considered to be historical resources. Therefore, the Preserve Plan, including demolition activities of buildings associated with Alma College, would result in a **significant** impact.

Mitigation 4.4-2: Document historic buildings prior to removal.

The Preserve Plan includes documentation of buildings before demolition; however, because the buildings are considered historical resources, a higher level of documentation is necessary. MROSD will complete documentation of the classroom building, 1950 library, utility garage, and 1934 library, prior to any construction/demolition work initiated at these buildings. Documentation shall consist of a written history of the property and drawings and photographs, as described below.

- ▲ Written History. The Knapp Architects report, *Alma College Conditions Assessment Project Phase I: Assessment of Existing Conditions*, shall be used for the written history of each building. The report shall be reproduced on archival bond paper.
- ▲ Drawings and Photographs. An architectural historian (or historical architect, as appropriate) shall conduct research into the availability of plans and drawings of the classroom building, 1950 library, utility garage, and 1934 library as the buildings currently exist.
 - Drawings: select existing drawings, where available, may be photographed with large-format negatives or photographically reproduced on Mylar in accordance with the U.S. Copyright Act, as amended.
 - Photographs: photographs with large-format negatives of exterior and interior views, or historic views where available and produced in accordance with the U.S. Copyright Act, as amended

The documentation shall be prepared by an architectural historian, or historical architect as appropriate, meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards. The documentation shall be submitted to the Santa Clara County Library and the Jesuit Archives in Berkeley.

Significance after Mitigation

Implementation of Mitigation Measure 4.4-2 would lessen the impacts related to the loss of the classroom building, 1950 library, utility garage, and 1934 library, but the structures, which are listed on the Santa Clara Heritage Resource Inventory, would no longer exist. This impact is **significant and unavoidable**.

Impact 4.4-3: Cause a substantial change in the significance of an archaeological resource.

Implementation of the proposed project could cause a substantial change in the significance of an archaeological resource. Archaeological resources are known to exist on the project site. Some are documented, some are undocumented. Not all of the resources have been evaluated for eligibility for listing on the state or national register. The existence of these resources suggests that there is potential that unknown archaeological resources also exist on the project site. Also, project-related ground-disturbing activities could cause a substantial change in the significance of an as yet undiscovered archaeological resource as defined in CEQA Guidelines Section 15064.5. Implementation of MROSD's Resource Management Policies and environmental protection measures would minimize impacts to archaeological resources. This impact is **less than significant**.

Multiple surveys have been performed throughout the Plan Area. However, while portions of the Plan area have been subject to archaeological survey, most of the archaeological resources have not been evaluated. Further, portions of the Plan area have not been subject to archaeological resources surveys. The previously documented and undocumented historic-era and prehistoric archaeological resources within the Plan area are described above. As shown in Table 4.4-4, there are no archaeological resources within the Plan area that have been

evaluated as eligible for the NRHP or CRHR. Damage to a previously unknown NRHP and/or CRHR eligible component of this resource would be a significant impact. As stated above in Impact 4.4-2, the Preserve Plan's Implementation Table includes actions to reduce impacts to cultural resources, including known archaeological resources. Actions 1.1a through 1.1c and actions 1.2a through 1.2d are designed to reduce impacts to known and unknown cultural resources. The Preserve Plan will, in Phase 1, ensure that evaluations are completed for all known and previously unevaluated archaeological resources. For resources deemed to be significant, recommendations will be developed to ensure that facility construction or visitor use does not impact the integrity of the resource. In addition to the Preserve Plan actions, Environmental Protection Measure CUL-1 (See Appendix C) includes proposed measures to provide further direction for implementing the previously stated actions. Table 4.4-8 below shows the treatment measures required in Environmental Protection Measure CUL-1 for each of the unevaluated resources. See Appendix C for more detail.

Table 4.4-8 Treatment for Unevaluated Archaeological Resources (Table CUL-2 from Appendix C)			
Primary No./ Trinomial	Name/Description	Preserve Plan Action	Treatment (if resource is found to be adversely affected and eligible)
P-43-000088/ CA-SCL-71/H	Five sandstone bedrock outcrops and boulders containing 58 cupules and 19th century debris with a former pond,	Preserve and protect bedrock outcrops and boulders. Clean up historic-era debris as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility. This may include requiring avoidance of features, restrictions placed on clean-up activities, or data recovery.
P-43-000375/ CA-SCL-369/H	BCR THP#1 and #12. Historic period brick fireplace and rock foundation with refuse deposit and prehistoric bedrock milling outcrop.	Preserve and protect prehistoric features. Clean up historic-era features as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility. This may include requiring avoidance of features, restrictions placed on clean-up activities, or data recovery.
P-43-001132	Paired Stone Walls. Two stacked stone walls that may be associated with a former late 1800s logging camp.	Preserve and Protect; implement protective or safety improvements if necessary	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the structure (such as exclusion fencing).
P-43-001223	Rock Cribbing/BCR THP #7. The remains of a dry-laid rock abutment constructed north-south over a tributary of Webb Creek.	Preserve and Protect	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.
P-43-001225	Water Tank and Flume of Webb Creek/BCR THP #9. A wooden water tank and the remains of a pipe/flume water conveyance system.	Clean up as necessary for public safety.	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing).

Table 4.4-8 Treatment for Unevaluated Archaeological Resources (Table CUL-2 from Appendix C)			
Primary No./ Trinomial	Name/Description	Preserve Plan Action	Treatment (if resource is found to be adversely affected and eligible)
P-43-001227	BCR THP #14. Mining and residential features including a mine adit, dry-laid rock retaining wall, earthen ditch, palm trees, and a scatter of blue stucco.	Clean up as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion as fencing).
P-43-000376/ CA-SCL-370	Bedrock Mortars/ BCR THP #13. Two milling features exhibiting nine cups on a sandstone boulders and possible rock shelter.	Preserve and Protect	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.
P-43-000643/ CA-SCL-760	Bedrock Mortars/ Resource Area 1. Two sandstone boulders each containing one bedrock mortar, used in an historic period landscape design element. Mortars were likely moved from another location as no prehistoric deposit identified in shovel tests by Clark 1994.	Per the Alma College Rehabilitation Plan, re-use boulders as part of visitor entrance design	No treatment required, MROSD will prepare a memo to file documenting the specific location where the mortars are moved.
P-43-001521	Bedrock Mortar. Possible bedrock mortar on a sandstone outcrop.	Preserve and Protect	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.
P-43-001522	Bedrock Mortar. Four bedrock mortars embedded in a sandstone outcrop.	Preserve and Protect	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.
P-43-002020/ CA-SCL-875	Hollow Log Mortar. Two bedrock mortars on one slab of exposed sandstone.	Preserve and Protect	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.
n/a	Laundry Site. Remnant Development site - pad and possible laundry associated with Flood/Tevis Estate. Old creek crossing and old road.	Clean up as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.

Table 4.4-8 Treatment for Unevaluated Archaeological Resources (Table CUL-2 from Appendix C)			
Primary No./ Trinomial	Name/Description	Preserve Plan Action	Treatment (if resource is found to be adversely affected and eligible)
n/a	Village. 20 th century village remnants, associated with Flood/Tevis Estate, Alma College	Clean up as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery and the report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a	Dump. 20 th century dump, associated with Flood/Tevis Estate, Alma College	Clean up as necessary for public safety.	If the archaeological evaluation report determines that one or more of these features are eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing). If the report determines that the structure is a significant contributing element of the Alma College cultural landscape, the resource will be included in the Preservation Maintenance or Monitoring Plan.
n/a	House Site/ Unknown/18. Reported location of a house site, possibly demolished. Flat with vinca in the vicinity	Clean up as necessary for public safety.	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing).
n/a	Tea House. Tea house chimney	Clean up as necessary for public safety.	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will identify specific measures to ensure that preservation, as well as any safety improvements do not adversely affect the resources' eligibility. This may include requiring avoidance of the feature(s) or data recovery. The report may identify alternate public safety improvements that do not affect the feature(s) (such as exclusion fencing).
n/a	Resource Location #2. Midden, SCR and Chert core along Bear Creek.	Preserve and Protect	If the archaeological evaluation report determines that this feature is eligible for listing on the NRHP or CRHR, the report will establish specific measures to ensure preservation and protection treatments do not adversely affect the resources' eligibility.

In addition to the unevaluated and undocumented resources known within the project site, the potential exists to encounter previously undiscovered or unrecorded archaeological sites and materials during project-related preconstruction or construction-related ground disturbing activities. If such resources were to represent “historical resources” or “unique archaeological resources” as defined by CEQA, any substantial change to or destruction of these resources would be a potentially significant impact. For these reasons, the project could result in the damage or destruction of a known or as yet undiscovered archaeological resource.

MROSD has developed Resource Management Policies to protect known and undiscovered archaeological resources. The proposed Preserve Plan would comply with Policies CR-2 and CR-3, which require (among

other measures) reconnaissance surveys; construction monitoring; avoidance (wherever possible) of loss or degradation of significant cultural resources (or, if avoidance is not feasible, minimization measures such as capping, recording, relocating proposed features, or data recovery); stakeholder outreach (including outreach to descendent communities such as Native American and other ethnic groups); preservation of cultural resources in situ; prohibiting vandalism, looting, and unauthorized removal of cultural resources; and implementing security measures (e.g. protective fencing and patrolling). MROSD's Resource Management Policy CR-3 also requires that MROSD staff receive training in the recognition of cultural resources. CR-3 provides for the identification, evaluations, assessment of effects, and mitigation of effects to previously documented, undocumented, and as of yet undiscovered cultural resources. In addition, CR-3 calls for the assessment of existing operations within areas of known archaeological sensitivity to protect and preserve cultural resources. However, due to the high level of archaeological sensitivity of certain portions of the project site, an additional measure is included as environmental protection measure CUL-2 (See Appendix C) that requires coordination with tribes to seek monitoring by tribal representatives during construction and provides very specific minimization actions in the case that a resource is identified. For these reasons, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 4.4-4: Disturb human remains.

Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains, if they are present. This impact would be **potentially significant**.

Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or unmarked human interments are present within or in the immediate vicinity of the project site. However, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site, and could be uncovered by project-related construction activities.

The location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Construction activities could uncover previously unknown human remains, which could be archaeologically or culturally significant.

Although there are no known prehistoric or early historic interments on the project site, project-related construction activities could uncover or otherwise disturb previously undiscovered or unrecorded human remains. Because any disturbance of human remains would be a significant impact, this impact would be **potentially significant**.

Mitigation 4.4-4: Halt ground-disturbing activity.

If human remains are encountered, all work within 100 feet of the remains will cease immediately. MROSD will contact the Santa Clara County coroner to evaluate the remains and follow the procedures and protocols set forth in §15064.5(e) of the CEQA Guidelines. No further disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains will occur until the County Coroner has made a determination of origin and disposition, which will be made within two working days from the time the Coroner is notified of the discovery, pursuant to State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98. If the remains are determined to be Native American, the Coroner will notify NAHC within 24 hours, which will determine and notify the Most Likely Descendant (MLD). The MLD may recommend within 48 hours of their notification by the NAHC the means of treating or disposing of, with appropriate dignity, the human remains and grave goods. In the event of difficulty locating a MLD or failure of the MLD to make a timely recommendation, the human remains and grave goods shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Significance after Mitigation

Implementation of this mitigation measure would reduce impacts associated with the discovery of human remains to a **less-than-significant** level because it requires the performance of professionally accepted and legally compliant procedures in the event remains are discovered.

Impact 4.4-5 Potential impacts to archaeological resources due to increased visitor use

Increased visitor use associated with implementation of the Preserve Plan, including development of new trails and visitor serving facilities, could place people in the vicinity of documented and undocumented archaeological resources. This could result in disturbance of archaeological sites as well as vandalism and looting. Implementation of MROSD's Resource Management Policies and environmental protection measures would minimize visitor-related impacts to cultural resources. This impact is **less than significant**.

Potentially significant impacts to archaeological resources may occur to previously documented, undocumented, and, as of yet undiscovered archaeological sites due to increased visitor use within the Preserve. The potential to affect archaeological resources will tend to be greater in areas within or proximate to trails, use areas, and other destination points within the Preserve. These visitor-related impacts to archaeological resource sites are not always as obvious or immediate as construction-related impacts and could include impacts that occur outside of the areas designated for public use. Visitor-related impacts could include accelerated erosion due to increased foot traffic, loss or changes of vegetation which protect archaeological resources, changes in drainage patterns, and vandalism. In particular vandalism could also result in piecemeal or incremental loss or degradation of the various elements of archaeological resources integrity such as setting, feeling, or location.

Further, construction of Preserve facilities near identified archaeological sites could increase visibility of the resources that are located within construction zones. MROSD would ensure that all of its personnel, and the personnel of its contractors, are directed not to engage in the illegal collection or destruction of prehistoric materials. This protection measure would reduce, but not completely eliminate, the potential for illegal collecting of artifacts and inadvertent damage to archaeological sites.

MROSD's Resource Management Policy CR-3 requires that MROSD staff receive training in the recognition of sensitive cultural resources; provides for identification, evaluation, and mitigation of known, undocumented, or as of yet undiscovered cultural resources; and requires patrol and security protocol for minimizing looting and vandalism. It is especially important for staff to become familiar with cultural resources within the preserve and periodically monitor their condition with regard to indirect impacts. In addition to compliance with Resource Management Policy CR-3, implementation of Environmental Protection Measure CUL-1 (Appendix C) would further avoid damage caused by visitor use by providing appropriate buffers between significant resources and visitor facilities. Impacts would therefore be **less than significant**.

Mitigation Measures

None required.

Impact 4.4-6: Destroy a unique paleontological resource.

No paleontological resources are known to occur within the project site or a one-mile radius of the site. However, because paleontological sites have been recorded in Santa Clara Formation sediments, earth-disturbing activities could potentially damage previously unknown paleontological resources. Resource Management Policy CR-3 requires that MROSD staff receive training in the recognition of sensitive cultural resources and that in the event of a find, work in the area is halted until a qualified archaeologist can evaluate the significance of the find; Resource Management Policy GS-3 calls for the protection of paleontological resources by identifying locations and documenting the condition of unique or exceptional geologic features. Therefore, this impact would be **less than significant**.

The project area is mapped as Tertiary age (65 million to 5.3 million years old) rocks of various formations - the Rices mudstone, San Lorenzo shale, Vaquerous sandstone and upper Mesozoic age rocks of the Franciscan Assemblage which are overlain by interbedded conglomerate, sandstone, siltstone, and shale of the Tertiary to Pleistocene age Santa Clara Formation. A search of the UCMP database did not list any paleontological sites of any kind near the project site; however, the search revealed that Pleistocene vertebrate fossils have been recovered from similar sediments as those in the project site (Santa Clara Formation) throughout Santa Clara County.

Construction activities may include removal of existing Alma College buildings and the stable and barn facilities at Bear Creek Stables, removal of existing trees, site preparation (e.g., excavation, grading, and vegetation clearing), trail construction, structure erection, and new parking areas. While it is possible that previously undiscovered paleontological resources could be disturbed, MROSD's Resource Management Policy CR-3 requires that MROSD staff receive training in the recognition of sensitive cultural resources and that in the event of a find, a qualified archaeologist will evaluate the significance of any discovered cultural resources before commencement or recommencement of work. In addition, MROSD Resource Management Policy GS-3 calls for the protection of unique or exceptional geologic features (which include paleontological resources) by identifying locations, documenting, and monitoring the condition of unique or exceptional geologic features. Policy GS-3 also identifies security protocols to protect sites from accidental destruction, looting, and vandalism. For these reasons, this impact would be considered **less than significant**.

Mitigation Measures

None required.

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4.5 GEOLOGY, SOILS, AND SEISMICITY

This section identifies existing geologic, soils, and seismicity characteristics of the Preserve and regulations applicable to the Preserve Plan, and evaluates both the potential effects of geologic and soil hazards on the proposed land use, and the potential for the project to effect soil resources. The assessment is based largely on a geologic hazards assessment report and addendum prepared by Questa Engineering in 1995, an assessment of geologic conditions and structures on the former Alma College campus prepared by Knapp Architects in 2010, and a road and trail inventory completed in 2010 by Timothy Best.

No comments pertaining to geology, soils, and seismicity were received during public review of the Notice of Preparation for the proposed project

4.5.1 Environmental Setting

The Preserve is located near the northeastern base of the central Santa Cruz Mountains, with two small areas at the extreme south end of the preserve extending over the summit to the western slope. This is a geologically-active region of California that is dominated by the northwest-southeast trending San Andreas Fault Zone that transects the project site (Exhibit 4.5-1). Movement along the San Andreas Fault has formed a series of classic linear valleys, pressure ridges, and sag ponds (Best 2010).

The Preserve is currently open space that is primarily evergreen forest with limited day-use hiking and equestrian access. There are several intermittent and perennial creeks that run through the Preserve including Dyer, Briggs, Webb, and Aldercroft Creeks, as well as three ponds. There are over 23 miles of roads and trails on the Preserve that have been used for various land management activities.

TOPOGRAPHY

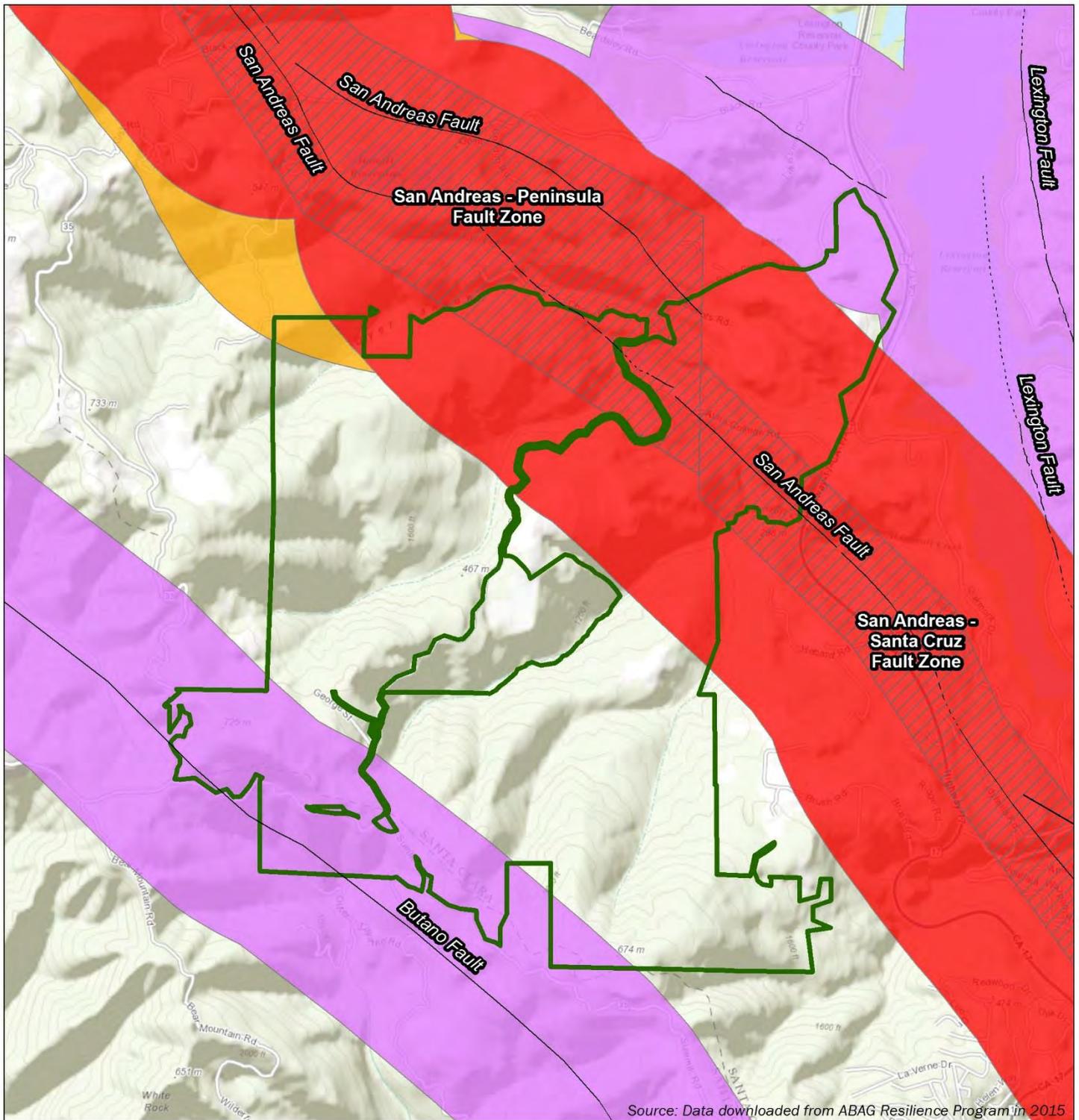
Much of the preserve consists of steep, rugged terrain; although the terrain is gentler in the northeastern portion of the Preserve. Elevations range from approximately 680 to 2,400 feet. Slopes range from 0 percent in the northeast corner of the site to more than 50 percent in several areas, most commonly in the southwestern corner.

GEOLOGY

The project site lies atop two types of bedrock—one southwest of the San Andreas Fault, and one northeast of the fault. The bedrock found southwest of the fault consists of rocks from the Tertiary age (primarily marine sediments including sandstone, mudstone, and shale). Undisturbed rocks include Vaqueros Sandstone, San Lorenzo Formation, and Butano Sandstone overlain by landslide deposits (Brabb et al. 2000, McLaughlin et al. 2001, and Wieggers and Bott 2005, as cited in Best 2010). The bedrock is highly fractured and sheared because of its location within and adjacent to the San Andreas Fault Zone (Best 2010). To the northeast of the fault lie older rocks of the Franciscan Complex, a composition of Jurassic- and Cretaceous-age rocks.

FAULTS AND SEISMICITY

The greater San Francisco Bay Area is recognized by geologists and seismologists as one of the most active seismic regions in the United States. The three major faults that pass through the Bay Area in a northwest direction have produced approximately 12 earthquakes per century strong enough to cause structural damage. The faults causing such earthquakes are part of the San Andreas Fault system, a major rift in the earth's crust that extends for at least 700 miles along the California Coast, and includes the San Andreas, Hayward, and Calaveras fault zones (Knapp 2010).



Legend

-  Bear Creek Redwoods Preserve
-  Alquist Priolo Earthquake Fault Zones

- Fault Classification**
-  Fault along which historic (last 200 years) displacement has occurred
 -  Holocene fault displacement (during past 11,700 years) without historic record
 -  Quaternary fault (age undifferentiated)



Basemap: ESRI 2015
G15010027 01 002

The San Andreas Fault marks the divide between the North American and Pacific Ocean Tectonic Plates. The interaction between the plates results in potential for seismic-related activities and has caused major historical earthquakes (including in 1838, 1865, 1906, and 1989). Two fault zones associated with the San Andreas Fault cross the site: the San Andreas-Peninsula and the San Andreas-Santa Cruz. In addition, the Butano Fault crosses the southwest corner of the Preserve. This fault, as well as the Lexington Fault located northeast of the Preserve are of Quaternary age (see Exhibit 4.5-1).

Seismic Ground Shaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Areas that tend to be subject to the greatest acceleration forces are ridgelines in the immediate vicinity of the fault that ruptures during an earthquake (Santa Clara County 1994: P-16). The Preserve is subject to high ground acceleration associated with earthquakes (Best 2010). During its history, the site has been subjected to strong ground shaking from moderate to large earthquakes on the Hayward, Calaveras, San Andreas, and other nearby potentially active faults, and future very strong ground shaking should be expected during a major earthquake on these faults (Knapp 2010).

Modified Mercalli Intensity Scale

The Modified Mercalli Intensity (MMI) scale estimates the intensity of shaking from an earthquake at a specific location, or over a specific area, by considering its effects on people, objects, and buildings. At high intensities (i.e., $MMI \geq 6$) earthquake shaking damages buildings. The severity of the damage depends on the building type, the age of the building, and the quality of the construction. Masonry and non-ductile concrete buildings can be more severely damaged than wood-frame or engineered buildings. Buildings built to older building codes can be more severely damaged than recently constructed buildings using newer codes (Association of Bay Area Governments [ABAG] 2013).

The project site is in an area where an earthquake with an intensity of MMI 9 is anticipated to occur in any 50-year period, based on probability information and the composite shaking hazard from all possible faults across the Bay Area in all earthquake scenarios. In these conditions, poorly constructed buildings tend to have damage or collapse, and well-constructed and retrofitted buildings are subject to damage (ABAG 2013).

Surface Rupture

When cracks appear in the ground surface, the phenomenon is referred to as surface rupture. This effect is fairly common as a result of moderate to heavy earthquakes and may cause structural damage to building foundations, roads, and infrastructure. The phenomenon is most common within the vicinity of the main fault trace and along other faults associated with the main fault, such as thrust faults. Even minor ruptures of this kind can make rural mountainous area roads impassable and damage other infrastructure (Santa Clara County 1994: P-16).

Seismically-induced ground rupture is considered most likely along faults that have a record of displacement sometime in the past 11,000 years (the Holocene Epoch). These faults are considered active. Faults on which an event is believed to have occurred during the Quaternary time (approximately the last 1.6 million years) are considered potentially active. All other faults are considered inactive.

Geologic maps prepared by the U.S. Geological Survey and the California Geological Survey (CGS) indicate that traces of the active San Andreas Fault cross the site and large portions of the property area are within an Alquist-Priolo Special Studies fault rupture hazard zone.

Previous investigations on the project site identified a fault trace beneath the classroom building associated with the former Alma College site. The main trace of the San Andreas Fault is about 100, 190, and 260 feet southwest of the classroom, library, and chapel buildings respectively. In the event of a major earthquake on the San Andreas Fault, there could be 3 inches of displacement along this fault trace (Knapp 2010). Best (2010) also noted that the lower reaches of Aldercroft and Briggs Creeks are offset because of fault movement.

In addition, the Map Showing Recently Active Breaks Along the San Andreas Fault Between the Central Santa Cruz Mountains and the Northern Gabilan Range (Sarna-Wojcicki, Pampeyan, and Hall 1975 as cited in Knapp 2010) indicates that in 1909 a right-lateral displacement of 0.1 to 0.5 inches was observed along with a right-lateral rotation of a concrete retaining wall in the southeastern portion of the former Alma College campus. This movement may have been related to sympathetic movement on the subsidiary fault during the 1906 earthquake. Furthermore, geomorphic evidence of a faint swale in the northwest portion of the site suggests a trace of the San Andreas Fault crosses the site beneath the existing pond.

Seismically-induced Ground Failure

Seismically-induced ground failure is a very general term including landsliding, lateral spreading, differential settling, and liquefaction of soils. Landslides are frequently triggered by earthquakes, and saturated soil conditions, which reduces the natural cohesiveness of some soils, increases landslide potential. Soft, fine-grained alluvial and water-saturated soils, such as the natural soils near creeks and streams, tend to spread and liquefy during earthquakes (Santa Clara County 1994: P-16).

As discussed above, strong to very strong shaking is expected to occur at the project site during a major earthquake on a segment of one of the nearby faults. Strong shaking during an earthquake can result in cyclic densification, a phenomenon in which non-saturated, cohesionless soil is densified by earthquake vibrations, causing settlement. Where bedrock is shallow or exposed at the ground surface, the potential for cyclic densification is low. However, a moderate to high potential for cyclic densification exists within the existing retaining wall backfill, which could distress existing or new structural elements supported in these materials (Knapp 2010).

Liquefaction and Lateral Spreading

Loose, granular soils and non-plastic silts that are saturated by relatively shallow groundwater (generally less than 50 feet) are susceptible to liquefaction. Liquefaction causes soil to lose strength and “liquefy,” triggering structural distress or failure because of the dynamic settlement of the ground or a loss of strength in the soils underneath structures. Liquefaction in a subsurface layer can in turn cause lateral spreading of the ground surface, which usually takes place along weak shear zones that have formed within the liquefiable soil layer. The project site has a very low susceptibility to liquefaction because of earthquake, based on the characteristics of Quaternary deposits mapped in the area (Witter et. al. 2006).

Slope Failure

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Soil slopes can experience soil slumps, rapid debris flows, and deep-seated rotational slides. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity.

Active landslides may move fairly slowly downhill at a rate of a few inches per year, potentially taking roads, driveways, utilities, and structures with them over the long term. In the short term, structures on active landslides may suffer foundation damage, structural separation, uneven settlement, damage to water pipes and other utilities, and other effects that cumulatively pose a major risk to life and property.

The project site is located on the Black Road landslide (Knapp 2010). The Black Road landslide encompasses all of the land mass on the west side of Lexington Reservoir north of Black Road. Based on the age of the Black Road landslide (estimated at 100,000 to 235,000 years before present) the landslide is inactive. (Active landslides are those that have shown movement in the last 11,000 years [Questa 1995a].) However, this ancient landslide may be destabilized by Highway 17, which runs across the landslide, and Lexington Reservoir, which submerges the toe of the landslide (Rogers and Williams 1974, as cited in Questa 1995b).

Shallow-seated landslides are also present in the Preserve on over-steepened slopes, including road cuts and incised stream channels. These include debris slides, debris flows, channel bank failures and road/trail

fill failures characterized by rapid, shallow (generally less than 10 feet thick) downslope movement of surficial soil colluvium, and weathered bedrock. Channel incision and bank erosion during severe storms undermine the toes of slopes and remove colluvium and talus, playing an important role in initiating shallow-seated landslides near streams (Best 2010: 6).

SOILS

Exhibit 4.5-2 shows the type of soils on the project site. Most of the soils on the Preserve are part of the Ben Lomond series, which generally consist of deep, well-drained soils that formed in material weathered from sandstone or granitic rocks. Soil series that are associated with loamy soils are present in the southwest corner of the Preserve. In addition, soils within the Aldercroft, Briggs, and Webb Creek areas are primarily soft, clayey loams that are poorly drained and often wet in the winter. Roads crossing these soils are prone to rutting by vehicles and mountain bikes, and potholing by horses (Best 2010: 4). The characteristics of soils on the Preserve are summarized in Table 4.5-1.

Soil Type	Portion of Preserve Area	Erosion Potential by Water (Factor Kw) ¹	Erosion Potential by Wind (Wind Erodibility Group) ²	Erosion Hazard (Road, Trail) ³	Suitability for Paths and Trails ⁴	Shrink-Swell Potential (Linear Extensibility) ⁵
Madonna loam 15 to 30% slopes	3.7%	0.37	6	Severe	Very limited	Low (1.5%)
Ben Lomond gravelly sandy loam 15 to 30% slopes	27.5%	Not rated	5	Severe	Somewhat limited	Moderate (4.5%)
Ben Lomond-Casrock complex 30 to 50% slopes	34.6%	Not rated	5	Severe	Very limited	Moderate (4.5%)
Ben Lomond-Casrock complex 50 to 75% slopes	29.3%	Not rated	5	Severe	Very limited	Moderate (4.5%)
Ben Lomond-Felton complex 50 to 75 percent slopes	3.7%	0.24	3	Severe	Very limited	Moderate (3.0%)
Maymen stony loam 30 to 75 percent slopes	1.2%	Not rated	5	Severe	Very limited	Low (0.5%)

1: Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

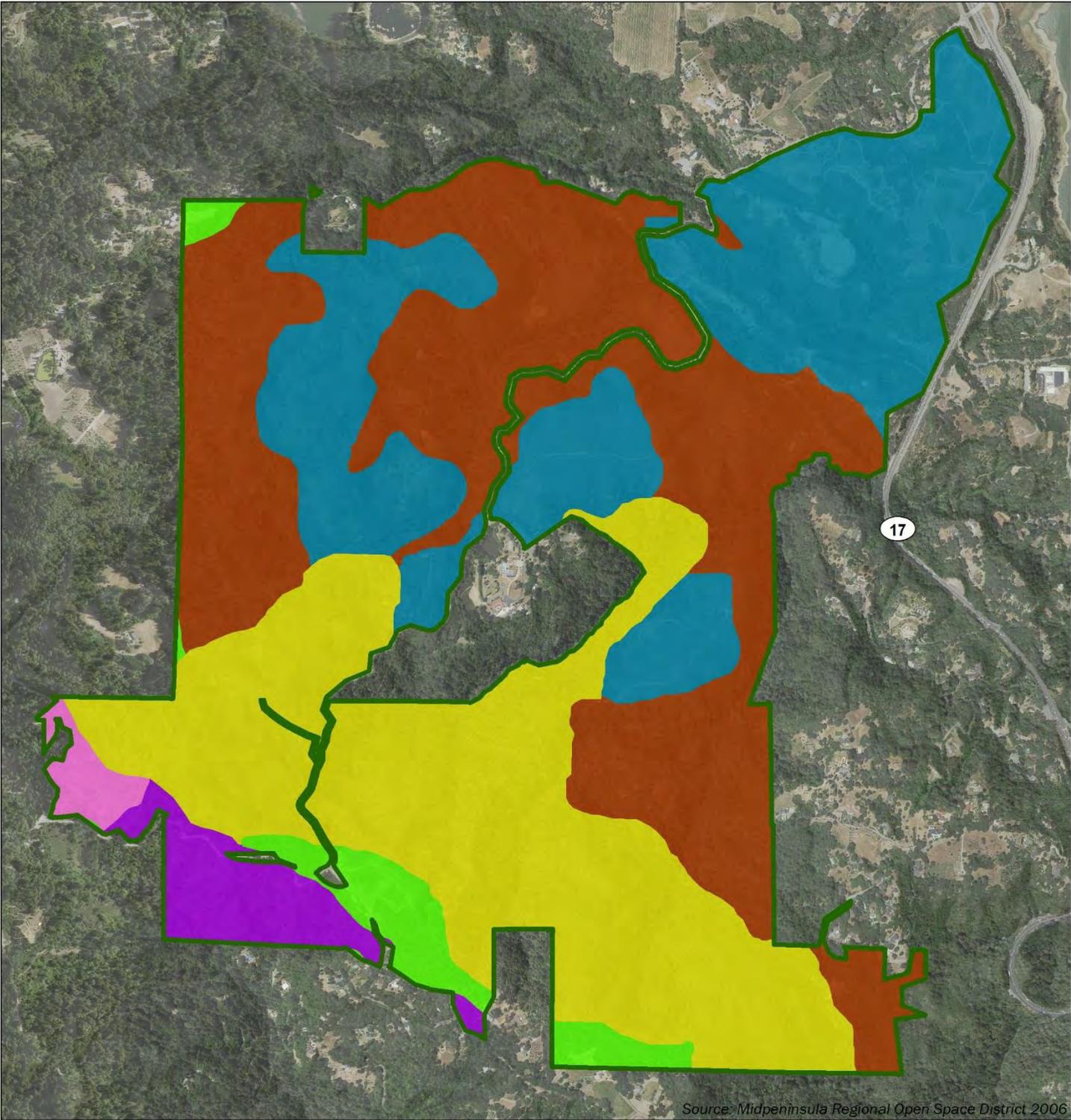
2: A wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

3: This rating was developed by the Natural Resources Conservation Service and indicates the potential for soil loss from unsurfaced roads and trails based on soil erosion factor K, slope, and content of rock fragments. "Severe" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

4: This rating was developed by Natural Resources Conservation Service based on the soil properties that affect trafficability and erodibility (stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer). Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

5: Shrink-swell classes are based on the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility of less than 3 indicates a low shrink-swell potential, 3 to 6 is associated with moderate potential, 6 to 9 is associated with high potential, and over 9 is very high potential for shrink-swell conditions. If the shrink-swell potential is rated moderate to very high, shrinking and swelling can damage buildings, roads, and other structures. The high degree of shrinkage associated with high and very high shrink-swell potentials can damage plant roots.

Source: Natural Resources Conservation Service 2014



Source: Midpeninsula Regional Open Space District 2006

Legend

Bear Creek Redwoods Preserve

Soil Type

Ben Lomond gravelly sandy loam, 15-30% slopes

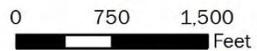
Ben Lomond-Casrock complex, 30-50% slopes

Ben Lomond-Casrock complex, 50-75% slopes

Ben Lomond-Felton complex, 50-75% slopes

Madonna loam, 15-30% slopes

Maymen stony loam, 30-75% slopes



Aerial: NAIP 2014
G15010027 01 012

Exhibit 4.5-2

Soils



Erosion and Runoff

Erosion is a natural process whereby soil and highly-weathered rock materials are worn away and transported, most commonly by wind or water. Natural rates of erosion can vary depending on slope, soil type, and vegetative cover. Soils containing high amounts of silt are typically more easily eroded, while coarse-grained (sand and gravel) soils are generally less susceptible to erosion.

Soil erosion can become problematic when human intervention causes rapid soil loss and the development of erosional features (e.g., incised channels, rills, and gullies) that undermine roads, buildings, or utilities. The soils on the project site have moderate erosion potential in general, and high erosion potential when used for unsurfaced roads, paths, and trails (see Table 4.5-1). Erosion is a concern where sloped soils are not vegetated because of disturbance, such as in the area of the Bear Creek Stables and the former logging roads. The condition of existing roads and trails is discussed below.

Expansive Soils

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as building and structure foundations or underground utilities, and can result in structural distress and/or damage. Soils on the project site have low to moderate shrink-swell potential. Often, grading, site preparations, and backfill operations associated with subsurface structures can eliminate the potential for expansion.

EXISTING SITE DEVELOPMENT

Existing Roads and Trails

The existing trails on the project site were developed for former uses of the property. Many, such as logging roads, are steep and were not designed for public access. These existing roads and trails are associated with shallow landslides, fill instability, and rutting. Where water is allowed to pond, or where use has been heavy (such as around the Bear Creek Stables), there are large sections of seasonally wet and muddy roads. Many of the trails in the Aldercroft Creek and Briggs Creek areas are prone to be seasonally wet, which causes damage to the trails with extended use (Best 2010).

A systematic inventory of the condition and erosion potential along approximately 22.5 miles of existing roads and trails was conducted for the project site by Timothy Best, CEG, in August 2010. Of the 103 sites of road surface erosion inventoried, 12 were given high treatment priority and 34 were given moderate priority, indicating that either significant damage has (or could) occur during average or infrequent large magnitude storms or erosion is expected only during less frequent storm events but could involve damage to trails that impedes access or results in delivery of a substantial amount of sediment to the aquatic system. Most drainage problems are due to lack of effective drainage structures, poor alignment, steep road gradient, or close proximity to streams. Additional information on erosion, runoff, and effects on water quality is provided in Section 4.8, "Hydrology and Water Quality."

Structures

The Preserve includes buildings associated with Bear Creek Stables and the former Alma College site. Many buildings associated with former Alma College do not meet current building code requirements, including the 1934 library structure and chapel building, 1935 classroom building, and 1950 library structure, as well as all of the buildings at the Bear Creek Stables. Deficiencies have been observed in existing foundations, shear wall capacities, and roof and floor diaphragm capacities (Knapp 2010). See Section 4.4, "Cultural Resources," for additional information about structures on the Preserve.

Walls

The former Alma College site sits on a narrow, level ridge that is reinforced on each long side by three key retaining walls: along the southwest side of the graded roadway southwest of the library building, on the northeast side of the library building, and southeast of the chapel. The concrete wall southwest of the library

is nearly 9 feet tall, with a base width of about 2 feet and a 1.5-foot-tall brick parapet. The wall is on a 5-foot-wide footing nearly 3-feet thick, which is embedded in the underlying sandstone bedrock and reinforced with rebar. A similar concrete retaining wall with a brick parapet is on the northeast side of the library building. This wall varies from about 14 feet to 20 feet tall and is supported by a 4.5-foot-wide by 1-foot-thick footing, also embedded in the underlying sandstone bedrock. The eastern end of this wall was structurally connected to a brick retaining wall located northwest of the old portion of the library building. Large cracks have developed at this location with a separation of several inches between the two walls. A third large, L-shaped retaining wall is located southeast of the chapel, uphill of the graded roadway. This wall is constructed of unreinforced concrete and is severely cracked and distressed at its corner. The existing brick and concrete retaining wall north of the chapel building, which the chapel building relies on to retain the soil under its north foundations, has settled, rotated, and deflected substantially (Knapp 2010).

Most of the retaining walls on the project site have reinforced concrete below the upper-level grade and freestanding brick walls above that. Where walls do not retain the edges of the ridgeline, they may also be made of mortared or unmortared rock rubble, or, in the case of the level change between the Chapel and the Tevis House/Faculty Residence, reinforced concrete. The walls support fill that was originally placed to widen the building site atop the ridge during site development. Fill material generally consists of stiff, brown to dark brown sandy clay containing brick, concrete, and glass fragments throughout. There is no back drain system behind the walls (Knapp 2010). The retaining walls are generally intact, but are not considered seismically stable.

Septic

As described in Section 4.13, “Utilities,” the Preserve is served by septic systems. The Natural Resources Conservation Service (2014) classifies the soils on the project site as having very limited potential to support septic systems.

4.5.2 Regulatory Setting

FEDERAL

National Pollutant Discharge Elimination System Program

Under Section 402 of the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) regulates point sources of pollution of waters of the United States. The California State Water Resources Control Board administers the NPDES permit program in California. Projects that disturb 1 or more acre of soil must obtain coverage under the state’s NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan (SWPPP) must be developed and implemented that provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of topsoil. The required components and BMPs commonly included in a SWPPP are described in greater detail in Section 4.8, “Hydrology and Water Quality.”

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. Any structure expected to have a human occupancy rate of more than 2,000 person-hours per year is considered a structure for human occupancy by the State Mining and Geology Board. In accordance with this act, the State geologist established regulatory zones, called “earthquake fault zones,” around the surface traces of active faults and published maps showing these zones. Structures for human occupancy cannot be located across the trace of an active fault and are not permitted within 50 feet of active faults unless a geologic investigation and report finds that there are not active branches of the fault on the building site. Large portions of the Preserve are within an Alquist-Priolo Special Studies fault rupture hazard zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking and other hazards caused by earthquakes. This act requires the State Geologist to delineate “zones of required investigation” (i.e., seismic hazard zones) where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide.

CGS has prepared maps titled State of California Seismic Hazard Zones, Los Gatos Quadrangle, dated 23 September 2002 and State of California Seismic Hazard Zones, Castle Rock Ridge Quadrangle, dated 11 August 2005. These maps were prepared in accordance with the Seismic Hazards Mapping Act of 1990. According to the maps, the project site is within a zone described as being prone to earthquake-induced landsliding.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction.

The 2013 CBC is based on the 2009 International Building Code and contains necessary California amendments that are based on the American Society of Civil Engineers Minimum Design Standards 7-05. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category for a project.

The updated CBC no longer cites the 1997 Uniform Building Code (UBC) Table 18-1-B for identifying expansive soils although the significance criteria in Appendix G of the State CEQA Guidelines still refers to this table. This analysis relies on the updated CBC section.

The CBC also includes a seismic zone map to determine applicable seismic standards for proposed structures. Seismic zones range from 0 to 4, with Zone 0 being the least active and Zone 4 the most active. All structures built in the county must comply with Uniform Building Code requirements for this zone.

California State Historical Building Code

The 2013 California State Historical Building Code (which is defined in Sections 18950 to 18961 of Division 13, Part 2.7 of the Health and Safety Code) sets forth standards and regulations intended to facilitate rehabilitation of historical buildings by balancing preservation of structural elements with, among other goals, providing reasonable safety from seismic forces or other hazards to occupants of such buildings.

LOCAL

Santa Clara County General Plan

The following policies in the Santa Clara County General Plan are applicable to the proposed project:

- ▲ **C-HS 33:** Development in areas of natural hazards should be designed, located, and otherwise regulated to reduce associated risks, by regulating the type, density, and placement of development where it will not:
 - a. Be directly jeopardized by hazards;
 - b. Increase hazard potential; and
 - c. Increase risk to neighboring properties.

- ▲ **R-HS 16:** No new building site shall be approved on a hazardous fault trace, active landslide, or other geologic or seismic hazard area that poses a significant risk.
- ▲ **R-HS 19:** In areas of high potential for activation of landslides, there shall be no avoidable alteration of the land or hydrology which is likely to increase the hazard potential, including:
 - a. saturation due to drainage or septic systems;
 - b. removal of vegetative cover; and
 - c. steepening of slopes or undercutting the base of a slope.
- ▲ **R-HS 20:** Lands where soils are in a continually saturated condition should not be used for structural purposes or filled with heavy earth fills due to their inherently weak and unstable nature. Uses requiring septic systems in such areas should not be allowed.
- ▲ **R-HS 21:** Proposals involving potential geologic or seismic hazards shall be referred to the County Geologist for review and recommendations.

Santa Clara County Code

The Santa Clara County Onsite Wastewater Systems Ordinance, codified in Sections B11-60 through B11-95 of the Santa Clara County Code, establishes requirements for siting of conventional and alternative wastewater disposal systems. The Onsite Systems Manual provides the policy, procedural, and technical details for implementation of these provisions.

Midpeninsula Regional Open Space District Resource Management Policies

MROSD's resource management policies are used to help guide the overall planning, budgeting, and decision making processes for individual preserves and for District-wide programs. The following policies relate to geology and soils and are applicable to the proposed project:

- ▲ **Policy GS-1:** Locate and construct facilities to avoid high-risk areas subject to landslides, liquefaction, faulting, flooding and erosion.
- ▲ **Policy GS-2:** Minimize unnatural soil erosion and sedimentation.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and objectives of the Preserve Plan related to geology, soils, and seismicity would be implemented if the Preserve Plan is approved:

Goal NR5: Protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat

Obj NR-5.2 Treat stormwater runoff and monitor potential sources of sediment and pollutants

Goal MO1: Maintain trails and facilities to protect the natural environment and provide for a quality visitor experience

Obj MO-1.3 Reduce and control sources of road- and trail-related erosion and sedimentation

Obj MO-1.4 Use Best Management Practices during facility construction and maintenance to control erosion

Goal MO2: Address environmental hazards

Obj MO-2.1 Retrofit existing structures and site new trails and facilities to reduce seismic risk

4.5.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

The following evaluation identifies both the potential effects of geologic and soil hazards on the proposed land use, and the potential for the project to effect soil resources by means such as accelerated erosion. As discussed above, site-specific data is derived from assessments of the project site conducted in 1995 and 2010. These reports are supplemented with regional information available from NRSC, CGS, and Santa Clara County. In determining the level of significance of potential impacts, the analysis assumes that development in the project area would comply with relevant federal, state, and local ordinances and regulations. Environmental Protection Measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project was determined to result in a significant impact to geology and soils resources if it would:

- ▲ expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - rupture of a known earthquake fault, as delineated by the most recent Alquist-Priolo Earthquake Faulting Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - strong seismic ground shaking;
 - seismic-related ground failure, including liquefaction; or
 - landslides;
- ▲ result in substantial soil erosion or the loss of topsoil;
- ▲ be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- ▲ be located on expansive soil, creating a substantial risk to life of property; or
- ▲ have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.

ISSUES NOT DISCUSSED FURTHER

All potential geology, soils, and seismicity issues identified in the significance criteria are evaluated below.

IMPACT ANALYSIS

Impact 4.5-1: Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or strong seismic ground shaking.

The Preserve Plan includes demolition of several structures that currently occupy the former Alma College site, including the classroom and garage, as well as the 1950 library. It would include rehabilitating the 1909 chapel, and potentially retaining only the roof structure of the 1934 library. Existing retaining walls would either be structurally improved or have measures in place, such as planting dense vegetation or installing low fences to act as barriers in order to maintain distance between the walls and future site visitors. Rehabilitation of the preserved structures and any new development would be conducted in compliance with applicable building codes, which regulate the proximity of buildings to identified faults, as well as their design. This impact would be **less than significant**.

Implementation of the Preserve Plan would include removal of several of the structures that currently occupy the former Alma College site, including the classroom and garage, as well as the 1950 library. It would include rehabilitating the 1909 chapel and potentially retaining the roof structure of the 1934 library. If partnership funding allows, the wooden chapel would be rehabilitated for event use or as a visitor center. The lower floor would be closed for structural strengthening. The patio on the north side would be rehabilitated for use by self-guided visitors. Rehabilitation of the chapel would follow the standards provided in the State Historic Building Code to achieve the health, safety, and welfare goals.

The Preserve Plan also includes provisions to strengthen the retaining walls at the former Alma College site. Specifically, the north retaining wall would be structurally stabilized using tiebacks, and the south retaining wall where failure has occurred (because of location on a fault trace) would either be repaired or would have security measures in place (e.g., barriers) to limit access. The broken ends of the south retaining wall would be stabilized and modest repairs to brickwork at the parapet edge are proposed. The wall would be structurally stabilized in a limited area at the lily pond (approximately 100 linear feet) to protect visitors where access is located close to the wall. Structural strengthening of the existing retaining walls would precede rehabilitation of the main buildings that depend on the retaining walls for support, and would be phased as funding is available. Public access to the former Alma College site within the failure zone of any retaining wall (or wall section) that has not been structurally strengthened, would be minimized through the use of natural barriers such as dense vegetated buffers, or low fencing.

As described above, a subsidiary trace of the San Andreas Fault has been identified as crossing beneath the classroom building. Based on the site's setting and proximity to this trace and the main trace of the San Andreas Fault, the potential for earthquake-induced ground rupture is high where this trace has been identified, but moderate to low in other areas of the site, including the library and chapel on the former Alma College site and the buildings associated with the Bear Creek Stables. There is a high risk for strong seismic ground shaking to occur throughout the site (Knapp 2010).

The project site is also within a zone described as being prone to earthquake-induced landsliding by maps prepared pursuant to the Seismic Hazards Map Act. CGS requires that geotechnical investigation reports within seismic hazard zones comply with the requirements of Special Publication 117A (Guidelines for Evaluating and Mitigating Seismic Hazard in California, dated 11 September 2008). Project-specific design-level geotechnical investigations that include detailed subsurface investigations, laboratory testing, and quantitative slope stability analyses to address stability issues must be performed for any new construction of buildings intended for human occupancy, in accordance with Special Publication 117 (Knapp 2010).

The chapel building would be rehabilitated in compliance with the State Historical Building Code, which includes regulations that pertain to the seismic forces used to evaluate structures for resistance to seismic loads and requires structural strengthening, as well as the policies and criteria of the State Mining and Geology Board with reference to the Alquist-Priolo Earthquake Fault Zoning Act. Initially, the lower level would be closed to allow structural stabilization of the building and to eliminate or reduce its dependence on the

adjacent north retaining wall. The patio on the north side of the building would be rehabilitated so that it is appropriate for use by self-guided visitors. If a suitable partner can be found and the site is used as a visitor center or event space, individuals are expected to spend limited time inside the structure. If annual use is expected to exceed 2,000 person-hours, the chapel would be rehabilitated to the standards set forth for a structure for human occupancy. Rehabilitated structures (i.e., the chapel and library roof) would be subject to geotechnical evaluation requirements and review by the County.

Site soils could be subject to localized creep, slumping, and small landslides on over-steepened slopes, along incised drainages, and in water-saturated granular soils in response to seismic forces. In addition, new, shallow landslides could develop on the flanks of the ridge associated with the former Alma College site as a result of seismic activity. There is also a moderate to high potential for cyclic densification within the existing retaining wall backfill, which could distress existing or new structural elements supported in these materials (Knapp 2010). The potential for soil liquefaction because of earthquake is low. The effects of these soils on existing and proposed structures would be evaluated as part of the investigations discussed above. Soil instability along trails is discussed further in Impact 4.5-3.

Implementation of the Preserve Plan would not exacerbate the rate at which seismic activity would occur. It would increase the number of people (visitors) present at the site; however, visitors of the Preserve would typically be existing residents of the vicinity and the larger Bay Area who would already be subject to hazards associated with earthquakes. For visitors using the open space and trails, the project site would be a relatively safe environment to experience an earthquake because of the low number of buildings.

Any development would be consistent with Santa Clara General Plan Policies C-HS 33, R-HS 19, and R-HS 21, as well as MROSD Policy GS-1, and Objectives MO-2.2 and MO-2.3 in the Bear Creek Redwoods Open Space Plan. As described in Environmental Protection Measure GEO-6, design-level geotechnical evaluations that include excavation of fault trenches would be conducted before new, habitable structures are constructed. As a result, any new, habitable structures would be sited to avoid areas of natural hazards and those subject to potential environmental hazards would be reviewed by the County geologist. Further, any new, habitable buildings would be constructed in accordance with applicable building codes. The California Building Code includes design standards that are intended to protect buildings from the maximum credible earthquake that could occur on the site. Implementation of the Preserve Plan in compliance with applicable building codes would reduce this impact to a **less-than-significant** level.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.5-2: Result in substantial soil erosion or loss of topsoil.

The project site sits atop a deep layer of gravelly, sandy loam with a high potential for soil erosion to occur. The loose, coarse quality of the loam allows it to move easily and requires special consideration to prevent soil degradation. Construction of trails, parking areas, and public restrooms could cause temporary erosion. The continued use of the Bear Creek Stables may also result in erosion on the project site. However, through implementation of environmental protection measures combined with measures included in the Preserve Plan to reduce erosion, the project's effect on soil erosion or the loss of topsoil would be **less than significant**.

The project site sits atop a deep layer of gravelly sandy loam with a high potential for soil erosion to occur, particularly when used as unpaved trails. The loose, coarse quality of the loam allows it to move easily and requires special consideration to prevent soil degradation. As indicated in Table 4.5-1, the suitability of soils on the Preserve for development of trails is considered somewhat or very limited by Natural Resources Conservation Service based on the soil properties that affect trafficability and erodibility (e.g., stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer). The limitations generally require soil reclamation, special design considerations, and ongoing maintenance.

The existing roads and trails were studied in the Road and Trail Inventory (Best 2010) for their potential contribution to soil erosion. To minimize the erosion potential of existing roads and trails, the report includes recommended road improvements; suggested road closures; and identifies specific types of operation based on soil type, slope, and proximity to surface water. Implementation of the Preserve Plan would include the addition of new trails and drainage improvements to existing trails, as well as closure of existing redundant or poorly aligned trails. New trails would include several hiking- and equestrian-only trails and one multi-use trail also open to bicycle use as a regional connector trail traversing the Preserve north to south. In addition, MROSD standard road and trail construction and maintenance methods, which are incorporated into the Preserve Plan, would ensure that both construction-phase and operation-phase erosion is minimized, as discussed below.

Construction Impacts

New trail and parking lot construction, renovation of the Bear Creek Stables Site, and rehabilitation of the former Alma College site would result in substantial grading and removal of existing vegetation from the project site, which would temporarily expose soil to wind and water erosion while reducing soil structure and cohesion, resulting in accelerated erosion. Where the groundcover must be removed in areas where slopes are steep or soils are unstable, erosion control measures would be used, as described in Environmental Protection Measure GEO-4. Temporary erosion control measures may include: scheduling limitations during the rainy season; preservation of existing vegetation; application of hydraulic mulch to disturbed areas outside of the stream channel; use of geotextiles, plastic covers, and erosion control mats; instillation of silt fences; and use of fiber rolls along the slope contour above the high water level to intercept runoff. In addition, MROSD would implement intermediary measures where trails are actively eroding, such as: changing the slope of existing roads to facilitate sheet runoff, installing rolling waterbars to more effectively drain road surfaces, and adding rip-rap or other impact reducing mechanisms at the outfall of waterbars and culverts, as detailed in Environmental Protection Measure HYDRO-2. Stream flow and soil strength would also inform the design and restoration of temporary stream crossings, which would be approved by a registered engineer. After construction, disturbed areas of the site would be seeded and mulched to reestablish a vegetation cover that would resist erosion and increase bank stability by increasing tensile strength in the soil and increasing infiltration. If individual trail and facility construction projects involve greater than 1 acre of grading, compliance with the NPDES General Permit administered by the State Water Resources Control Board would be required and a SWPPP would be prepared to identify any additional structural and nonstructural BMPs needed to control erosion.

Operational Impacts

Re-grading and maintenance of roads would result in minor soil disturbance. As established in Environmental Protection Measure BIO-8, existing native vegetation would only be removed as necessary to accommodate the trail clearing width. Maintaining trail integrity, through the actions described in Environmental Protection Measure HYDRO-1 would further limit the potential for trail operation and maintenance to result in substantial erosion. Erosion would be further limited by District-wide requirements that are in place to protect water quality during maintenance activities, as outlined in the District's Best Management Practices and Standard Operating Procedures for Routine Maintenance Activities in Water Courses, which has been reviewed and approved by the Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife. Maintenance work in watercourses would meet standards and be consistent with the current Regional Water Quality Control Board's Memorandum of Understanding for routine maintenance activities on MROSD lands. These standards would be followed, as applicable, based on site conditions and specific project requirements. In addition, as described in Environmental Protection Measure GEO-3, MROSD would limit patrol and maintenance vehicle access on seasonal roads and trails during the winter.

Development pursuant to the Preserve Plan would be consistent with Policy GS-2 of MROSD's Resource Management Policies, which prescribes practices and standards to minimize unnatural erosion, and Goal MO1 of the Preserve Plan, related to reduction and control of sources of erosion and sedimentation. Environmental Protection Measures GEO-1 through GEO-4 included as part of the proposed project (See Appendix C) would limit erosion by improving runoff patterns, designing trails to remedy and prevent slope

failure, limiting vehicle access during the wet season, and implementing appropriate erosion control measures.

Construction of trails, parking areas, and public restrooms could cause temporary erosion. Long-term erosion could be associated with use of existing and proposed trails, as well as continued use of the Bear Creek Stables. However, through the use of Environmental Protection Measures combined with measures included in the Preserve Plan to reduce erosion, the project's effect on soil erosion or the loss of top soil would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.5-3: 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.

The Preserve is located on an inactive, deep seated landslide in an area that is potentially unstable because of identified faults. In addition, soils in the area are susceptible to shallow landsliding where slopes are oversteepened or excessive precipitation results in saturated soils. However, because the geotechnical studies for new, habitable structures required by Environmental Protection Measure GEO-6 would include design recommendations for site-specific geologic conditions that would avoid contributing to potential for on- or offsite landsliding, there would be a **less-than-significant** impact.

The project site is located on the inactive Black Road landslide. Based on the relatively shallow depth to bedrock observed over most of the site, and the relative density of the surficial soils, the potential for lateral spreading, subsidence, and soil collapse at the site is low (Knapp 2010). However, the project site contains a segment of the San Andreas Fault, and the seismic activity related to this fault creates a potentially unstable environment, as discussed above under Impact 4.5-1.

In addition, new shallow landslides could be triggered by future, excessive precipitation. A landslide of this nature should not constitute an immediate threat to the integrity of the buildings associated with the former Alma College site because they are founded below these materials in the underlying sandstone bedrock. However, new flatwork, walkways, or patios constructed down slope of the buildings on these soils may be subject to distress from this type of landsliding (Knapp 2010). These areas would be evaluated on a case-by-case basis during a design-level geotechnical study for any improvements, as required in Environmental Protection Measure GEO-6 in Appendix C. Data collected from the aforementioned studies would determine the location and design of structures, trails, and parking areas to reduce potential damage from landslides, liquefaction, and earthquakes. In the event that changing conditions result in locations along trails where the potential for landslide to occur is elevated, trails would be closed to public access, as described in Environmental Protection Measure GEO-5 in Appendix C. As established in Policy R-HS 19 of the Santa Clara County General Plan, no avoidable alteration of the land or hydrology that is likely to increase the potential for activation of landslides would be conducted.

As described above, a Road and Trail Inventory (Best 2010) has been completed for the project site that identified both the location of existing landslides and areas that are prone to failure. The treatment of these areas is described in Environmental Protection Measure GEO-2. Where existing roads are to remain open, but are not presently passible due to past fill failures, residual perched and unstable fill material would be excavated and delivered to a stable location. The road would be reopened by either cutting into the bank or reconstructing the outside edge of the fill prism. Where slopes are steep, retaining walls would be used to support the fill. The method of treatment for fill failures would be dependent on the stability of the residual fill material, the cause of the failure (e.g., diverted runoff), and the remaining road width. These proposed improvements would minimize risk associated with catastrophic failure of trails.

The project would be located on a geologic unit that is unstable. However, the Preserve Plan includes features that reduce risk of failure, and because the required geotechnical studies would include additional design recommendations for site-specific geologic conditions, and because all new occupiable structures and improvements to existing occupiable structures would comply with the CBC, there would be a **less-than-significant** impact related to the potential for the project to result in or be affected by on- or off-site landsliding.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.5-4: Be located on expansive soils, creating a substantial risk to life or property.

Soils on the project site have a low shrink-swell potential and are not considered expansive. Additionally, new structures would be constructed in accordance with the California Building Code. This impact would be **less than significant**.

Based on previous site investigations, there is a low to moderate risk of expansive soil distress exists for new structural elements founded on the existing fill (Knapp 2010: 20). The project site is composed primarily of Ben Lomond gravelly sandy loam which has a low shrink-swell potential and, therefore, is not considered expansive (U.S. Department of Agriculture 1974: 68). Additionally, new, habitable structures that would be constructed under the Preserve Plan would be constructed in accordance with the California Building Code following site-specific geotechnical evaluations, as established in Environmental Protection Measure GEO-6 in Appendix C. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.5-5: Installation of septic tanks or alternative wastewater disposal system on soils incapable of adequately supporting such use.

The project would require new and upgraded septic systems. Santa Clara County regulations require a site evaluation to allow proper system design and to determine compliance with the site suitability criteria identified in the applicable ordinance and the 2014 Onsite Systems Manual. Potential effects related to installation of septic tanks or alternative wastewater disposal system on soils incapable of adequately supporting such use would be reduced through compliance with Santa Clara County's regulations related to septic system location and design. This would be a **less-than-significant** impact.

Based on review of regional soils maps, project site soils are likely not capable of adequately supporting traditional septic tanks. The proposed project includes septic tank upgrades and new alternative wastewater disposal systems associated with the stables and rehabilitated chapel. "Alternative system" means a type of onsite septic system that utilizes either a method of wastewater treatment other than a conventional septic tank and/or a method of wastewater dispersal other than a conventional drainfield trench for the purpose of producing a higher quality wastewater effluent and improved performance of and siting options for effluent dispersal. The precise locations of these systems have not been determined.

Santa Clara County has standards for locating onsite septic systems that require field inspection (by the County or a specialist), development of soil profiles, identification of depth to groundwater and percolation potential, geotechnical analysis, and cumulative assessment. A permit must be obtained from the Department of Environmental Health to construct, reconstruct, or repair an onsite wastewater treatment and dispersal system.

Before approving the use of wastewater disposal systems, a site evaluation is required to allow proper system design and to determine compliance with the site suitability criteria identified in the County's Ordinance and

Onsite Systems Manual. The Director of Environmental Health may approve use of an alternative system where it is determined that sewage cannot be disposed of in a sanitary manner using a conventional system, or an alternative system would provide equal or greater protection to public health and the environment. A County-issued operating permit is required for all alternative systems. Operating permits include requirements for system inspection, monitoring and reporting, and permit renewal; and serve as the basis for verifying the adequacy of alternative system performance and ensuring ongoing maintenance. The types of alternative systems permitted are limited to those for which siting and design standards have been adopted by the County and guidelines have been incorporated into the Onsite Systems Manual. Guidelines are provided for the following types of alternative dispersal systems:

- ▲ intermittent and recirculating sand filter systems, which provide supplemental treatment of septic tank effluent prior to discharge to the dispersal system;
- ▲ proprietary treatment units, including anaerobic treatment units that use forced air to oxidize the wastewater and promote decomposition of solids, and media filters that provide supplemental treatment of effluent;
- ▲ shallow pressure distribution systems that use a pump and small-diameter piping to achieve broad, uniform distribution of wastewater in the shallow soil zones for improved soil absorption and better treatment of percolating effluent;
- ▲ mound systems that provide added treatment of effluent before it reaches native soils;
- ▲ at-grade systems that use a gravel distribution bed at the soil surface to overcome shallow soil depths and high groundwater tables;
- ▲ pressure-dosed sand trench systems that improve the treatment of effluent and normalize effluent flow;
- ▲ raised sand filter beds, which combine the features of an intermittent sand filter and a mound system; and
- ▲ subsurface drip dispersal systems, in which wastewater is distributed via a dripline installed 8 to 12 inches below the ground surface.

Through compliance with Santa Clara County's regulations related to septic system location and design, there would be a **less-than-significant** impact related to installation of septic tanks or alternative wastewater disposal system on soils incapable of adequately supporting such use because issuance of the permit is contingent upon appropriate design of the septic system for the on-site soils.

Mitigation Measures

No mitigation measures are necessary.

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4.6 GREENHOUSE GAS EMISSIONS

This section presents a brief summary of the current state of climate change science and greenhouse gas (GHG) emissions sources in California; a summary of applicable regulations; quantification of project-generated GHG emissions and discussion about their potential contribution to global climate change; and analysis of the project's resiliency to climate change-related risks.

4.6.1 Environmental Setting

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Human-caused emissions of GHGs in excess of natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known, but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources

GHG emissions are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (ARB 2014c). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2014c).

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.5-8.6 degrees Fahrenheit (°F) by the end of the 21st century, depending on future GHG emission scenarios (IPCC 2014:SPM-8). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase 2.7 °F above 2000 averages by 2050 and, depending on emission levels, 4.1–8.6 °F by 2100 (CNRA 2012:2).

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California (which could reduce water supply held in snow pack) and an increase in precipitation falling as rain (which could increase flooding).

Sea level rise is another outcome from climate change. Sea level rose approximately 7 inches during the last century and, assuming that sea-level changes along the California coast continue to reflect global trends, sea level along the state's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century (CNRA 2012:9).

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012:11 and 12).

4.6.2 Regulatory Setting

GHG emissions and responses to global climate change are regulated by a variety of federal, state, and local laws and policies. Key regulatory and conservation planning issues applicable to the proposed project are discussed below.

FEDERAL

Supreme Court Ruling of Carbon Dioxide as a Pollutant

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

STATE

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets for the State. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050. As described below, legislation was passed in 2006 to limit GHG emissions to 1990 levels by 2020, and a subsequent executive order (B-15-30) established additional targets

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions "...shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Assembly Bill 32 Climate Change Scoping Plan and Update

In December 2008, California Air Resources Board (ARB) adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO₂-equivalent (CO₂e) emissions, or approximately 21.7 percent from the state's projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions). In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (ARB 2014a:4 and 5). According to the update,

California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (ARB 2014a: ES-2). The update also reports the trends in GHG emissions from various emission sectors.

Senate Bill 375

Senate Bill (SB) 375, signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. ARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

The applicable MPO in the project region is the Metropolitan Transportation Commission (MTC), which includes Santa Clara County. MTP, in conjunction with the Association for Bay Area Governments (ABAG), adopted *Plan Bay Area* in 2013 which includes the Bay Area region's *Sustainable Communities Strategy and the 2040 Regional Transportation Plan* (ABAG 2014). MTP and ABAG are currently working on *Plan Bay Area 2040*, an update to the current plan to identify opportunities that can help steer the region toward the goals set forth in *Plan Bay Area 2035* (MTC 2015).

Executive Order B-30-15

On April 20, 2015 Governor Jerry Brown signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed its legislated target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, summarized above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 °C, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels. No legislation has been passed, as of this writing, to meet the targets stated in Executive Order B-30-15.

California Building Efficiency Standards of 2013 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. California's Energy Efficiency Standards for Residential and Nonresidential Buildings was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards (CEC 2012). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis for California's 2013 Building Energy Efficiency Standards estimates that the 2013 Standards are 23.3 percent more efficient than the previous 2008 standards for multi-family residential construction and 21.8 percent more efficient for non-residential construction (CEC 2013:3).

CEC adopted the 2016 Building Energy Efficiency Standards in 2015. The 2016 Title 24 standards will go into effect on January 1, 2017. For single-family residences, the 2016 Title 24 standards will result in about 28 percent less energy use for lighting, heating, cooling, ventilation and water heating than the 2013 Title 24 standards (CEC 2015a). For non-residential land uses, the 2016 standards would result in 5 percent less energy use than those built to 2013 standards (CEC 2015b).

LOCAL

Metropolitan Transportation Commission and the Association for Bay Area Governments

Pursuant to SB 375, MTC and ABAG was tasked by ARB to achieve a 10 percent per capita reduction in passenger-vehicle generated transportation emissions by 2020 and a 16 percent per capita reduction by 2035 from 2005 levels, which ARB confirmed the region would achieve by implementing its Sustainable Communities Strategy (ARB 2014b).

MTP and ABAG are currently working on *Plan Bay Area 2040*, an update to the current plan to identify opportunities that can help steer the region toward the goals set forth in *Plan Bay Area 2035* (MTC 2015).

Santa Clara County General Plan

Santa Clara County recently adopted a revision to the Health Element of the County's 1994 General Plan in August 2015 (County of Santa Clara 2015). The County's General Plan Health Element has various policies in place related to the improvement of air quality and reduction of greenhouse gas emissions within the county. Policies relevant to the proposed project are shown below:

- ▲ **HE-C.20 Greenhouse gases and air quality.** The County shall promote plans and developments that reduce GHG emissions and result in decreased air pollution, especially for communities with disproportionate exposure to air pollution, and for vulnerable populations such as children, seniors, and those with respiratory illnesses.
- ▲ **HE-G.1 Air quality environmental review.** The County shall continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and GHG emissions.
- ▲ **HE-G.4 Off-road sources.** The County shall encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.
- ▲ **HE-G.6 Regional/local plans.** The County shall encourage and support regional and local land use planning that reduces automobile use and promotes active transportation.

Santa Clara County Climate Action Plan

Santa Clara County Board of Supervisors adopted the County's Climate Action Plan (CAP) for Operation and Facilities in 2009, which outlines the annual GHG emissions from government operations and strategies to reduce these emissions in the future. This CAP does not address community-wide emissions (County of Santa Clara 2009). The County does not currently have plans to develop a community-wide climate action plan or similar GHG reduction plan.

Proposed Bear Creek Redwoods Preserve Plan

The proposed Bear Creek Redwoods Preserve Plan does not contain additional guidance on GHG emissions or climate change.

4.6.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Construction-Related Greenhouse Gas Emissions

Similar to the methodology described in Section 4.2, "Air Quality," short-term construction-related emissions of GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 computer program (SCAQMD 2013). CalEEMod was used to estimate emissions from trail

rehabilitation and construction, construction of new parking lots and buildings, retaining walls, and renovation of existing facilities. As recommended by the BAAQMD for roadway projects, the Road Construction Emissions Model Version 7.1.5.1 was used to calculate emission from the construction of vehicle and pedestrian bridges (BAAQMD 2012). Modeling was based on project-specific information (e.g., general schedule, building types, amounts of demolition, total cut and fill volumes, area to be paved), where available, and model default parameters provided based on the project's location, land use type, and type of construction. Adjustments to default values were made based on the type of construction activity required. Construction activity was estimated separately for all three phases of the project. Detailed model construction assumptions, inputs, and schedule are provided in Appendix D.

Operational Greenhouse Gas Emissions

CalEEMod was also used to estimate emissions generated by operation of the proposed project. Mobile-source emissions were estimated using the trip rates provided by the project's traffic study and presented in Section 4.12, "Traffic and Transportation." the default average one-way trip distance in CalEEMod of 12.4 miles for visitors on non-event days. However, an average one-way trip length of 25 miles was used for visitors making trips to special events that would be held at the project site because these events are anticipated to draw visitors from more distant locations.

Electricity consumption was calculated using GHG emission factors forecasted for the Pacific Gas and Electric Company for 2020 based on the utility's progress toward achieving the State's Renewable Portfolio Standard (RPS) goal of attaining 33 percent of electricity from renewable sources. The project's level of electricity and propane usage were based on default consumption rates provided by CalEEMod for similar types of land uses. Natural gas emissions estimated by CalEEMod was assumed to be generally equivalent to that of propane. Specific model assumptions and inputs for all of these calculations can be found in Appendix D.

Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Appendix G of the State CEQA Guidelines indicates that a proposed project would result in a potentially significant impact on climate change if it would:

- ▲ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ▲ conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As discussed in Section 4.2, "Air Quality," the Bay Area Air Quality Management District (BAAQMD) has not officially recommended the use of specific thresholds in CEQA analyses and CEQA ultimately allows lead agencies the discretion to determine whether a particular environmental impact would be significant, as evidenced by scientific or other factual data. BAAQMD also states that lead agencies need to determine appropriate thresholds to use for each project they review based on substantial evidence that they include in the administrative record of the CEQA document. One resource BAAQMD provides as a reference for determining appropriate thresholds is the *CEQA Thresholds Options and Justification Report (Justification Report)* developed by its staff in 2009 (BAAQMD 2009). The *Justification Report* outlines substantial evidence supporting a variety of thresholds of significance. Since that time, the thresholds substantiated by the *Justification Report* have been used by lead agencies in the San Francisco Bay Area.

The *Justification Report* recommends that project impacts be considered less than significant if they either meet specified GHG mass emissions thresholds, (i.e., 1,100 MT CO₂e per year) or are consistent with a qualified Climate Action Plan (or similar adopted policies, ordinances and programs) that includes feasible measures to reduce GHG emissions consistent with AB 32 goals and Executive Order S-03-05 targets

(BAAQMD 2009). Therefore, because the proposed project would result in operational-related emissions of GHGs from mobile and indirect sources (i.e., energy consumption), and is located within the BAAQMD's jurisdiction for which these thresholds were determined to be applicable, MROSD considers the mass emission level of 1,100 MT CO₂e per year to be an acceptable threshold for determining whether the project's GHG emissions would have a significant impact on the environment and whether the project would be consistent with statewide efforts to reduce GHGs.

The *Justification Report* does not address thresholds for GHG emissions emitted during project construction. However, the BAAQMD recommends that lead agencies quantify and disclose construction-related GHG emissions and make a significance determination of these emissions (BAAQMD 2010:2-6). Due to the cumulative effect of GHGs, other large air districts, such as the Sacramento Metropolitan Air Quality Management District (SMAQMD) and South Coast Air Quality Management District (SCAQMD), recommend amortizing a project's construction emissions over the operational lifetime of a project (SMAQMD 2015, SCAMQD 2008). The sum of estimated amortized construction emissions and annual operation emissions per year is assumed to reflect the total annual GHG emissions attributable to a project. The operational lifetime of the proposed project is estimated to be 30 years, consistent with SCAQMD and SMAQMD recommendations for commercial land uses, although the proposed facilities would likely operate for much longer.

Thus, based on Appendix G of the CEQA Guidelines and BAAQMD recommendations, plan-level impacts are considered less than significant if implementation of the proposed project would:

- ▲ generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (i.e., result in GHG emissions that exceed 1,100 MT CO₂e per year); or
- ▲ conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

All issues related to climate change discussed above are addressed in the analysis below.

IMPACT ANALYSIS

Impact 4.6-1: Project-generated greenhouse gas emissions.

The level of GHG emissions associated with the proposed project would not exceed the threshold of 1,100 metric tons of CO₂ equivalents per year (MT CO₂e/year). Therefore, implementation of the proposed project would not be considered a substantial cumulative contribution to climate change and the project would be consistent with statewide efforts to reduce GHGs. This would be a **less-than-significant** impact.

Both project construction and operation would generate GHG emissions. GHG-producing construction activities would include the operation of heavy-duty equipment (e.g., dozers, loaders, excavators), haul trucks carrying supplies and materials to and from the project site, and construction worker commute trips. Construction would also result in the removal of existing trees on the project site resulting in a net loss of 20 trees, which would result in lost carbon sequestration potential.

Project operation would result in GHG emissions associated with motor vehicle trips to and from the project site; the consumption of electricity, natural gas, and water; the generation of wastewater and solid waste, and area sources such as equipment used for landscaping.

Table 4.6-1 summarizes and estimates the changes in emissions sources of the project compared to existing conditions, respectively. These tables include special event impacts under the worst-case scenario combined with amortized construction emissions.

Table 4.6-1 Summary of Greenhouse Gas Emissions Associated with the Bear Creek Redwoods Preserve Plan¹	
Construction Emissions	MT CO₂e
Phase 1 (Year 1 through 3)	606
Phase 2 (Year 4 through 10)	1,404
Phase 3 (Year 11 through 20)	214
Total Construction Emissions	2,223
Amortized Construction Emissions (30-year lifetime)	74
Operational Emissions at Full Build-Out in 2030	MT CO₂e/year
Vehicle Trips	453
Electricity Consumption	97
Water Use ²	24
Propane Consumption ³	14
Solid Waste Generation	3
Area Source ⁴	<1
Total Operational Emissions ⁵	590
Net Loss in Carbon Sequestration Potential	15
Amortized Construction Emissions	74
Combined Net Increase⁶	664
Threshold of Significance	1,100

Notes: Totals may not sum due to rounding. Future mobile-source emissions beyond 2020 are anticipated to decrease over time as older passenger cars are replaced by newer, greenhouse gas-efficient vehicles, including electric and other alternative-fuel vehicles as a result of State and federal actions regulations (e.g., Advanced Clean Cars Program).

MT CO₂e/year = metric tons of carbon dioxide-equivalent per year

¹ Levels of CO₂e are calculated using IPCC Fifth Assessment 100 year lifetime global warming potential factors (IPCC 2013).

² Water-Related Electricity consumption accounts for the electricity used to treat and convey water, as well as the treatment of wastewater generated on the project site.

³ No natural gas use anticipated at covered arenas.

⁴ Area-source greenhouse gas emissions are primarily from landscape maintenance equipment.

⁵ Totals may not add due to rounding.

⁶ Includes amortized construction emissions and loss in carbon sequestration potential.

Source: Data provided by Ascent Environmental in 2015 based on modeling with CalEEMod v. 2013.2.2

As shown in Table 4.6-1, project implementation would result in a net increase of 664 MT CO₂e per year. Vehicle trips to and from the project site would account for more than 75 percent of annual operational emissions. Project-related GHG emissions would not exceed the threshold of 1,100 MT CO₂e/year. Therefore, GHG emissions generated by the project would not be a substantial cumulative contribution to climate change and the project would be consistent with statewide efforts to reduce GHGs. This would be a **less-than-significant** impact.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.6-2: Impacts of climate change on the project.

Climate change is expected to result in a variety of effects that would influence conditions on the project site. These effects include increased temperatures, increased wildfire risk and sea level rise; and changes to timing and intensity of precipitation, resulting in increased stormwater runoff and flood risk. However, numerous state and County programs and policies would enhance the project's resiliency to these risks. Therefore, this impact would be **less than significant**.

Human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect and associated changes in local, regional, and global average climatic conditions.

Although there is strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2007). These include:

- ▲ increased average temperatures;
- ▲ modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- ▲ changes in the timing and amount of runoff;
- ▲ reduced water supply;
- ▲ deterioration of water quality; and
- ▲ elevated sea level.

These changes may translate into a variety of issues and concerns that affect the project area, including but not limited to:

- ▲ increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures,
- ▲ increased stormwater runoff associated with changes to precipitation patterns, and
- ▲ increased risk of landslides associated with changes to precipitation patterns.

Sea level is expected to rise 31 to 55 inches by the year 2100 (CNRA 2012). However, the proposed project is located between 600 and 1,000 feet above sea-level and more than 20 miles from the nearest inundated area (Cal-Adapt 2015). Thus, the Preserve would not be directly affected by sea level rise.

As discussed in Section 4.8 “Hydrology and Water Quality,” due to its elevation, the Preserve would not be subject to widespread flooding and is not located within a floodplain, a Federal Emergency Management Agency-designated floodway, or an inundation area.

The project could be affected by increases in stormwater runoff. Also discussed in Section 4.8 “Hydrology and Water Quality,” MROSD’s resource management goals and objectives within the Bear Creek Redwoods Preserve Plan include measures to protect water quality that could be affected by stormwater.

Changes in precipitation patterns could also result in increased prevalence of landslides. As discussed in Impact 4.5-3, the Preserve is located in an area susceptible to landslides due to the area’s soil characteristics and presence of faults. However, geotechnical studies required by Environmental Protection Measure GEO-6 would include design recommendations for site-specific geologic conditions that would avoid contributing to potential for on- or off-site landsliding. The environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

The project area is also located in an area subject to high risk of wildfire, as discussed in Section 4.7, “Hazards and Hazardous Materials”. However, the County has a variety of fire protection programs, including, but not limited to requiring the maintenance of 100 feet of defensible space around structures per Public Resources Code Section 4291, and a hazardous brush abatement program for hillside areas (Santa Clara County Fire Department 2015).

Due to the project’s location and programs in place to abate climate change-related risks, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

4.7 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential for the project to result in a hazard to the public or the environment through: transport, upset, or emission of hazardous materials; impairing an emergency response plan; and exposure to wildfires. The analysis includes the results of a 2012 archive review and site inspection of the former Alma College site conducted by Environmental Resources Management (ERM) in 2012. For information on geologic hazards associated with implementation of the project, please refer to Section 4.5, “Geology, Soils, and Seismicity.”

Multiple comments from the County and the public pertaining to hazards and hazardous materials were received during public review of the Notice of Preparation for the proposed project. The comments requested evaluation of hazardous materials and potential effects of wildfire on new facilities at Bear Creek Stables.

4.7.1 Environmental Setting

Development and use of land is a key aspect of understanding the potential for contamination related to hazardous materials and wastes because particular land uses are more prone to some types of contamination. Historical land use is discussed further in Section 4.4, “Cultural Resources,” and current land use is discussed in Section 4.9, “Land Use.”

TOPOGRAPHY, SOILS, AND GROUNDWATER

The Preserve is located near the northeastern base of the central Santa Cruz Mountains, with two small areas at the extreme south end of the preserve extending over the summit to the western slope. Much of the preserve consists of steep, rugged terrain. The project site is underlain by relatively shallow sandstone bedrock and is not located within a groundwater basin as delineated by the California Department of Water Resources. Overlying bedrock is up to 47 inches of Ben Lomond gravelly sandy loam of varying slopes. The loam drains well with low storage potential and a moderate runoff capacity.

EXISTING STRUCTURES

Structures on the project site are primarily associated with the former Alma College campus and the Bear Creek Stables. The former Alma College site includes various structures associated with the former college and previous estates. Most of the original structures have been damaged or destroyed. In addition to dormitories and classrooms, ancillary buildings identified on a Fire Insurance Rate Map dated 1946 and corrected in 1950 identify a tailor shop, book binding shop, print shop, machine shop, and automobile garage. None of these structures, except the garage built in the 1940s, remain on the site. Other remaining buildings include a chapel constructed in 1909 and modified in 1934, a library built in 1934 with additions constructed in 1950, and a classroom building constructed in 1935. All remaining buildings at the former Alma College Site are currently unoccupied. The Bear Creek Stables consists of pastures, arenas, and paddocks, as well as a caretaker’s house, cottage, stable, shop, and office. There are also existing bridges and culverts where trails and roadways cross onsite streams (see Section 4.8, “Hydrology and Water Quality,” for further discussion).

POTENTIAL CONTAMINATION

Documented Sites of Contamination

The State of California maintains the linked EnviroStor and Geotracker databases of known contamination sites pursuant to Government Code Section 65962.5. There are no sites within the Preserve that are actively

under evaluation, remediation, or verification monitoring listed on these databases. The Geotracker database does identify 10 closed sites on, or within 1 mile of, the Preserve where leaking underground storage tanks (USTs) have been cleaned-up to regulatory standards and are considered to present no further threat to the project site under the current land use. These include three tank removals (one in 1989 and two in 2003) at the Presentation Center, which is surrounded by, but not within, the Preserve, as well as one site on the Preserve property.

The UST site within the Preserve is located at the former Alma College site. In March of 2011, petroleum hydrocarbons associated with diesel and motor oil were released. Oily water from the plant building/boiler room was observed flowing down roadways and into Briggs Creek. The source was identified as a 1,500-gallon UST outside and adjacent to the northwest corner of the dormitory building. Soil was excavated and removed from hillsides and roadways in April 2011. The UST and associated pipes, as well as affected soil in the area of the UST, were removed in November 2011. Full excavation of all potentially affected soil in one subarea was not possible, and residual contamination was left in place 4 feet below the ground surface. Excavation was covered in plastic sheeting, backfilled with clean soil, and capped with plastic sheeting. The Santa Clara County Department of Environmental Health (DEH) indicated that residual contaminated soils on the site could pose an unacceptable risk if the site is disturbed by grading, excavation, or the installation of water wells; however, the clean-up was considered completed and the case was closed in February of 2013. The levels of residual contamination and any associated risk are expected to reduce with time (Santa Clara County DEH 2013).

Lead, Asbestos, and Other Hazardous Materials in Buildings

Hazardous materials are commonly found in older building materials. Before 1978, lead compounds were used in many interior and exterior paints. Before the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Materials suspected of containing asbestos observed at the site include flooring, wall materials, ceiling tiles, window putty, fire doors, wire insulation, chalkboards, pipe insulation, and roofing shingles. In addition, steam piping with suspect asbestos-containing insulation, was noted in crawlspaces beneath the buildings (ERM 2012).

Other common items present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats, can contain hazardous materials that may pose a health risk if not handled and disposed of properly. Among these hazardous materials are polychlorinated biphenyls (PCBs), which were used in hundreds of industrial and commercial applications because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties. Equipment on the project site that might contain PCBs includes electrical equipment and thermal insulation material (e.g., fiberglass, felt, foam, or cork). Older, pole-mounted electrical transformers can also contain PCBs.

Underground Storage Tanks and System Piping

As indicated above, a UST was removed from the site in November 2011. The tank and associated piping were adjacent to the former dormitory (demolished before MROSD purchased the property). In addition to the UST associated with the dormitory boiler, there could be three additional USTs at the site, which are summarized below.

Additional Boiler UST

Archive drawings depicted the 1,500-gallon storage tank feeding the dormitory boiler in a different location than that of the removed UST on the north side of the building. A second UST may potentially be located on the south side of this same building; however, evidence of such, other than the archive drawings, was not observed in the field (ERM 2012). Because archive review indicated only one central boiler and associated heating oil storage tank was located on the site (with steam piping extended from this one location to supply other buildings within the Village), it is not anticipated that there is an additional UST in this area (ERM 2012).

Pool Heater UST

A UST associated with swimming pool heating equipment, located downhill from the former pool, was identified on blueprints reviewed during site investigations conducted by ERM in 2012, but not observed on the site.

Gasoline UST

Photographs from 1951 show a single fueling pump that appears to be located south of the former main house. ERM (2012) estimated that the associated gasoline UST was 1,500 gallons.

Pipes

Various pipes extend from the ground at the former Alma College site. The exact uses of most of these pipes are unknown, although they are assumed to be associated with natural gas, the former gasoline pump, and water supply. Some pipes, such as the 2-inch pipe observed along a central hallway in the main house during a site review conducted by ERM in 2012, are insulated and likely associated with hot water or steam supply for heating. As noted above, the insulation used on such pipes often contains asbestos.

Other Potentially Hazardous Equipment

An incinerator, assumed to have been used for burning of refuse, was identified in the basement of the dormitory on the former Alma College site during a site review conducted by ERM in 2012. The storage building includes a piece of equipment that appeared to be a kiln. Refuse, including containers of paint thinner and antifreeze, as well as refrigerators (which may contain refrigerants) were also noted. No staining was noted during ERM's 2012 site visit.

Petroleum, Timber, and Vineyards

Portions of the project site were leased for oil and gas rights, timber harvesting, and vineyard use at various times since initial development. Timber harvesting was reportedly conducted on site from approximately 1971 until 1979 (ERM 2012). Although oil and gas leases were issued during the 1950s, no documentation of oil and gas development on site was found through a review of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources Online Mapping System (ERM 2012).

Vineyard leases, for the planting and harvesting of grapes, were issued to Theobald Vineyard from approximately 1941 until 1946, for an area believed to be located along the north side of Dougherty Road and adjacent to a residence; and to St. Charles Vineyard from approximately 1978 until 1989 for an area in the vicinity of Bear Creek Road (ERM 2012). Previous site investigations have not found any indication that substantial quantities of pesticides were used in these operations (Questa 1995).

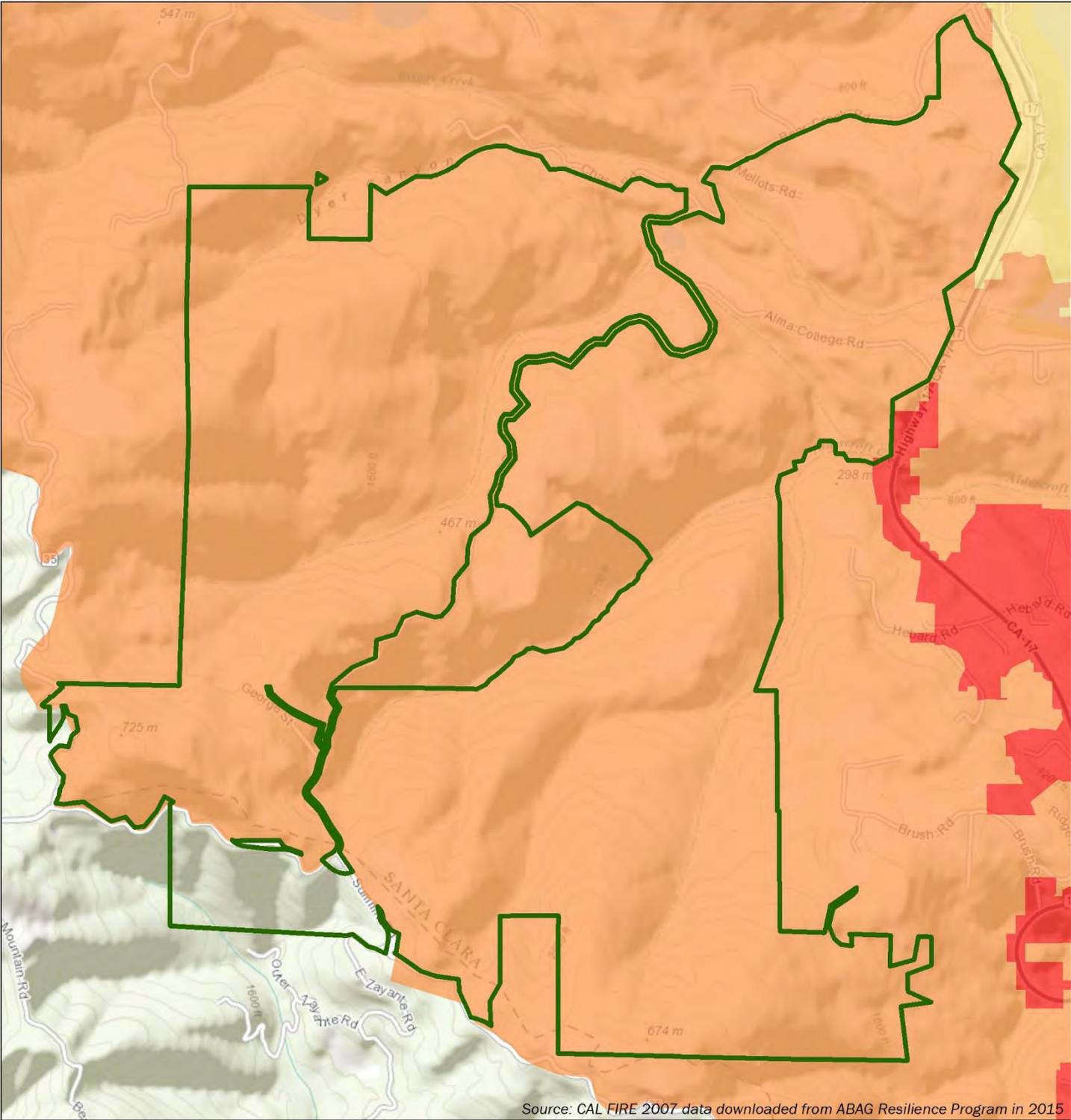
Mud Lake

Archive documents indicate various chemicals, including copper sulfate, Phygol-XL, 2,4-dichlorophenoxyacetic acid, Benoclor 3, and sodium arsenite powder, were reportedly used in Mud Lake to minimize weed and algae growth (ERM 2012). These are commonly used herbicides that generally do not pose an environmental health concern when applied in conformance with applicable regulations.

WILDLAND FIRE HAZARDS

The potential for wildfire is influenced by three factors: the presence of fuel (i.e., vegetation), the area's topography (i.e., slope and elevation), and air mass (i.e., temperature, relative humidity, wind speed and direction, cloud cover, precipitation amount and duration, and the stability of the atmosphere).

The Preserve is located in a State Responsibility Area, and the California Department of Forestry and Fire Protection (CAL FIRE) has the primary jurisdiction for wildland fire response. The project site is designated as a High Fire Hazard Severity Zone by CAL FIRE, based on the area's terrain and weather (CAL FIRE 2007; Exhibit 4.7-1). In addition, high fuel load is present in some areas of the Preserve, because of dead and downed tanoak trees. The wildfire threat is greater (very high) along Highway 17 east of the Preserve.



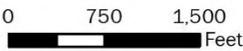
Source: CAL FIRE 2007 data downloaded from ABAG Resilience Program in 2015

Legend

 Bear Creek Redwoods Preserve

Fire Hazard Severity in State Responsible Areas

-  Very High
-  High
-  Moderate



Basemap: ESRI 2015
G15010027 01 005

Exhibit 4.7-1

Fire Severity in SRAs



The MROSD has undertaken various wildland fire management practices to effectively manage fuel loads and decrease wildland fire risk. Among these, MROSD annually maintains a series of disc lines (where vegetation is mechanically disked with a tractor to reduce dry fuel along ignition sources such as roads); vegetation is mowed or brushed back from roads and trails; roads, parking areas, and Preserve entrances are maintained to provide access for MROSD patrol vehicles and other emergency vehicles; and vegetation is cleared from around MROSD structures and residences according to CAL FIRE Defensible Space Guidelines. Preserve access points are closed when appropriate during periods of high fire risk. MROSD also has an active vegetation management program that has been targeting invasive plant species that can be fire hazards, such as French brooms (MROSD 2014).

Priorities for fuel management projects are determined by various objectives, such as reducing the ability of fires to cross boundaries and minimizing damage to developed areas and natural resources. If a fire occurs on or is threatening MROSD lands, staff help establish Incident Command if first on scene, evacuates or closes the Preserves for visitor safety, performs initial attack when safe and effective to do so, provides logistical assistance given staff knowledge of the property, monitors and attacks spot fires, and supplies additional water for primary agency engines. MROSD has a number of firefighting apparatus including a water tank truck, and smaller water tanks with hoses outfitted on Ranger vehicles, and portable water-pack/spray outfits for individual personnel. Fire training is also provided to MROSD personnel who may be involved in combating wildland fire (MROSD 2014).

SCHOOLS

One school, Lexington Elementary School, is located within 0.25 mile of the project site. Three other schools are near the project site including Lakeside Elementary School, which is located approximately 0.5 mile northwest of the project site; Los Gatos—Saratoga Observation Nursery School (Mountain School), which is located over 0.5 mile north of the site; and Los Gatos Preschool, which is located approximately 0.75 mile southeast of the project site.

AIRPORTS

The nearest airport is Bonny Doon Village Airport, which is located approximately 10 miles southwest of the Preserve. The nearest major airport is Mineta San Jose International Airport, located 12.5 miles northeast of the project site. The Preserve is not within the airport influence area.

4.7.2 Regulatory Setting

FEDERAL

Federal laws require planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and if such materials are accidentally released, to prevent or mitigate injury to health or the environment. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations are primarily contained in Code of Federal Register [CFR] Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (42 U.S. Code [USC] 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal (“cradle to grave”). EPA has authorized the California Department of Toxic Substances Control (DTSC) to enforce hazardous waste laws and regulations in California. Under the Resource Conservation and Recovery Act, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. Generators must

ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulates former and newly discovered uncontrolled waste disposal and spill sites. CERCLA established the National Priorities List of contaminated sites and the “Superfund” cleanup program.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, imposes hazardous materials planning requirements to help protect local communities in the event of accidental release. EPCRA requires states and local emergency planning groups to develop community emergency response plans for protection from a list of extremely hazardous substances (40 CFR 355 Appendix A). In California, EPCRA is implemented through the California Accidental Release Prevention Program.

Occupational Safety and Health Standards

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

US Department of Transportation Hazardous Materials Regulations

The U.S. Department of Transportation (USDOT) has developed regulations in Titles 10 and 49 of the CFR pertaining to the transport of hazardous substances and hazardous wastes. The Hazardous Materials Transportation Act is administered by the Research and Special Programs Administration of the USDOT. The act provides the USDOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of protecting the nation against risk to life and property. The USDOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers.

STATE

The primary state agencies with jurisdiction over hazardous materials management are DTSC and the State Water Resources Quality Control Board. Other state agencies involved in hazardous materials management are the California OSHA (Cal/OSHA), the California Governor’s Office of Emergency Services, California Department of Fish and Wildlife, Air Resources Board, California Department of Transportation (Caltrans), and California Integrated Waste Management Board.

California Public Resources Code Section 21151.4

California Public Resources Code (PRC) Section 21151.4 requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of a project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

California Government Code Section 65962.5

California Government Code Section 65962.5 requires DTSC to compile and maintain lists of potentially contaminated sites located throughout the State of California. This “Cortese List” includes hazardous waste and substance sites from DTSC’s database, leaking UST sites from the State Water Resources Control Board’s (SWRCB’s) database, solid waste disposal sites with waste constituents above hazardous waste

levels outside of the waste management unit, Cease and Desist Orders and Cleanup and Abatement Orders concerning hazardous wastes, and hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. The list is updated annually and maintained via DTSC's Brownfields and Environmental Restoration Program (Cleanup Program), and is accessible through the EnviroStor online database.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, the California Environmental Protection Agency adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The six program elements of the Unified Program are: hazardous waste generators and hazardous waste on-site treatment, USTs, aboveground storage tanks, hazardous material release response plans and inventories, risk management plans, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency – the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction.

California Code of Regulations

The California Department of Industrial Relations regulates implementation of worker health and safety in California. The Department of Industrial Relations includes the Division of Occupational Safety and Health, which acts to protect workers from safety hazards through its Cal/OSHA program and provides consultative assistance to employers. 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. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

The State of California has adopted USDOT regulations for the movement of hazardous materials originating within the state and passing through the state. State regulations are contained in Title 26 of the CCR. State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

Hazardous Waste Control Act

The Hazardous Waste Control Act regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act regulates water quality through the SWRCB and Regional Water Quality Control Board (RWQCB), including oversight of water monitoring and contamination cleanup and abatement.

Hazardous Materials Release Response Plans and Inventory Law

The Hazardous Materials Release Response Plans and Inventory Law aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored onsite, to prepare an emergency response plan, and to train employees to use the materials safely.

The California Health and Safety Code, Underground Storage Tank Regulations

Chapter 6.7 of the Health and Safety Code outlines the requirements for USTs. The code identifies requirements for corrective actions, cleanup funds, liability, and the responsibilities of owners and operators of USTs.

Hazardous Materials Emergency Response Plan

The State of California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the Office of Emergency Services, which coordinates the responses of other agencies in the area.

California Fire Code

The California Fire Code (CFC) establishes standards for the storage of hazardous materials. The CFC also requires the fire chief to be notified immediately when an unauthorized discharge becomes reportable under state, federal, or local regulations. Section 503 of the CFC establishes requirements for fire apparatus access roads.

LOCAL

Bay Area Air Quality Management District Regulations

As described in Section 4.2 “Air Quality,” the Bay Area Air Quality Management District (BAAQMD) Regulation 11, Rule 2 regulates activities involving handling of asbestos related to demolition, renovation, and manufacturing. Rule 2 prohibits visible emissions of asbestos. BAAQMD’s Rule 2 requires wet methods or use of HEPA filter-fitted ventilation systems, use of leak-tight chutes for getting materials to the ground, use of plastic barriers and HEPA filter fitted ventilation systems to contain areas being stripped. Rule 2 also requires an asbestos survey, including materials sampling and lab testing, to be performed by a qualified consultant before abatement activities to determine the category of asbestos. Specific disposal methods are also required under Rule 2.

Santa Clara County Office of Emergency Preparedness

The Santa Clara County Office of Emergency (OES) implements the State’s Right-to-Know Ordinance that gives Santa Clara County OES the authority to inventory hazardous materials used by businesses. Santa Clara County OES is responsible for the administration of the Santa Clara County emergency management program on a day-to-day basis and during disasters. The office is charged with providing the necessary planning, coordination, response support, and communications with all agencies affected by large-scale emergencies or disasters. Santa Clara County OES works in a cooperative effort with other disciplines such as law enforcement, fire, emergency medical services, state and federal agencies, utilities, private industry and volunteer groups to provide a coordinated response to disasters. The Emergency Services Coordinator also manages the Santa Clara County Emergency Operations Center (EOC). In any disaster, the EOC becomes the single focal point for centralized management and coordination of emergency response and recovery operations during a disaster or emergency affecting the Santa Clara Operational Area. The EOC will be activated when an emergency situation occurs that exceeds local and/or in field capabilities to adequately respond to and mitigate the incident.

Association of Bay Area Governments Multi-Jurisdictional Multi-Hazard Mitigation Plan

The purpose of the Association of Bay Area Governments multi-jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area is to maintain and enhance the disaster resistance of the region. The plan was prepared to meet the Disaster Mitigation Act of 2000 requirements to maintain Santa Clara County’s eligibility for the Federal Emergency Management Agency Pre-Disaster Mitigation and Hazard Mitigation Grant Programs.

The plan puts forth several mitigation goals and objectives that are based on the results of the risk assessment. To meet identified goals and objectives, the plan also includes specific recommendations for actions that can mitigate future disaster losses. The multi-jurisdictional plan includes the participating Counties of Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Solano, and Sonoma; many incorporated Cities and special districts within each of those counties. This plan has been formally adopted by each participating entity and is required to be updated a minimum of every 5 years.

Lexington Hills Community Wildfire Protection Plan

The Lexington Hills Community Wildfire Protection Plan (CWPP) is the product of a communitywide effort that resulted in recommendations about specific actions that can be taken to reduce the threat of wildfire. The CWPP rates community's hazard potential as moderate, high, very high, or extreme based on the following variables: fuels, topography, structural flammability, availability of water for fire suppression, egress and navigational difficulties, and other hazards, both natural and manmade. The Community Hazard Rating of Bear Creek is moderate.

The CWPP also identifies recommended fuel modification action items. The list, which was last updated in February of 2015, includes water storage of 20,000 gallons or more at the Bear Creek Stables (which is a Priority 1 project, the highest priority designated) and approximately 15 acres of Bear Creek landscape fuelbreak (which is a Priority 4 project, the lowest priority designated).

Certified Unified Program Agency

The Hazardous Materials Program, which is part of the Hazardous Materials Compliance Division within Santa Clara County Department of Environmental Health, is the CUPA for all areas of Santa Clara County other than the cities of Santa Clara, Gilroy, and Sunnyvale. The Hazardous Materials Compliance Division provides comprehensive environmental regulatory compliance inspection services to protect human health and the environment. Additionally, program personnel perform plan reviews and inspections associated with the construction, upgrading, and closure of hazardous materials storage facilities and equipment.

Santa Clara County General Plan

The Santa Clara County General Plan was adopted by the County Board of Supervisors in 1994. The Health and Safety Element within the County General Plan include the following policies relevant to hazardous material and human safety-related impacts within rural unincorporated Santa Clara County:

- ▲ **Policy R-HS 7:** Areas of significant natural hazards, especially high or extreme fire hazard, shall be designated in the County's General Plan as Resource Conservation Areas, with generally low development densities in order to minimize public exposure to risks associated with natural hazards and limit unplanned public costs to maintain and repair public infrastructure.
- ▲ **Policy R-HS 28:** Development projects shall be reviewed by the County Fire Marshall's Office for safety code compliance and should also be referred if necessary to the appropriate fire protection authority or district for further review and recommendations.

Midpeninsula Regional Open Space District Resource Management Policies

MROSD's resource management policies are used to help guide the overall planning, budgeting, and decision making processes for individual preserves and for District-wide programs. Per Policies FM-5 and WF-1, MROSD institutes fire and fuel management practices to protect forest resources and public health and safety. This includes managing vegetation to reduce the risk of catastrophic fire (Policy WF-4) and working with adjacent landowners and fire agencies to maintain adequate fire clearances (Policy WF-3). Through Policy WF-2, MROSD supports suppression of unplanned fires; while prescribed burns are supported by Policy WF-5. MROSD also maintains interagency fire management partnerships (WF-6).

Specific actions called for in these policies include the following:

- ▲ Maintain essential roads for emergency fire access, and forest management activities undertaken to reduce fire hazard.
- ▲ Maintain adequate fire clearance around MROSD structures and facilities.
- ▲ Encourage neighboring property owners to maintain adequate fire clearance around existing development. Consult with regulatory agencies to encourage that construction of new development maintains fire agency recommended setbacks for fire clearance between new development and MROSD forest and woodland.
- ▲ Evaluate the potential to reduce forest fuel loading through the removal of smaller trees to reduce forest floor fuel buildup and ladder fuels.
- ▲ Reintroduce fire as a resource management tool to reduce forest floor fuels and reestablish fire for ecosystem health where stand conditions, access, and public safety permit. Coordinate with other agencies for planning and implementation.
- ▲ Prepare wildland fire management plans for MROSD lands that address, at a minimum, public safety, MROSD staff and firefighter safety, MROSD infrastructure including residences and roads, natural resource protection (particularly special status species), cultural resources, and vegetation management for fire protection and fire behavior and hazardous fuels modification.
- ▲ Coordinate with fire agencies and local communities to identify locations where additional fire infrastructure is desirable and practical (e.g., hydrants, water tanks, helicopter zones, safety zones, fuel breaks, consistent with the incident command system (ICS). Work cooperatively with these groups to install needed infrastructure.
- ▲ Require lessees of MROSD land or structures to maintain fire hazard reduction measures as directed.
- ▲ Prohibit activities that have a high risk of sparking fires during periods of extreme fire hazard.
- ▲ Close Preserve areas of particular concern during extreme fire weather, as appropriate, and increase patrol levels where appropriate.
- ▲ Participate in county Fire Safe Councils and Community Wildfire Protection Plan (CWPP) efforts.
- ▲ Complete and distribute to fire agencies up-to-date maps of Preserve infrastructure including existing road network available for wildland fire management, helicopter landing zones, safety zones, evacuation routes, and other pertinent information.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and policies of the Preserve Plan related to hazards and hazardous materials would be implemented if the Preserve Plan is approved:

Goal AC1: Include protection of cultural resources, or mitigation for alteration and/or removal of such resources

Obj AC-1.2 Use Best Management Practices for preservation and/or removal of all structures and cultural landscapes.

Goal MO2: Address environmental hazards

Obj MO-2.2 Remediate contaminated areas and other hazards associated with past landowners and former land use practices

Goal MO3: Reduce wildfire risk

Obj MO-3.1 Manage wildland fuels and reduce fire hazards to natural resources, structures, and facilities

Obj MO-3.3 Facilitate wildland fire response and suppression

Obj MO-3.3 Develop fire response procedures and plan for lease areas

4.7.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

The following analysis considers the potential for hazardous conditions to result from: the activities outlined in the Preserve Plan, including the potential to disturb existing contamination; use, storage, or disposal of hazardous materials; and exposure of people or structures to wildland fire. The evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions on or near the project site to determine the potential for project implementation to result in an increased health or safety hazard to people or the environment. This includes previous Phase I ESAs prepared for the project site, and SWRCB and EPA hazardous materials database information. In determining the level of significance of potential impacts, the analysis assumes that development in the project area would comply with relevant federal, state, and local ordinances and regulations. Existing conditions, as described above, are the conditions on the site and properties within approximately 1 mile of the project site at the time the NOP for this EIR was issued (June 2015).

Hazardous Materials

For the purpose of this assessment, hazardous materials are defined as any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety, or to the environment, if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code, Section 25501 [o]). Although often treated separately from hazardous materials, petroleum products (including crude oil and refined products such as fuels and lubricants) and natural gas are considered in this analysis because they might pose a potential hazard to human health and safety if released into the environment.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a public health and hazards impact is considered significant if implementation of the project would do any of the following:

- ▲ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ▲ create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- ▲ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- ▲ be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- ▲ result in a safety hazard associated with private airstrips or airports;
- ▲ impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- ▲ expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, or otherwise increase the risks of fire damage to these areas.

IMPACT ANALYSIS

Impacts not discussed further

The project is not located within an airport land use plan or within 2 miles of a public airport, public use airport, or private airstrip; therefore, there would be no safety hazard for people residing or working in the area.

There are no adopted emergency response plans or emergency evacuation plans affecting the project site. Therefore, implementation of the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan.

Impact 4.7-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction and maintenance activities would increase the regional transportation, use, storage, and disposal of hazardous materials and petroleum products. Improper handling, unsound disposal methods, transportation accidents, or fires, explosions or other emergencies could expose construction workers, nearby persons or residents, and the surrounding environment to accidental releases of potentially hazardous materials. However, MROSD and its contractors would be required to comply with applicable federal, state, and local regulations for handling hazardous materials, including requirements related to reporting accidental releases. Compliance with these regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction. This impact would be **less than significant**.

Hazardous Materials Use during Construction

Construction activities would temporarily increase the regional transportation, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals. The USDOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors and minimize potential for accidental spills, leaks, toxic releases, and fires.

In addition to 40 CFR 112, SWRCB Construction General Permit (2009-0009 DWQ) requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and best management practices (BMPs) to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas.

Improper handling, unsound disposal methods, transportation accidents, or fires, explosions or other emergencies could expose construction workers, nearby persons or residents, and the surrounding environment to accidental releases of potentially hazardous materials. However, contractors would be required to comply with applicable federal, state, and local regulations for handling hazardous materials, including requirements related to reporting accidental releases. Compliance with the aforementioned regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction.

Hazardous Materials Use during Operation

While the recreational uses could be developed under project are not expected to introduce any unusual hazardous materials to the area, some typical hazardous materials would be used in varying amounts during operation. Grounds and landscape maintenance could utilize a wide variety of commercial products formulated with hazardous materials (including fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides). A controlled amount of pesticides would occasionally be applied to control invasive weeds. Pesticide applications would comply with MROSD's adopted integrated pest management plan, as well as all label instructions, and all applicable local, state, and federal regulations. Equipment and materials stored on-site periodically for maintenance and management purposes would be limited to that needed to perform work.

Hazardous materials are required to be stored in designated areas designed to prevent accidental release to the environment. California Building Code requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal and state laws related to the storage of hazardous materials would be implemented to maximize containment (through safe handling and storage practices described above) and to provide for prompt and effective clean-up if an accidental release occurs. As described above for construction, conformance with established policies would reduce the potential for improper handling of materials and wastes that could result in accidental releases.

Implementation and compliance with the uniformly applicable plans, standards, and special provisions described above would reduce any potential impacts associated with the transport, use, and disposal of hazardous materials during operation to a **less-than-significant** level.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.7-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment.

Hazardous materials could be associated with building materials, other historical uses of the Preserve (such as USTs and chemical application to Mud Lake), and areas of contamination that have not yet been identified. There is potential for site activities to result in the release of these hazardous materials into the environment, which would create a **potentially significant** hazard to the public or the environment.

Potentially Hazardous Building Materials

Existing structures are believed to contain hazardous materials, including asbestos, lead, and heavy metals—primarily because many of the existing structures were constructed when the use of these materials was not heavily restricted. Demolition of structures could result in inadvertent release or improper disposal of debris containing potentially hazardous materials; however, federal, state, and local regulations have been developed to address potential impacts related to the handling and disposal of hazardous materials during demolition. Potential impacts would be minimized through adherence to regulatory standards that prescribe specific methods of material characterization and handling, as described below.

Handling of asbestos and lead is regulated by state law and BAAQMD rules (as summarized above). These rules include guidelines to minimize exposure of construction workers (including monitored and enforceable exposure limits) and release of these substances into the environment. Asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards. Specific actions required by law have been incorporated into the project as Environmental Protection Measure HAZ-1 (see Appendix C), and include the following:

- ▲ **Asbestos.** Before demolition, structures would be tested for the presence of asbestos-containing materials. Any asbestos would be removed and disposed of by an accredited contractor in compliance with federal, state, and local regulations (including the Toxic Substances Control Act and the National Emission Standard for Hazardous Air Pollutants). Compliance with these regulations would result in the safe disposal of asbestos-containing materials.

Title 8 of the California Code of Regulations (CCR), Section 1529 “Asbestos” is enforced by Cal OSHA and sets very strict exposure limits for employees engaged in abatement and remediation activities and requires employers to perform an initial exposure assessment as well as daily monitoring of employee exposure. Section 1529 also includes a list of specific compliance measures including (but not limited to) vacuum cleaners with HEPA filters, wet methods, ventilation systems with HEPA filters, isolation/containment of asbestos dust-generating areas, as well as prohibitions against use of compressed air to remove asbestos without a ventilation system, dry sweeping/shoveling of asbestos, and use of high-speed abrasive disc saws without proper point of cut ventilators.

Demolition of any structures containing asbestos would also be subject to BAAQMD Regulation 11, Rule 2, which prohibits visible emissions of asbestos. BAAQMD’s Rule 2 requires wet methods or use of HEPA filter-fitted ventilation systems, use of leak-tight chutes for getting materials to the ground, use of plastic barriers and HEPA filter-fitted ventilation systems to contain areas being stripped. Rule 2 also requires an asbestos survey, including materials sampling and lab testing, to be performed by a qualified consultant before abatement activities to determine the category of asbestos. Specific disposal methods are also required under Rule 2.

- ▲ **Lead-based paint or other coatings.** A survey for indicators of lead-based coatings would be conducted before demolition to further characterize the presence of lead on the project site. For the purposes of compliance with Cal/OSHA regulations, all coated surfaces would be assumed to potentially contain lead. There is also a potential for soil contamination because of deposition of deteriorated (i.e., flaked, peeled, chipped) lead-based paint adjacent to structures where lead-based exterior paints were used. Loose or peeling paint may be classified as a hazardous waste if concentrations exceed total threshold limits. Cal/OSHA regulations require air monitoring, special work practices, and respiratory protection during demolition where even small amounts of lead have been detected.
- ▲ **Heavy metals and PCBs.** Spent florescent light bulbs and ballasts, thermostats, and other electrical equipment may contain heavy metals, such as mercury, or PCBs. If concentrations of these materials exceed regulatory standards, they would be handled as hazardous waste in accordance with hazardous waste regulations.

Demolition of existing structures could result in exposure of construction personnel and the public to hazardous substances. Construction workers, individuals at the Bear Creek Stables, and other recreational visitors could potentially be exposed to airborne lead-based paint dust, asbestos fibers, and/or other contaminants because of demolition activities. However, because the proposed project would be required to

comply with the CCR and BAAQMD rules, the proposed project would not create a significant hazard to the public or environment.

Other Potential Sites of Contamination

Other sources of potential contamination on the project site include the suspected and removed USTs, the application of chemicals in Mud Lake, and other documented uses of the property. There is no evidence that past uses of the project site associated with leased for oil and gas rights, timber harvesting, and vineyards have resulted in contamination of the project site. Although archive documents indicate various chemicals were reportedly used in Mud Lake to minimize weed and algae growth (ERM 2012), it is not known if these past activities have impacted surface or groundwater, or the sediments in and around the pond.

As indicated above, three USTs and associated piping could be located on the project site. This equipment could contain potentially hazardous materials, or be associated with existing soil contamination, and the disruption of these sites during excavation could result in the release or spread of hazardous materials. In addition, residual contamination was capped and left in place when the former Alma College UST was removed.

Undocumented Contamination Sites

There is a potential for undocumented hazardous wastes associated with past land uses to be disturbed during activities covered in the Preserve Plan (particularly at the former Alma College site).

Grading and excavation activities may also expose construction workers and the public to hazardous substances present in the soil or groundwater that are not anticipated based on information about existing site conditions. If any previously unknown contamination is encountered during grading or excavation, the removal activities required could pose health and safety risks.

Adverse impacts could result if construction activities inadvertently disperse contaminated material into the environment. For example, if contaminated groundwater were present, dewatering activities during construction could cause contaminated groundwater to migrate farther in the groundwater table or cause contaminated groundwater to be released into area creeks. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water. In addition, inadvertent disturbance of asbestos in underground utilities could result in airborne asbestos fibers. Incorporation of standard best management practices and avoidance measures into the project and coordination with regulatory agencies would reduce the potential for negative effects that could result from construction on known contaminated sites. However, the project site could be affected by undocumented contamination that has not been characterized or remediated. Based on the findings of the archive reviews and site inspection, additional investigation at the site is warranted to determine whether there are additional underground structures on site and the potential for associated soil and/or groundwater impacts. This would be a **potentially significant** impact.

Mitigation Measure 4.7-2a: Conduct a hazardous materials survey and limited Phase II investigation.

An in-depth hazardous materials survey shall be conducted to further assess the presence of hazardous materials onsite and to provide an inventory of equipment containing hazardous materials that will need to be removed and appropriately disposed.

Before initiation of grading or other groundwork, MROSD will conduct focused soil sampling at the former Alma College site. This investigation will follow the American Society for Testing and Materials standards for preparation of a Phase II ESA and/or other appropriate testing guidelines. Specifically, soil and groundwater samples shall be collected in the areas of former structures near the rear entrance to the former Alma College site (e.g., print shop, machine shop, landfill at village site, storage) and analyzed for petroleum hydrocarbons, VOCs, and priority pollutant metals.

Based on the results and recommendations of the ESA-level investigation described above, MROSD shall prepare a work plan that identifies any necessary remediation activities, including excavation and removal of on-site contaminated soils, and redistribution of clean fill material on the project site. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site and will be implemented under the oversight of applicable regulatory agencies. These measures may include: soil profiling and identification of appropriate landfill facilities for contaminated materials and onsite application locations for other soils, plans for stockpile of soil that segregates clean and potentially contaminated materials, preparation of a health and safety plan for protection of workers, and preparation of a transportation plan that identifies approved haul routes for transport of contaminated materials.

Mitigation Measure 4.7-2b: Conduct a geophysical survey in the suspected locations of USTs.

A geophysical survey shall be conducted at the former Alma College site to confirm the presence or absence of additional underground structures and to determine the extent of associated piping, primarily in the suspected locations of additional USTs (south of the dormitory/plant building, downslope from the pool/Roman Plunge, and south of the former main house). Soil and/or groundwater sampling shall be conducted in the vicinity of these structures and piping to determine whether there is potential subsurface contamination. Soil and groundwater samples shall be analyzed for petroleum hydrocarbons, volatile organic compounds (VOCs), and priority pollutant metals. If the results indicate that contamination exists at levels above regulatory action standards, the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including Santa Clara County DEH, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination.

Mitigation Measure 4.7-c: Notify Santa Clara County Department of Environmental Health before conducting earth work near the former Alma College underground storage tank.

MROSD shall identify the location of the former Alma College UST on maps used for planning facilities on the project site. If any earthwork or water wells are proposed on, or in the immediate vicinity of, the UST site, MROSD shall notify the Santa Clara County DEH before grading or evacuation of the site, or the installation of water wells. MROSD shall implement any actions identified by Santa Clara County DEH to mitigate the disturbance of remedial contamination. These actions may include additional sampling or preparation of a health risk assessment.

Mitigation Measure 4.7-2d: Conduct sediment and surface water sampling in Mud Lake.

Before opening the site to public access, MROSD shall conduct sediment and surface water sampling to determine whether historical chemical use in the lake has resulted in residual impacts. Sediment and surface water should be analyzed for petroleum hydrocarbons, VOCs, and pesticides. MROSD will coordinate with Santa Clara County DEH to determine what, if any, further actions are necessary based on the results of the water and soil sample analyses. Recommended actions may include localized removal of materials, in situ remediation actions, and limitations on public access to the site.

Mitigation Measure 4.7-2e: Prepare a hazardous materials contingency plan.

A hazardous materials contingency plan shall be prepared before the initiation of ground disturbing activities that describes the actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, presence of USTs, or buried building material. The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project.

If at any time during the course of constructing the proposed project evidence of soil and/or groundwater contamination with hazardous material is encountered, MROSD shall immediately stop the project and contact the CUPA. The project shall remain stopped until there is resolution of the contamination problem (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of the CUPA and RWQCB.

Significance after Mitigation

Through implementation of Mitigation Measure 4.7-2a, MROSD would further characterize the potential for there to be undocumented areas of contamination on the site. With implementation of Mitigation Measures 4.7-b through 4.7-2e, additional survey of the areas suspected of having additional contamination would be conducted. Mitigation Measure 4.7-2e would establish procedures to follow if additional hazardous materials are encountered during construction. With the implementation of these additional studies and any remediation that is developed as a result of the investigations, as well as the contingency procedures for other potentially hazardous wastes, this impact would be less than significant.

Impact 4.7-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school.

Because of the limited quantities of potentially hazardous materials required for the project, and the applicability of federal, state, and local regulations that would reduce the potential for hazard associated with the transport, use, and storage of hazardous materials, the project would have a **less-than-significant** impact on the school within 0.25-mile of the project site following completion of the consultations required by PRC Section 21151.4.

Schools are considered a particularly sensitive receptor relative to hazardous material exposure because there is a concentration of children that is repeatedly exposed to environmental conditions at the school site for extended periods of time. As discussed above, Lexington Elementary School is within 0.25-mile of the project site.

During construction, demolition, and excavation activities, the project would potentially produce hazardous air emissions or involve the handling of extremely hazardous wastes. As discussed above, the project would comply with federal and state regulations that are designed to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment to an acceptable level. Although existing protective measures and regulations would be sufficient to ensure that hazardous materials stored, used, transported, and disposed of as part of the proposed project would not pose a significant hazard to the public or the environment, including individuals at schools within 0.25 mile of the project site, under normal conditions, these standard procedures would not obviate the potential for the accidental release of an extremely hazardous substance (as defined in PRC Section 21151.4) in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25-mile of a school. Therefore, MROSD would be required to consult with the Los Gatos Union School District pursuant to PRC Section 21151.4.

Because of the limited quantities of potentially hazardous materials required for the project, and the applicability of federal, state, and local regulations that would reduce the potential for hazard associated with the transport, use, and storage of hazardous materials, the project would have a **less-than-significant** impact on schools within 0.25-mile of the project site following completion of the consultations required by PRC Section 21151.4.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.7-4: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

While the introduction of persons into open space, including construction and maintenance workers and trail users, has the potential to increase the risk of fire, the preparation of the Preserve Plan provides an opportunity to enhance MROSD's fire safe practices to further reduce the risk and potential severity of a wildfire. Implementation of the practices outlined in MROSD's Resource Management Policies and

Environmental Protection Measures would reduce the potential for construction, maintenance, and routine use to ignite dry vegetation through introduction of ignition sources (including construction vehicles and equipment such as power tools and torches that may create sparks). With these BMPs, construction and operation activities would have a **less-than-significant** impact.

As discussed above, the Preserve is in the Lexington Hills CWPPP, and MROSD currently implements the following fire mitigation efforts on the Bear Creek Redwoods Preserve: brushing single track trails by hand annually; brushing roads with an articulating tractor brushing arm on an approximately three-year rotation; grading roadways to ensure vehicle access; annual fire disking; securing with gating and fencing, and posting notices, in all hazardous areas during fire season; enforcing MROSD regulations banning smoking and open fires; patrol trucks equipped with slide-on pumper units, and a defensible space permit policy that allows neighboring landowners to remove vegetation from MROSD property within 100 feet of their homes (Lexington Hills 2009). While the introduction of persons into open space, including construction and maintenance workers and trail users, has the potential to increase the risk of fire, the preparation of the Preserve Plan provides an opportunity to enhance MROSD's fire safe practices to further reduce the risk and potential severity of a wildfire. Implementation of the practices outlined in MROSD's Resource Management Policies and Environmental Protection Measures HAZ-2 through HAZ-6 in Appendix C would reduce the potential for construction, maintenance, and routine use to ignite dry vegetation through introduction of ignition sources (including construction vehicles and equipment such as power tools and torches that may create sparks). The existing fuelbreak along Highway 17, which has a very high potential for wildfire (as discussed above), would also be enhanced as part of the Preserve Plan.

Standard MROSD fire management practices would include maintaining defensible space around structures, establishing strategic fuel breaks, conducting regular staff training in fire response, and maintaining emergency access roads, turnarounds, and landing zones. The Preserve Plan also includes actions to control invasive plant species that can be fire hazards, such as French broom. Water supplies for firefighting would be appropriately sized and located according Santa Clara County standards to provide water sources for fire suppression and would include Upper Lake, which is on-site. With these plan elements and the proposed Environmental Protection Measures, construction and operation activities would have a **less-than-significant** impact related to exposure of people or structures to wildland fire.

Mitigation Measures

No mitigation measures are necessary.

4.8 HYDROLOGY AND WATER QUALITY

This section provides the environmental and regulatory background necessary to analyze the impacts of the proposed Preserve Plan to hydrology and water quality. Effects on wetlands and waters of the United States are addressed in Section 4.3, “Biological Resources.”

One comment from the public pertaining to hydrology and water quality was received during public review of the Notice of Preparation for the proposed project. The comment requested evaluation of measures to improve drainage on-site. Analysis of impacts related to stormwater and flooding is included in this section, including discussion of measures identified in the Preserve Plan to improve stormwater handling and reduce erosion.

4.8.1 Environmental Setting

REGIONAL CLIMATE AND HYDROLOGY

The Preserve is located, primarily, on the eastern slope of the Santa Cruz Mountains. The area has a Mediterranean climate, and most rainfall occurs between November and April. Although the summit of the mountain range can receive 40 to 50 inches of precipitation a year, averages around 20 to 30 inches are more typical of the area. Due to a rain shadow effect, the quantity of precipitation on the eastern side of the mountain range is generally much less than on the west. In nearby Los Gatos, the average annual precipitation is roughly 27 inches (Western Regional Climate Center 2015). A notable climactic feature of the Santa Cruz Mountains is the occurrence of storms of extreme intensity and duration that can be responsible for periodic flooding in the area. Many smaller creeks and streams are intermittent, reflecting this seasonal distribution of rainfall. Snow falls a few times a year on the highest ridges.

Lexington Reservoir

Lexington Reservoir, which is located east of the Preserve, is an artificial lake formed by an earthen dam on Los Gatos Creek. The reservoir, which is part of the Santa Clara Valley Water District (SCVWD), captures surface water runoff for recharge of the groundwater basin. The 2.5-miles-long reservoir has a capacity of 19,044 acre-feet of water, and its surface area is 412 acres (SCVWD 2015a). Potential inundation areas in the event of a dam failure are mapped north of the reservoir and do not include the Preserve (SCVWD 1995).

GROUNDWATER CONDITIONS

Groundwater is water that flows beneath the surface through small pores and cracks in the rock and soil. Groundwater collects in basins that are typically located in valleys where water accumulates in sand and gravel deposits. The California Department of Water Resources (DWR) delineates groundwater basins and provides descriptions that include information about the geology, groundwater quantity and quality, and current groundwater management practices in the basins (see Bulletin 118).

The project area is not in a groundwater basin delineated by DWR. Groundwater on the project site may contribute to the Santa Clara subbasin of the Santa Clara Valley groundwater basin, which is located north of the project site, near the mouth of Lexington Reservoir and the Los Gatos city limits. Groundwater in the Santa Clara subbasin generally flows to the northwest, toward San Francisco Bay. Groundwater quality monitoring conducted for domestic and local supply wells in the northern part of Santa Clara County in 2014 indicates that groundwater in the area is generally high quality and meets drinking water standards without treatment (SCVWD 2015b).

The project site is underlain by Vaqueros sandstone. The southern half of the Preserve, generally above 900 feet elevation, is characterized by coherent bedrock, cut by large, near-vertical fracture zones at intervals about 0.5 mile. Aldercroft Creek, Webb Creek, and Collins Creek all have source springs and flow-accretion reaches seemingly originating in this regional set of fractures (Balance Hydrologics 2015). Below about 900 feet, most of the northern half of the Preserve is underlain by deep-seated bedrock landslides, which locally contain groundwater, although discontinuously and with less predictable water tables and persistence of yield. For example, small fault blocks and tectonic shudder ridges create a pair of pools along the toe of a landslide area just north of Bear Creek Stables (Balance Hydrologics 2015).

The Vaqueros formation, the most extensive of local aquifers, yields low rates of the least-mineralized water in the area. Typical sustainable yields in the area are 5 to 10 gallons per minute for 300 to 400-foot wells. MROSD has an existing well in the southwestern corner of the Preserve, which is one of the more productive wells known on the summit (Balance Hydrologics 2015a). The well was drilled into a large fracture zone at the head of an unnamed tributary to Aldercroft Creek. Mapped outcrops near the well trend east of north, in line with the tributary. As in many other places in the Santa Cruz Mountains, fractures trending just east of north tend to be the most productive and reliable locations to develop groundwater (Balance Hydrologics 2015b).

The Butano fault is located near the existing well, so it is theoretically possible for the well to draw potentially undesirable water quality from the fault zone (Balance Hydrologics 2015b).

PRESERVE GEOLOGY AND ECOLOGY

The project site is located around and includes the San Andreas Rift Zone, which has created highly fractured rock formations and terrain that is steep and prone to landslides, resulting in thin soils, with little capacity to hold water. The area is susceptible to debris flows (i.e., fast-moving downslope flows of mud that may include rocks, vegetation, and other debris). Around the creeks, soils are generally relatively soft and chronically wet (Best 2010). (For more information, refer to Section 4.5, “Geology, Soils, and Seismicity.”)

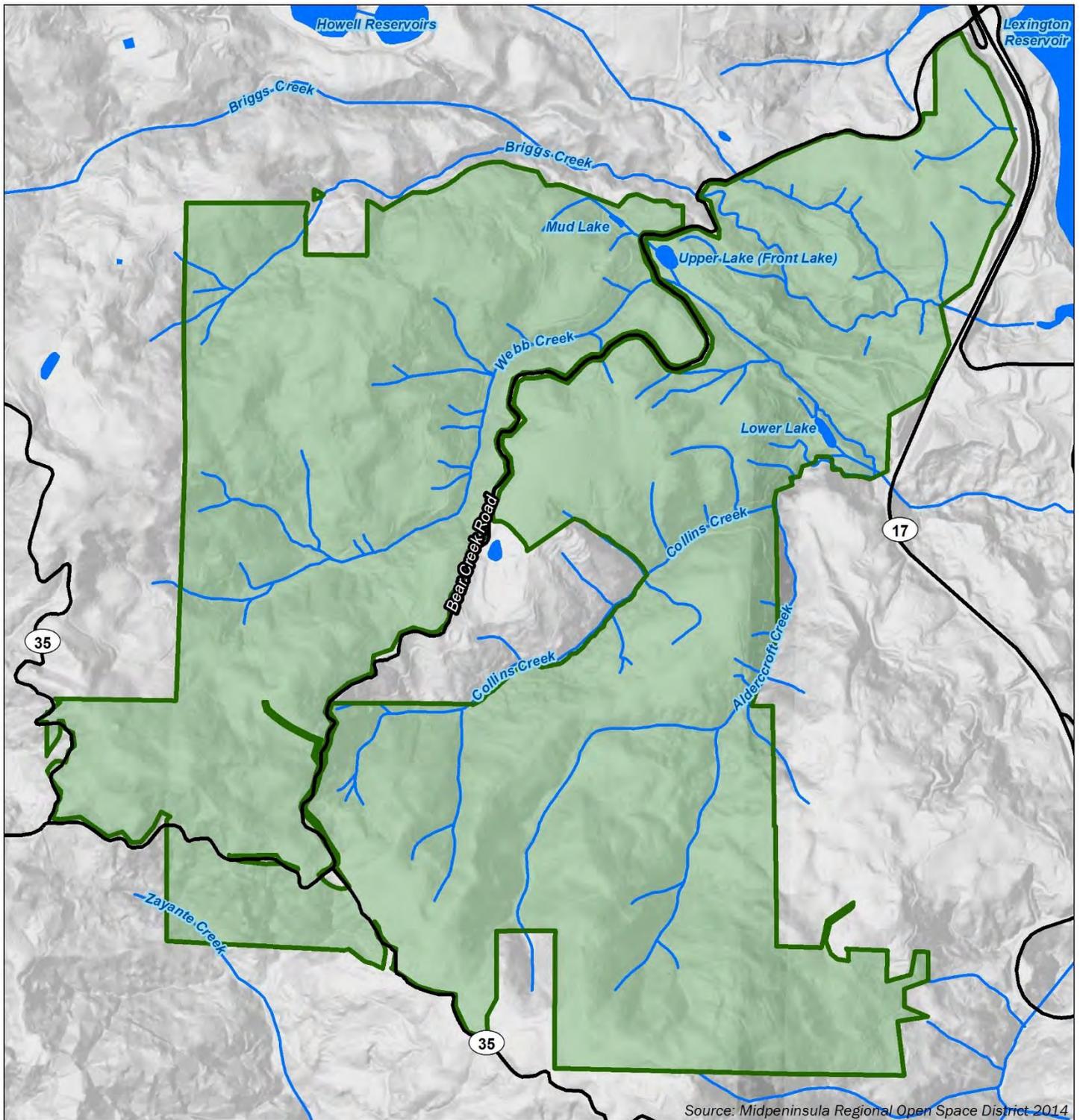
Streams in the area are continually being incised by the flashy water flows and are typically characterized by alluvial substrates overlying chiefly bedrock channels. California chaparral, resistant to the combination of thin soils, low water storage capacity, and dry summer conditions, dominates the vegetation community. This community is prone to fire events that denude hillsides and produce mass movements of soils into the stream channels when winter rains occur.

PRESERVE HYDROLOGY

Several seasonal and perennial streams drain through the Preserve into Lexington Reservoir, which leads to Los Gatos Creek and eventually the San Francisco Bay. These include Aldercroft Creek, its tributary Collins Creek in the south-southwest reaches of the Preserve, and Webb Creek in the southwest, which flow generally to the northeast through the entire project area. In the northern part of the Preserve, Dyer Creek and Briggs Creek flow from the east to the southwest. Briggs Creek drains the entire northeast end of the Preserve, except for a small area at the extreme north end that drains directly to Lexington Reservoir. Dyer Creek drains the extreme northwestern corner of the Preserve before its confluence with Briggs Creek. Additional aquatic resources on the Preserve include three permanent, man-made ponds: Mud Lake, Lower Lake, and Upper Lake (Exhibit 4.8-1). Upper Lake was created in the 1850s by damming Webb Creek to pressure-drive the site’s saw-mill (Knapp 2010). It is no longer dammed. The ponds, several storage tanks, and multiple spring and creek diversions have existed as developed water resources since the early 1900s.

Watersheds

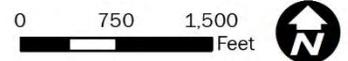
Exhibit 4.8-2 shows the hydraulic units based on the 10-digit classification system used by US Geological Survey and the Natural Resources Conservation Service to delineate the watershed boundaries. Hydrologic unit boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface waters. (Note that hydrologic units are



Source: Midpeninsula Regional Open Space District 2014

Legend

- Bear Creek Redwoods Preserve
- Major Roads
- Streams

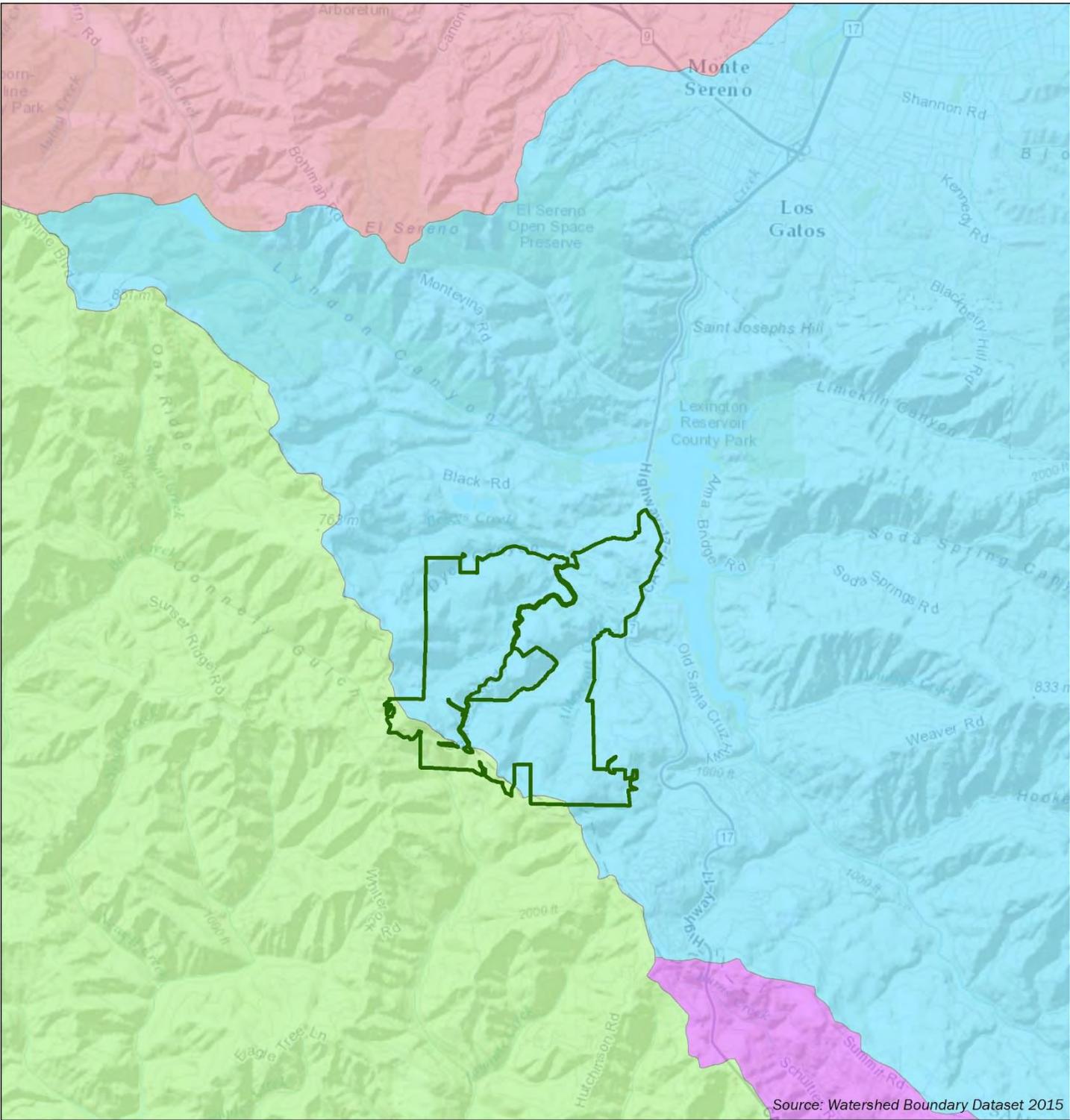


Basemap: NED 2015
G15010027 01 015

Exhibit 4.8-1

Hydrology

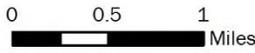




Source: Watershed Boundary Dataset 2015

Legend

- Bear Creek Redwoods Preserve
- Monterey Bay
- San Lorenzo River
- Guadalupe River-Frontal San Francisco Bay Estuaries
- Saratoga Creek-Frontal San Francisco Bay Estuaries



Basemap: ESRI 2015
G15010027 01 013

Exhibit 4.8-2

Watersheds



only synonymous with classic watersheds when their boundaries include all the source area contributing surface water to a single, defined outlet point.)

Most of the Preserve is in the Guadalupe River watershed, which is bounded on the south by the Diablo Range, on the west by the Santa Cruz Mountains, on the east by Coyote Creek, and on the north by San Francisco Bay. Within the watershed, Alamitos, Guadalupe, Ross, Canoas, and Los Gatos Creeks feed into the Guadalupe River on the Valley floor. Six major reservoirs exist in the watershed: Calero Reservoir on Calero Creek; Guadalupe Reservoir on Guadalupe Creek; Almaden Reservoir on Alamitos Creek; and Vasona Reservoir, Lexington Reservoir, and Lake Elsmar on Los Gatos Creek. The southwestern edge of the Preserve is in the San Lorenzo River watershed. Located primarily in Santa Cruz County, this watershed flows through the San Lorenzo Valley to the Pacific Ocean at Monterey Bay. No actions are proposed within the San Lorenzo River watershed.

Potential for Flooding

Due to elevation, the Preserve is not subject to widespread flooding. In addition to the potential for dam failure noted below, localized flooding in the immediate vicinity of surface waters could occur following heavy rain.

Effects of Existing Roads and Trails

A systematic inventory of the condition and erosion potential along approximately 22.5 miles of existing roads and trails was conducted for the project site by Timothy Best, CEG, in August 2010. Inventoried sites included all stream crossings, areas of poor drainage, and landslides. Road drainage and landslide sites were only inventoried if they had the potential to result in substantial future erosion or road damage. Of the 183 sites inventoried, 86 were identified as having moderate to high treatment priority, indicating that either significant damage has (or could) occur during average or infrequent large magnitude storms, or erosion is expected only during less frequent storm events but could involve damage to trails that impedes access or results in delivery of a substantial amount of sediment to the aquatic system. Principle areas of concern identified in the inventory are road surface erosion, landslides, and stream crossings, as discussed below.

Road Surface Erosion

Of the 103 sites inventoried 12 have high treatment priority and 34 have moderate priority. Most drainage problems are due to lack of effective drainage structures, poor alignment, steep road gradient, or close proximity to streams.

Landslides

Of the 19 landslides inventoried, two have high treatment priority, and four have moderate priority. Many of the landslides are due to, or exacerbated by, road cuts and include cutbank failures, fillslope failures, and natural instability of hill slopes.

Stream Crossings

The existing trails and roads on the Preserve cross the onsite streams in multiple places. These are largely informal roads developed for former uses of the property, including logging activities. The road and trail erosion inventory (Best 2010) identified 60 existing stream crossings; including 31 culverts, 27 unculverted fords (i.e., where the road or trail dips through a watercourse), and two bridges. Of these sites, 44 were rated with moderate or high treatment priority.

Serious erosion problems are often the result of flood flows exceeding the capacity of existing culverts, culvert plugging, and stream diversion. Many of the culverts on the Preserve are over 30 years old, rusting, and starting to fail as a result of age, and there are several located where the crossing embankments are oversteepened and partially supported by crib logs and timbers, which raises geotechnical concerns related to long term stability (Best 2010: 17). Of the 27 ford crossings identified in the road and trail erosion inventory, eight are rocked. These crossings, which tend to be located on low use roads and trails, are generally functional and show few signs of erosion (Best 2010: 19). The two bridges are constructed from old rail cars and were installed during the 1999 timber harvest on the property, when a number of road

upgrades were implemented for logging access in order to prevent erosion and protect water quality. The bridges were recently assessed for long term stability and were determined to have sound superstructures, but have impaired footings and are threatened by ongoing bank erosion and large-scale bank failure caused by heavy debris flows during severe storm events (Garrison 2013).

Existing Dams

The surface hydrology of the Preserve has been heavily altered by past land use. There are two low, concrete dams; one on Briggs Creek and another on an intermittent drainage. An earthen dam on a small tributary to Aldercroft Creek has created a roughly 1 acre pond (Lower Lake) along a trace of the San Andreas Fault (see Exhibit 4.8-1). The depth of fill forming the dam is unknown, but could be as much as 30 feet. The dam has a high risk of failure due to the potentially thick nature of the dam, past instability, and location on an active portion of the San Andreas Fault (Best 2010: Appendix 1).

PRESERVE SURFACE WATER QUALITY

Overall the Bear Creek watershed has good water quality, although it has high mineral and carbonates content (i.e., hard water condition). On the project site, localized poor water quality conditions occur where sediment runoff is prevalent, particularly as a result of past land uses including the road system. These conditions may be exacerbated during periods of high surface water runoff or during storms following fire events. Although the existing roads and trails incorporate rolling dips, waterbars, and ditch relief culverts to direct surface runoff, as summarized in the trail inventory discussed above, in many cases these features are not currently adequate and erosion and sedimentation issues currently persist on the project site (Best 2010).

There are about 1.3 miles of unsurfaced road and trail located within 50 feet of a watercourse within the Preserve. Along these segments, the understory vegetation and organic matter content are insufficient to effectively filter sediment from the roadbed before reaching the stream. In addition, the Bear Creek Stables area is highly disturbed and many sloped areas are devoid of vegetation. Chronic delivery of fine-grained sediment that sheets off of unsurfaced roads and trails, as well as other areas where disturbance has resulted in lack of vegetation, may have an effect on the quality of surface waters (Best 2010).

PRESERVE WATER RESOURCES

A variety of historical and extant water infrastructure exists on the Preserve. Archival research has determined that at one time approximately 6.5 million gallons of surface water was stored in ponds and tanks on the property (particularly on the area of the former Alma College site). It is unknown if some of the historical underground conveyance facilities that were once used to fill the ponds might still be operational. Bear Creek Stables has been historically served by a surface water diversion on a spring off Aldercroft Creek. Flows have been conveyed through approximately 7,000 feet of plastic pipe leading to a transfer tank and several storage tanks. In addition, as indicated above, there is an existing, inactive groundwater well on the project site. Refer to Section 4.13, "Utilities," for a discussion of Preserve water supply.

4.8.2 Regulatory Setting

FEDERAL

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA also issues flood insurance rate maps that identify which land areas are subject to

flooding. These maps provide flood information and identify flood hazard zones in the community. FEMA has established a minimum level of flood protection for new development as the 1-in-100 Annual Exceedance Probability (i.e., 100-year flood event). The project site is not located in a FEMA flood zone (Association of Bay Area Governments 2015).

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA, as well as the states. Various elements of the CWA address water quality, as discussed below.

Section 303

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses (e.g., wildlife habitat, agricultural supply, fishing) for a particular water body, along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of contaminants (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that supports a particular use.

Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. The State Water Resources Control Board (SWRCB) identifies waters of the state that do not meet water quality criteria and places them on the 303 (d) list of impaired waters. Los Gatos Creek is listed as impaired due to diazinon (a pesticide).

Section 402

The 1972 amendments to the CWA established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources. NPDES permit regulations have been established for broad categories of discharges including point source municipal waste discharges and nonpoint source stormwater runoff. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. "Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The regional water quality control boards (RWQCBs) in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Project proponents must obtain a permit from the U.S. Army Corps of Engineers for all discharges of dredged or fill materials into waters of the United States. Section 404 permits may be issued only for the "least environmental damaging practicable alternative." That is, the authorization of a proposed project discharge is prohibited if an existing practicable alternative would have less of an environmental impact and lacks other significant adverse consequences. See Section 4.3, "Biological Resources," for further discussion of waters of the United States.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- ▲ existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;
- ▲ where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- ▲ where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

STATE

State Water Resources Control Board

In California, the SWRCB has broad authority over water quality control issues. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Regional authority for planning, permitting, and enforcement is delegated to the nine regional water boards. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The project site is within the jurisdiction of the San Francisco Bay RWQCB.

The Watershed Management Initiative for San Francisco Bay involves region-wide activities that address watershed issues that impact San Francisco Bay as a whole, as well as addressing issues that are common to many watersheds. Region-wide activities include: (1) Basin planning and policy development, (2) monitoring and assessment, (3) the Nonpoint Source Program, (4) wetlands and stream protection, (5) core regulatory programs, (6) groundwater management, (7) geographic information systems, and (8) TMDLs.

National Pollutant Discharge Elimination System Permits

To receive an NPDES permit, a Notice of Intent to discharge must be submitted to the RWQCB, and design and operational best management practices (BMPs) must be implemented to reduce the level of contaminated runoff.

General Permit for Stormwater Discharges Associated with Construction Activity

The SWRCB adopted the statewide NPDES General Construction Permit in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Construction Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include BMPs designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality

consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. EPA has delegated to the California Department of Health Services the responsibility for California's drinking water program. Title 22 of the California Administrative Code (Article 16, Section 64449) defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues.

LOCAL

Santa Clara County Clean Water Program

Santa Clara County's Clean Water Program is a function of the County government that exists to maintain compliance with a NPDES Storm Water Discharge Permit and to promote storm water pollution prevention within that context. The Basin Plan issued by the RWQCB in 1986 and its subsequent amendments require the program to submit proposals for determining pollutant loading, sources, and control measures for nonpoint source pollution to the south San Francisco Bay. North Santa Clara Valley's 13 cities, Santa Clara County, and SCVWD (all jurisdictions which contribute runoff to the South Bay) operate under a joint NPDES municipal storm water permit.

Santa Clara Valley Water District Well Ordinance Program

The SCVWD Well Ordinance Program is responsible for issuing well permits and inspecting all well construction activities and well maintenance in Santa Clara County to help keep wells from endangering the public or threatening local groundwater resources. Under the Well Ordinance Program, the SCVWD enforces violations against the District Well Ordinance and state well standards. These requirements help to ensure that groundwater usage does not result in adverse hydrologic and water quality effects.

Santa Clara County Department of Environmental Health-Consumer Protection Division's Drinking Water Program

The County Drinking Water Program reviews all new well construction applications for domestic and agricultural uses prior to the submission to the SCVWD to insure adequate separation from on-site sewage.

Santa Clara County General Plan

The following policies in the Santa Clara County General Plan are applicable to the proposed project:

- ▲ **Policy C-RC 20:** Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:
 - a. Erosion and sedimentation;
 - b. Organic matter and wastes;
 - c. Pesticides and herbicides;

- d. Effluent from inadequately functioning septic systems;
 - e. Effluent from municipal wastewater treatment plants;
 - f. Chemicals used in industrial and commercial activities and processes;
 - g. Industrial wastewater discharges;
 - h. Hazardous wastes; and
 - i. Non-point source pollution.
- ▲ **R-RC 12:** Excessive concentrations of septic systems shall be avoided, especially in areas vulnerable to groundwater contamination or in which normal functioning may be impaired by hydrologic constraints.
 - ▲ **R-RC 13:** Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses which pose such a threat to water quality.
 - ▲ **Policy R-RC 15:** Commercial and industrial uses such automobile dismantlers, waste transfer disposal facilities, light industries, uses requiring septic systems, and other uses that have the greatest potential for pollution shall not be located within the vicinity of streams, reservoirs, or percolation facilities where contaminants could easily come in contact with flood waters, high groundwater, flowing streams, or reservoirs. Such uses shall be required to reduce any threat of contamination to an insignificant level as a condition of approval.
 - ▲ **Policy R-HS 32:** Flood control improvements should be designed to maintain streams channels and environments in their natural state wherever possible and restore the natural environment where it has been altered by past activities. Wherever possible, adequate setbacks should be maintained to allow for flood control engineering which maintains the natural environment as much as possible.

Midpeninsula Regional Open Space District Resource Management Policies

MROSD's resource management policies are used to help guide the overall planning, budgeting, and decision making processes for individual preserves and for District-wide programs. The following policies relate to hydrology and water quality and are applicable to the proposed project:

- ▲ **Policy WR-1:** Protect surface and ground water from contamination.
- ▲ **Policy WR-2:** Minimize interference with natural flow of surface and ground water.
- ▲ **Policy WR-3:** Determine and maintain District water rights and utilization.
- ▲ **Policy WR-4:** Restore, maintain or enhance water quality on District lands.

Proposed Bear Creek Redwoods Preserve Plan

The Preserve Plan includes the following goal and related objectives with regard to hydrology and water quality that would be implemented if the Preserve Plan is approved:

Goal NR5: Protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat

- Obj NR-5.1 Protect water quality and improve stream habitat
- Obj NR-5.2 Treat stormwater runoff and monitor potential sources of sediment and pollutants
- Obj NR-5.3 Identify and maintain existing springs, water infrastructure, and water rights

4.8.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

The following analysis is based on a survey of existing trail conditions (Best 2010) and trail improvements proposed in the Preserve Plan. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, State, and local ordinances and regulations. Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on CEQA Guidelines Appendix G, the project would result in a significant impact to hydrology or water quality if it would:

- ▲ violate any water quality standards or waste discharge requirements;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the amount of surface runoff in a manner which would result in flooding on- or offsite;
- ▲ create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- ▲ otherwise substantially degrade water quality;
- ▲ place housing within 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard area delineation map;
- ▲ place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- ▲ expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or a dam; and
- ▲ result in substantial risk of inundation by seiche, tsunami, or mudflow.

ISSUES NOT DISCUSSED FURTHER

Tsunamis (or seismic sea waves) are not considered a hazard for this project due to site elevation, and distance from the Pacific Ocean and San Francisco Bay, and are not evaluated. Lexington Reservoir could potentially have seiches or some wave disturbance, but since the project site is located a minimum of 20 feet and a maximum of 150 feet above lake level, the risk is minimal (Questa 1995). Note that the smaller ponds on the project site would not generally result in seiche activity large enough to cause significant structure damage or public safety risk.

IMPACT ANALYSIS

Impact 4.8-1: Violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

The quality of surface water in the Preserve is currently affected by ongoing erosion due to the design and condition of the existing roads and trails, lack of vegetation in some developed areas, and alterations to surface hydrology that impair surface runoff. The Preserve Plan includes road and trail improvements, revegetation, and upgraded stream crossings to address these conditions. Environmental protection measures (Appendix C) have been incorporated into the project that would effectively limit the potential for the proposed actions to violate water quality standards or waste discharge requirements, or to otherwise degrade water quality during associated construction and management activities. This impact would be **less than significant**.

As discussed above in Section 4.8.1., “Environmental Setting,” the Road and Trail Inventory (Best 2010) identified erosion and sedimentation issues on the site associated with several sections of roads and trails in need of repair. The site is currently subject to erosion along poorly designed roads and due to localized flooding by clogged culverts and stream diversions. Water quality is affected by erosion caused during periods of high runoff, as well as chronic delivery of fine-grained sediment that sheets off of unsurfaced roads and trails (Best 2010). Eroded soils can contain nitrogen, phosphorus, and other nutrients that, when transported to water bodies, can stimulate algae growth that reduces water clarity, deplete oxygen, and create odors.

Improving site conditions for the benefit of water quality is a goal of the Preserve Plan. The recommendations of the Road and Trail Inventory (Best 2010) and updated for the western Preserve zone (Waterways 2016) are incorporated into the proposed Preserve Plan as Implementation Actions, and include repair of the impaired stream crossings; bridge replacement; routine maintenance and upgrades of existing drainage facilities such as culverts, water bars, and drain dips to remove any accumulated material; installation of minor drainage improvements such as water bars to direct surface flow from trails to natural drainage systems; installation and maintenance of small dissipating structures in locations where outflows or channelization could cause erosion; removal of culverts where roads would be removed; and seeding and revegetation of eroding slopes. Implementation of these improvements are anticipated to result in a long-term benefit to surface water quality by reducing erosion and sedimentation.

Construction Impacts

The proposed activities, including culvert replacements, bridge construction, and installation of water quality protection measures, could potentially create construction-phase water quality impacts due to ground disturbance within the stream channel, along the stream banks, and in the adjacent upland area. In addition, culvert repair and replacement in perennial streams would require dewatering or stream bypass. This could accelerate erosion and introduce nutrients or suspend sediments, which could degrade the water quality during construction. Additionally, heavy equipment and tools required for construction of the project have the potential to introduce oil, grease, and chemical pollutants through leakage or an accidental spill. To limit the potentially compounding effects of construction and existing conditions, MROSD would continue to provide trail maintenance to limit active erosion. These activities, which are detailed in Environmental Protection Measure HYDRO-2 in Appendix C, would include actions to improve conditions on existing trails, such as: repair and stabilization of actively eroding gullies; sloping existing roads to the outside edge to allow sheet runoff; installing rolling waterbars to more effectively drain road surfaces; installing rip-rap or other impact reducing mechanisms at the outfall of waterbars and culverts; and installing filter berms to collect sediments and reduce runoff energy. Construction activities occurring within streams would require permits pursuant to the Clean Water Act, which require preparation and implementation of a SWPPP. See Section 4.3, “Biological Resources” for a detailed discussion.

Where activities would disturb more than 1 acre of soil, the SWRCB NPDES permit, requires the preparation of a SWPPP. A SWPPP has two major objectives: (1) to help identify the sources of sediment and other

pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in storm water and non-storm water discharges. The SWPPP would be prepared by a qualified SWPPP practitioner and/or a qualified SWPPP developer that identifies water quality controls consistent with RWQCB requirements, and would ensure that runoff quality meets water quality objectives and maintains the beneficial uses of the project area streams. The SWPPP would describe the site controls, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures, and management controls unrelated to stormwater. BMPs identified in the SWPPP would be implemented during all site development activities. The following would be required elements of the SWPPP:

- ▲ Temporary BMPs to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff, and may include: filter fence, fiber roll, erosion control blankets, mulch (such as wood chips); and temporary drainage swales and settling basins.
- ▲ Temporary BMPs to prevent the tracking of earthen materials and other waste materials from the project site to offsite locations, and may include stabilized points of entry/exit for construction vehicles/equipment and designated vehicle/equipment rinse stations, and sweeping.
- ▲ Temporary BMPs to prevent wind erosion of earthen materials and other waste materials from the project site, and may include routine application of water to disturbed land areas and covering of stockpiles with plastic or fabric sheeting.
- ▲ A spill prevention and containment plan would be prepared and implemented. Project contractors would be responsible for storing on-site materials and temporary BMPs capable of capturing and containing pollutants from fueling operations, fuel storage areas, and other areas used for the storage of hydrocarbon-based materials. This would include maintaining materials onsite (such as oil absorbent booms and sheets) for the cleanup of accidental spills, drip pans beneath construction equipment, training of site workers in spill response measures, immediate cleanup of spilled materials in accordance with directives from the RWQCB and proper disposal of waste materials at an approved offsite location that is licensed to receive such wastes.
- ▲ Temporary BMPs to capture and contain pollutants generated by concrete construction, and may include lined containment for rinsate to collect runoff from washing of concrete delivery trucks and equipment.
- ▲ Protective barriers to prevent damage to trees and other vegetation to remain after construction, and may include tree protection fencing and individual tree protection such as wood slats strapped along the circumference of trees.
- ▲ Temporary BMPs for the containment of removal of drilling spoils generated from construction of bridge foundations and abutments.
- ▲ Daily inspection and maintenance of temporary BMPs. The prime contractor would be required to maintain a daily log of Temporary Construction BMP inspections and keep the log on site during project construction for review by RWQCB.
- ▲ Tree removal activities, including the dropping of trees, would be confined to the construction limit boundaries.
- ▲ Construction boundary fencing or other barrier to limit disturbance and prevent access to areas not under active construction.
- ▲ Post-construction BMPs and BMP maintenance schedule. Post construction BMPs must address water quality, channel protection, overbank flood protection and extreme flood protection.

- ▲ Revegetation of disturbed areas with native seed mixes.
- ▲ Prohibition of grading or trenching, except as required for erosion or sediment control, within 35 feet from the edge of perennial streams, creeks, or environmentally sensitive areas during the rainy season.

Construction associated with the proposed project would require the use and handling of hazardous materials such as fuels, lubricants, coolants, hydraulic fluids, and cleaning solvents. The use and handling of these materials presents the potential to degrade water quality through accidental spills. Implementation of the Spill Response and Prevention Plan (a required component of the NPDES permit Stormwater Pollution Prevention Plan) would reduce the potential of directly and indirectly effecting water quality through construction-related hazardous material spills.

The potential for construction activities within and near the creeks to result in erosion that could introduce nutrients or suspend sediments into onsite surface waters would be substantially controlled through the use of standard BMPs and compliance with federal, state, and local regulations and permit requirements. Additional methods for protection of stormwater quality would be implemented as described in Environmental Protection Measure HYDRO-3 in Appendix C.

Operational Impacts

Implementation of the Preserve Plan would substantially increase use of existing roads and trails, re-open some old roadbeds for use as trails, and create new trails. Increased trail use could exacerbate existing sedimentation into creeks. In addition, the Preserve Plan specifies the ongoing and expanded maintenance of roads and trails, including vegetation clearing, culvert replacement, installation and maintenance of rolling dips and other drainage improvements, as well as use of chemical pesticides to control invasive plants. Finally, the Preserve Plan includes construction of the Alma College parking area adjacent to Upper Lake, and resurfacing of the Stables horse boarding areas. These activities, and ongoing use of the new parking lot and stables, could result in discharges that would degrade water quality.

Where bank seeps and springs are located near a road or trail, they can cause the trail to become chronically wet and muddy. These chronically wet areas are potential sediment sources where they are located in close proximity to a watercourse (Best 2010). However, elements of the proposed project, including environmental protection measures (Appendix C), would effectively limit the potential for erosion. These include:

- ▲ maintaining the roads and trails according to MROSD standard practices for activities in or near watercourses (Environmental Protection Measure HYDRO-1);
- ▲ rocking sections of roads and trails that are near creeks, spring or seeps (Environmental Protection Measure HYDRO-4);
- ▲ limiting new equestrian trails near creeks (Environmental Protection Measure HYDRO-5);
- ▲ improving all stream crossings to accommodate flood events consistent with County and MROSD standards (Environmental Protection Measure HYDRO-6);
- ▲ removing existing culverts on abandoned roads (Environmental Protection Measure HYDRO-7);
- ▲ replacing ford crossings in areas expected to have high use Environmental Protection Measure HYDRO-8);
- ▲ design and use guidelines (Environmental Protection Measure GEO-1 through GEO-3);
- ▲ and other erosion control measures (Environmental Protection Measure GEO-4).

The improved infrastructure would benefit water quality by reducing ongoing sedimentation and erosion, as well as minimizing the potential for flooding and water quality degradation during larger storm events.

In addition, current district-wide requirements protect water quality during maintenance activities, as outlined in MROSD's *Best Management Practices and Standard Operating Procedures for Routine Maintenance Activities in Water Courses*, which has been reviewed and approved by the RWQCB and California Department of Fish and Wildlife. Maintenance work in watercourses would also meet standards and be consistent with the current RWQCB Memorandum of Understanding for routine maintenance activities on MROSD lands. All maintenance activities would be required to implement BMPs to reduce potential water quality impacts, as established in Environmental Protection Measure HYDRO-3. These BMPs may include, for example, use of silt fences, storm drain inlet protection, and erosion control blankets and mats to ensure that no sediment at heavily traveled trails flows into creeks. Vehicles not operated by MROSD would be permitted only on drivable roads and staging areas.

Preserve Plan actions that result in new impervious surface, including the parking lots and resurfacing of the Stables area, are subject to stormwater treatment requirements as defined in Section C.3 of the Clean Water Act. Design of new parking lots, or other impervious surfaces greater than 10,000 square feet, will include provisions for stormwater treatment, and may include bioretention or infiltration basins, vegetated swales, and adequately sized and protected discharge structures, to ensure that stormwater flows do not result in discharge of pollutants or uncontrolled flows into creeks and ponds. Furthermore, a primary goal of Preserve Plan actions at Bear Creek Stables, including re-grading and resurfacing the boarding area, revegetation of denuded hillslopes, and installation of stormwater treatment features and other green infrastructure, is to reduce use-related impacts to water quality.

With the implementation of BMPs designed to limit erosion and improve stream flow, preparation of a SWPPP and conformance with applicable regulations related to potential contamination due to potentially hazardous materials, and stormwater treatment systems, the proposed project would have a **less-than-significant** impact on water quality.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.8-2: Substantially deplete groundwater supplies.

Preliminary analysis of pumping the existing MROSD well at the proposed seasonal demand of 2,000 to 8,000 gpd (or at a maximum 1-day demand of 30 gpm) suggest insignificant drawdown effects to nearest known well. The proposed project would have a **less-than-significant** impact.

The Preserve Plan includes potential reuse of the existing well on the former Holmes property in the southeastern Preserve zone. Although reuse of the well is not the preferred option for Preserve water supply (which would most likely be provided through a direction connection to a San Jose Water Company pipeline on Bear Creek Road), impacts of the well are included in this analysis in the event that it is used in the future.

When a well is pumped it introduces a stress to the aquifer and lowers hydraulic pressures and water levels in the vicinity of the well. With continued pumping, this effect propagates outward from the well, creating a "cone of depression" or "area of influence." Balance Hydrologics conducted an initial assessment of the existing well's area of influence. The area of influence of a pumped well can be roughly estimated using the Cooper-Jacob (1946) distance-drawdown equation. Based on the estimates of aquifer transmissivity from a 4-hour pumping test and using a nominal storage coefficient for a shallow fractured bedrock aquifer, Balance Hydrologics estimated the radius of influence for the proposed well for four cases:

- ▲ Case 1, the area of influence which would develop during the 4-hour pumping test using a transmissivity value estimated with Cooper and Jacob method;
- ▲ Case 2, the area of influence which would develop during the 4-hour pumping test using a transmissivity value estimated with specific capacity method;
- ▲ Case 3, the area of influence of pumping at temporarily high rates of 30 gpm for 24 hours (as an example of maximum daily pumping); and,
- ▲ Case 4, the area of influence which might develop at the end of the dry-season pumping at 8,000 gpd April through October (as an example of maximum seasonal pumping).

For a horizontal surface, the estimated radius of influence for a maximum daily pumping rate of 30 gpm is about 7 feet from the well, while the estimated radius of influence for the maximum dry-season demand of 8,000 gpd (April through October) is roughly the distance to the nearest well at 21030 Summit Road (210 feet from the well). A 1-foot drawdown effect from dry-season pumping is approximately at the center line of Summit Road. The estimates in each of the cases described above are detailed in Table 4.8-1 and depicted graphically in Exhibit 4.8-2. These estimates suggest a negligible drawdown effect to the nearest known well at the proposed pumping demands for the proposed project.

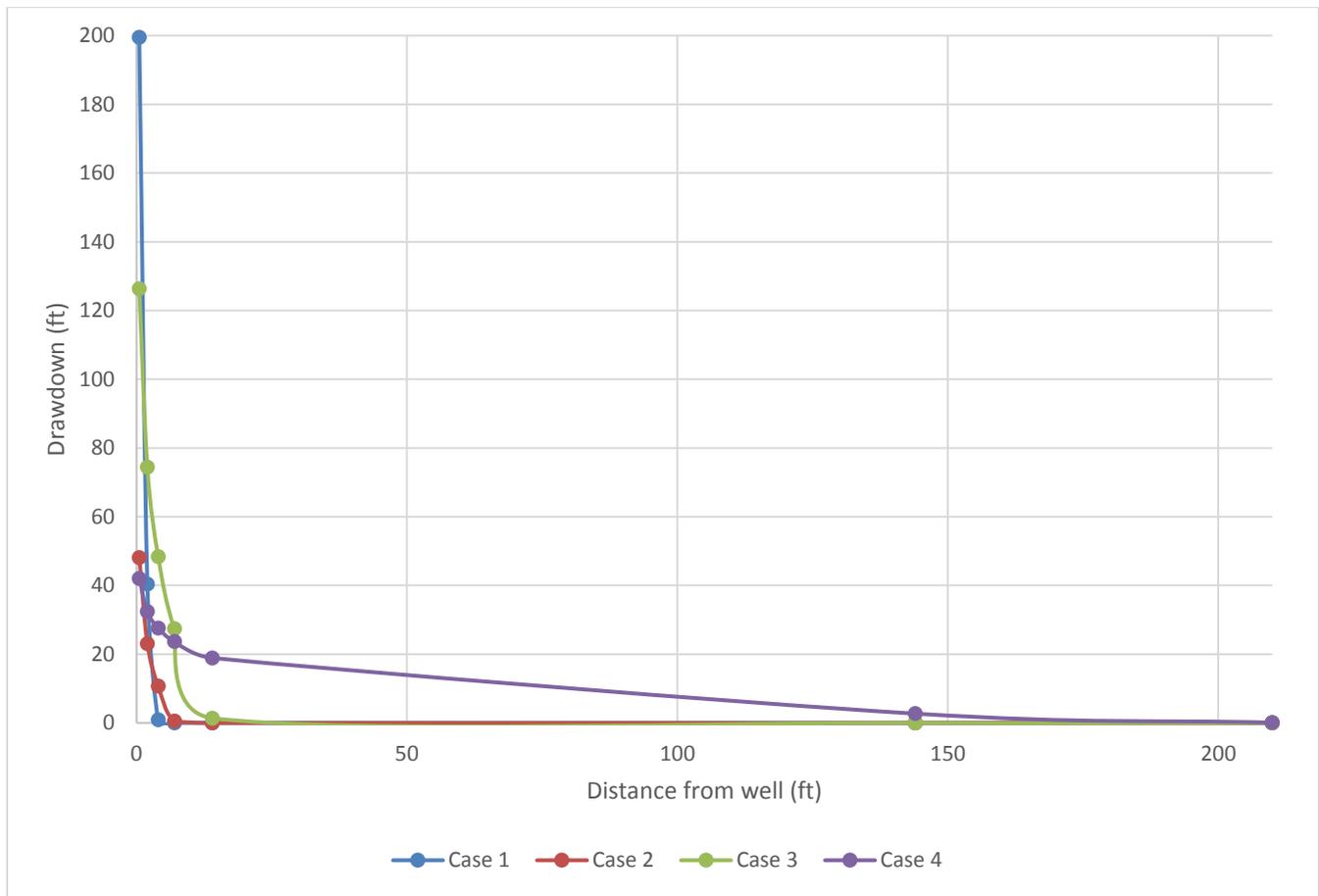
Because the groundwater pumping associated with the proposed project is not anticipated to substantially affect the nearest well, the impact to groundwater supplies would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Table 4.8-1 Estimated Area of Influence for Existing MROSD Well				
Distance (in feet) from MROSD Well	Groundwater Drawdown (in feet)			
	Case 1	Case 2	Case 3	Case 4
0.5	199.5	48.1	126.4	42
2	40.4	23.1	74.4	32.4
4	0.9	10.7	48.4	27.6
7	0	0.6	27.4	23.7
14	0	0	1.4	18.9
144	0	0	0	2.7
2101	0	0	0	0.1

Notes: ¹ Distance to nearest well at 21030 Summit Road is 210 feet
 Source: Compiled by Ascent 2015 from Balance Hydrologics 2015b



Source: Compiled by Ascent 2015 from Balance Hydrologics 2015b

Exhibit 4.8-2 Estimated Area of Influence for Existing MROSD Well

Impact 4.8-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase in erosion or siltation. Due to the limited scope of potential development, and the design standards and infrastructure upgrades that MROSD has committed to implementing, the proposed project would have a **less-than-significant** impact.

Protection of waterways and associated uplands to maintain watershed function is a stated goal of the Preserve Plan (see Goal NR4). To protect creeks, improve water quality, and protect riparian habitat, the Preserve Plan would manage erosion by implementing high-priority road and trail repairs, continued installation of green infrastructure BMPs at Bear Creek Stables, installation of stormwater treatment systems for new impervious surfaces, and decommissioning poorly aligned or duplicate roads. MROSD would prepare a Road Maintenance Plan that identifies problem sites and includes a repair history to track of road conditions and past roadwork. The Road Maintenance Plan would also include a maintenance schedule to direct maintenance work. MROSD would incorporate the information into a GIS database to facilitate information tracking.

The project would result in limited development of the Preserve. Drainage patterns would not be substantially altered, and improvements to the culvert system used to channel surface runoff would be

incorporated into the Plan (Environmental Protection Measures HYDRO-6 through HYDRO-8—See Appendix C). This would maintain the flow of runoff and reduce the potential for blockages along the creeks that impair conveyance, causing the creeks to spill over their banks, and leading to onsite erosion and the potential for offsite siltation.

As discussed above, new and existing trails would incorporate environmental protection measures (Appendix C) to limit effects on surface hydrology. Flood control improvements would be consistent with Santa Clara County General Plan Policy R-HS 32 and Goal NR4 of the Preserve Plan. Due to the limited scope of potential development, and the design standards and infrastructure upgrades that MROSD has committed to implementing, the proposed project would have a **less-than-significant** impact related to the potential to result in substantial erosion or siltation.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.8-4: Result in runoff that would either create or contribute to on- or offsite flooding or exceed the capacity of the stormwater drainage system.

Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase or change in the surface runoff on the site. Localized improvements would be implemented, including upgrading stream crossings, and general measures related to drainage improvements along the trails, that would reduce the potential for runoff to contribute to flooding or exceed the capacity of the existing drainage system. This impact would be **less than significant**.

Stormwater runoff from the Preserve does not enter a municipal stormwater drainage system. The stormwater conveyance system on the project site is a series of culverts and similar structures that channel surface water to the onsite streams. Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase or change in the surface runoff on the site. The Preserve Plan calls for the decommissioning or redesign of some trails, and the construction of new trails. MROSD's standard practices for maintaining roads and trails (Environmental Protection Measure HYDRO-1), coupled with interim maintenance activities (Environmental Protection Measure HYDRO-2) would improve site drainage. In addition, rusted and undersize culverts would be replaced with larger culverts to accommodate flood flows (consistent with County and MROSD standards) and would prevent stream flow from being diverted to trails (Environmental Protection Measure HYDRO-6); ford crossing would be replaced with rock fords, culverts, or bridges in areas where high levels of use are anticipated (Environmental Protection Measure HYDRO-8); and existing culverts would be removed where trails are decommissioned. Furthermore, the Stables area would be regraded and resurfaced to allow for improved drainage and treatment of stormwater runoff, and new parking areas would include stormwater treatment features. As a result, the surface hydrology of the Preserve is anticipated to improve, and the resulting runoff would have a **less-than-significant** impact on flooding and the existing drainage system.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.8-5: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or a dam.

Generally, the additional design and maintenance activities proposed in the Preserve Plan would reduce the potential for flooding to have a negative effect on the site. There is potential that an existing dam on Aldercroft Creek is located on a trace of the San Andreas Fault, and the potential for failure of this dam to result in flooding is a **potentially significant** impact.

The Santa Cruz Mountains can experience intense precipitation for significant durations. Although the Preserve is not in a FEMA flood zone, the existing and proposed trails would pass through the flood zones of creeks in the project area. During times of intense precipitation, flashy flood waters could flow over the trails, creating a potential hazard for individuals on the trails. Saturated soil conditions in steeply sloped areas can also result in surficial movement of soil as debris or mud flow. Further, if a landslide terminates in a stream channel, temporary upchannel flooding may occur (Questa 1995). These conditions are rare, but could have an effect on MROSD personnel and the public where access is allowed. In addition, the earthen dam on a tributary to Aldercroft Creek is likely at risk for failure due to a fault rupture and/or intense ground shaking during an earthquake. Failure of the dam could lead to flooding with potential to affect the eastern portion of the Preserve and Highway 17.

Implementation of the Preserve Plan would not increase the potential for flooding of recreational trails. In fact, the additional design and maintenance activities proposed would reduce the potential for flooding to have a negative effect on the site. MROSD would employ patrols, signage, and barricades to reduce the possibility that the project would create conditions that would increase the exposure of people to flooding risk. However, due to the potential for failure of the earthen dam on the tributary to Aldercroft Creek, there would be a **potentially significant** impact related to exposure of people to risk due to failure of dam.

Mitigation 4.8-5: Conduct a geologic and geotechnical investigation of the dam located on Aldercroft Creek

Within the first five years of implementing the Preserve Plan, MROSD will conduct an in-depth geologic and geotechnical investigation of the dam at the southern end of Alma Lake on Aldercroft Creek that is suspected of being located on a trace of the San Andreas Fault. Upgrade or removal of the dam will be completed according to recommendations of the investigations, and, if necessary, use of trails in the potentially affected areas downstream of the dam will be restricted until the recommendations have been fulfilled.

Significance after Mitigation

Implementation of Mitigation Measure 4.8-1 would improve the conditions on the Preserve and reduce the potential for flooding due to dam failure. With mitigation, the impact of the Preserve Plan related to exposing people or structures to flooding would be **less-than-significant**.

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4.9 LAND USE

This section describes project consistency with applicable County General Plan land use designations and zoning, as well as consistency with applicable policies and plans. This section also describes the consistency with the physical land uses within the vicinity of the Preserve. The Preserve Plan is not expected to have an effect on Agricultural and Forestry Resources, as discussed in Section 1.3, “Effects Found Not to Be Significant,” in Chapter 1, “Introduction,” however, several parcels within the Preserve are under Williamson Act contract. Therefore, this topic is discussed below.

No comments pertaining to land use were received during public review of the Notice of Preparation for the proposed project.

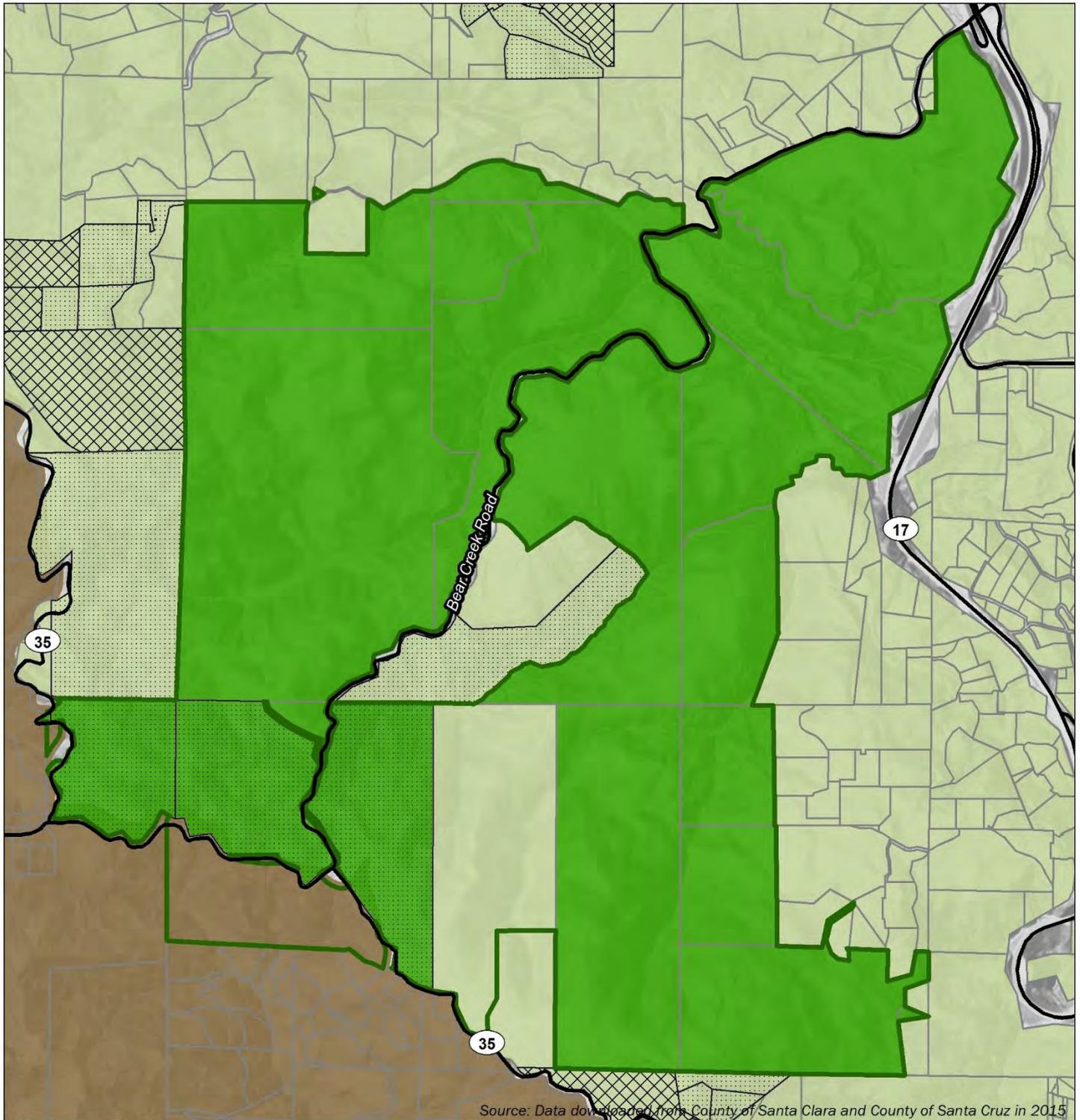
4.9.1 Environmental Setting

The majority of the Preserve is located in unincorporated Santa Clara County; however, the parcel located south of State Route 35/Summit Road is in Santa Cruz County. The Preserve is extensive second growth redwood and Douglas fir forest with limited development. Much of the Preserve consists of steep, rugged terrain, although the terrain is gentler in the northeastern portion of the Preserve. Elevations range from approximately 680 to 2,400 feet.

LAND USE IN THE PROJECT VICINITY

The Preserve is located west of Lexington Reservoir and Sierra Azul Open Space Preserve, south of El Sereno Open Space Preserve and Sanborn-Skyline County Park, and just north of the Moody Gulch property. Lexington Reservoir is a 914-acre reservoir park owned and managed by Santa Clara County Parks Department. This reservoir park offers trails, shoreline fishing, and boating for non-gas powered boats. Sanborn-Skyline County Park is also owned and managed by Santa Clara County Parks Department and offers hiking, camping, RV camping, and picnicking. Both the Sierra Azul and El Sereno preserves are owned and managed by MROSD and offer hiking, bicycling, and equestrian trails. The entire project site abuts private property except for the Moody Gulch property, located adjacent to southeast corner, which is owned by Santa Clara County Parks Department (See Exhibit 4.11-1 in Section 4.11, “Recreation”). There are rural residences and vineyards to the south, north, and west of the site, and Redwood Estates residential development is located to the southeast. Camel Hill Vineyards (a private farm and vineyard) and church are located north of the Preserve. The Preserve completely surrounds a private inholding known as The Presentation Center that functions as a retreat and conference center.

Lands surrounding the Preserve to the north, east, and west are designated as HS (Hillside) by the *Santa Clara County General Plan*, which allows for agricultural uses, mineral extraction, low-density recreation, land in its natural state, wildlife refuges, very low density residential development, and commercial, industrial, or industrial uses that require remote settings or support recreation or appreciation of the natural environment (County of Santa Clara 1994). Lands to the south are designated as R-M (Mountain Residential) by the *Santa Cruz County General Plan*, which allows for very low density residential development (County of Santa Cruz 1994) (Exhibit 4.9-1). Lands surrounding the Preserve are also primarily zoned HS, which allows for preserving mountainous lands in open space (County of Santa Clara 1994). Parcels to the southwest of the Preserve are zoned as TP (Timber Production), which allows for growing and harvesting of timber and other forest products, agriculture, and one single-family dwelling (County of Santa Cruz 1994).

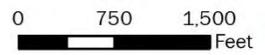


Source: Data downloaded from County of Santa Clara and County of Santa Cruz in 2015

Legend

- Bear Creek Redwoods Preserve
- Major Roads
- Parcels
- Williamson Act Parcels (Ongoing Contract)
- Williamson Act Parcels (Non-Renewed)

- Land Use Designation**
- Hillsides
 - Mountain Residential
 - Other Public Open Lands



Basemap: NRCS NED
G15010027 01 009

Exhibit 4.9-1

Land Use Parcels - Williamson Act



LAND USE WITHIN THE PROJECT SITE

All but one parcel within the Preserve is located within the southwest portion of unincorporated Santa Clara County, and is designated as Other Public Open Lands by the *Santa Clara County General Plan*. Allowable uses for Other Public Open Lands include areas that are open to public access and that are open to the public through permit only (Exhibit 4.9-1). All of the Preserve parcels within Santa Clara County have been zoned as HS. As discussed above, the HS zoning allows for preserving mountainous lands in open space (County of Santa Clara 1994). The parcel within the southwest corner of the Preserve, south of State Route (SR) 35/Summit Road, is within Santa Cruz County. This parcel is designated as R-M, which allows for very low density residential development and is zoned as TP, which allows for timber production and agriculture (County of Santa Cruz 1994).

The Preserve is currently open space that is primarily evergreen forest with limited day-use hiking and equestrian access. Several intermittent creeks run through the Preserve including Dyer, Briggs, Webb, and Aldercroft Creeks, as well as three man-made ponds. Existing facilities are limited to trails, parking areas, Bear Creek Stables, and the former Alma College site. Bear Creek Stables includes a main arena, smaller secondary arena, and paddocks for a maximum of 72 horses. Structures include a caretaker house, cottage, stables, hay barn, shop, and office trailer. Programs at the Stables currently include horseback riding along existing trails, educational programs for children, and occasional horse riding clinics. The former Alma College site includes various structures associated with the former college and previous estates. Most of the original structures have been damaged or destroyed, and the remaining buildings are currently unoccupied and uninhabitable.

Williamson Act Lands

Three parcels within the Preserve are subject to Williamson Act contract with the County of Santa Clara (Exhibit 4.9-1); however, non-renewal of the contracts was requested for all parcels in 2007. Therefore, the parcels will remain under Williamson Act contract until 2017, when the 9-year non-renewal period ends. Compatible uses under the Williamson Act contract for these parcels includes use of the land in its natural state by the public for preserving open space, recreation, or plant or animal preserves. Public and private riding and hiking trails and stables are also allowed under the Williamson Act contract for these parcels.

4.9.2 Regulatory Setting

FEDERAL

No specific federal regulations pertain to land use on or in the vicinity of the project site.

STATE

Open Space Lands Act

The Open Space Lands Act (Government Code Section 65560 et seq.) requires cities and counties to prepare Open Space Elements as part of their local General Plans, which must address open space for natural resource preservation, managed production of resources, outdoor recreation, public health and safety, military installations, and the protection of places, features, and objects of significance to Native American tribes.

Williamson Act Program

The Williamson Act conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by the County, in accordance with state regulations. The program allows landowners to restrict their land to agricultural and open space uses under minimum 9-year rolling term contracts. Land is assessed for property taxes according to the actual use instead of the potential market value. All land under contract must be located within the Williamson Act Agricultural

Preserve, and the Williamson Act Agricultural Preserve contains additional land use restrictions beyond the underlying agricultural zoning.

LOCAL

No facilities or development are proposed within the Preserve parcel within Santa Cruz County. Therefore, the goals and policies of the *Santa Cruz County General Plan* and County of Santa Cruz Zoning Ordinance are not applicable to implementation of the Preserve Plan and are not listed below.

Santa Clara County General Plan

The following policies of the *1994 Santa Clara County General Plan* are applicable to the proposed project:

- ▲ **Policy C-PR 1:** An integrated and diverse system of accessible local and regional parks, scenic roads, trails, recreation facilities, and recreation services should be provided.
- ▲ **Policy C-PR 2:** Sufficient land should be acquired and held in the public domain to satisfy the recreation needs of current and future residents and to implement the trailside concept along our scenic roads.
- ▲ **Policy C-PR 4:** The public open space lands system should:
 - a. preserve visually and environmentally significant open space resources; and
 - b. provide for recreation activities compatible with the enjoyment and preservation of each site's natural resources, with trail linkages to adjacent and nearby regional park lands.
- ▲ **Policy C-PR 7:** Opportunities for access to regional parks and public open space lands via public transit, hiking, bicycling, and equestrian trails should be provided. Until public transit service is available, additional parking should be provide where needed.
- ▲ **Policy C-PR 8:** Facilities and programs within regional parks and public open space lands should be accessible to all persons, regardless of physical limitations, consistent with available financial resources, the constraints of natural topography, and natural resource conservation.
- ▲ **Policy C-PR 9:** The parks and recreation system should be designed and implemented to help attain open space and natural environment goals and policies.
- ▲ **Policy C-PR 10:** Recreation facilities and activities within regional parks and public open space lands should be located and designed to be compatible with the long term sustainability of each site's natural and cultural resources, with particular attention to the preservation of unique, rare, or endangered resources (including historic and archeological sites, plant and animal species, special geologic formations, etc.).
- ▲ **Policy C-PR 11:** Park planning and development should take into account and seek to minimize potential impacts on adjacent property owners.
- ▲ **Policy C-PR 12:** Parks and trails in remote areas, fire hazardous areas, and areas with inadequate access should be planned to provide the services or improvements necessary to provide for the safety and support of the public using the parks and to avoid negative impacts on the surrounding areas.
- ▲ **Policy C-PR 14:** Parks and recreation system planning, acquisition, development, and operation should be coordinated among cities, the County, State and Federal governments, school districts and special districts, and should take advantage of opportunities for linkages between adjacent publicly owned parks and open space lands.

- ▲ **Policy C-PR 17:** The private sector and non-profit organizations should be encouraged to provide outdoor recreational opportunities. In rural areas, private recreational uses shall be low intensity.
- ▲ **Policy C-PR 20:** A countywide system of trails offering a variety of user experiences should be provided that includes: trails within and between parks and other publicly owned open space lands; trails that provide access from the urban area to these lands; trails that connect to trails of neighboring counties; trails that connect to transit facilities; trails that give the public environmentally superior alternative transportation routes and methods; trails that close strategic gaps in non-motorized transportation routes; trails that offer opportunities for maintaining personal health; trails that offer opportunities for outdoor education and recreation; and trails that could serve as emergency evacuation routes.
- ▲ **Policy C-PR 20.1:** Trail access should be provided for a range of user capabilities and needs (including persons with physical limitations) in a manner consistent with State and Federal regulations.
- ▲ **Policy C-PR 23:** Trail routes shall be located, designed and developed with sensitivity to their potential environmental, recreational, and other impacts on adjacent lands and private property.
- ▲ **Policy C-PR 24:** As provided for in the Resource Conservation Chapter, trails shall be located to recognize the resources and hazards of the areas they traverse, and to be protective of sensitive habitat areas such as wetlands and riparian corridors and other areas where sensitive species may be adversely affected.
- ▲ **Policy C-PR 30:** Trails shall be temporarily closed when conditions become unsafe or environmental resources are severely impacted. Such conditions could include soil erosion, flooding, fire hazard, environmental damage, or failure to follow the specific trail management plan (see Countywide Trails Master Plan - Design and Management Guidelines).
- ▲ **Policy C-PR 30.1:** Levels-of-use and types-of-use on trails shall be controlled to avoid unsafe use conditions or severe environmental degradation.
- ▲ **Policy C-PR 31:** Use of motorized vehicles on trails shall be prohibited, except for wheelchairs, maintenance, and emergency vehicles.
- ▲ **Policy C-PR 32:** All trails should be marked. Signed information should be provided to encourage responsible trail use. Appropriate markers should be established along historically significant trail routes.

Santa Clara County Zoning Ordinance

The Santa Clara County Zoning Ordinance establishes standards and regulations to implement the policies contained in the General Plan. The Preserve is zoned as HS, the intent of which is to preserve mountainous lands in open space. Commercial stables are permitted with a use permit, along with architecture and site approval, subject to the provisions of Chapter 5.65, Use Permit, and Chapter 5.40, Architecture and Site Approval (County of Santa Clara 1994).

MROSD Plans and Policies

MROSD lands are primarily managed in accordance with MROSD plans and policies including Good Neighbor Policies, Trail Use Policies and Guidelines, Resource Management Policies, as well as MROSD's Strategic Plan, Vision Plan, and 1992 Master Plan. These plans and policies are described in Chapter 2, "Preserve Conditions," of the Preserve Plan.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and objectives of the Preserve Plan related to land use would be implemented if the Preserve Plan is approved:

Goal MO4: Ensure that all leases, easements, access agreements, and other legal arrangements are consistent with Preserve Plan goals and District's mission

Obj MO-4.3 Work cooperatively with lessees to improve facilities and provide educational opportunities

Goal MO5: Develop a viable plan that is financially feasible for both a tenant and the District

Obj MO5.1 Establish a long-term lease

Obj MO5.2 Balance the District's mission with potential improvements and programs

Goal PU6: Maximize public benefits of Bear Creek Stables by broadening public access and use of the facility, consistent with the lease agreement

Obj PU 6.1 Formalize and expand public access within the Stables lease area, while ensuring the safety of horses, equestrians, and the general public visiting the site

Obj PU6.2 Design and construct new infrastructure for public programs and boarding facility

Obj PU6.3 Designate trail connections from the Stables to the rest of the Preserve

4.9.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Evaluation of potential land use impacts are based on a review of documents pertaining to the Preserve, including the *1994 Santa Clara County General Plan* (County of Santa Clara 1994) and the Santa Clara County Zoning Ordinance. In determining the level of significance, this analysis assumes that the Preserve Plan would comply with relevant state and local ordinances and regulations, as well as the General Plan policies presented above. Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, impacts on land use are considered significant if the proposed project would:

- ▲ physically divide an established community;
- ▲ conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- ▲ conflict with any applicable habitat conservation or natural community conservation plan; or
- ▲ conflict with existing zoning for agricultural use, or a Williamson Act contract.

ISSUES NOT DISCUSSED FURTHER

The physical division of an established community refers to the construction of a physical feature such as an interstate highway, major roadway, utility infrastructure expansion, or the removal of access features that would impair connections within a community. The Preserve Plan would involve allowing public access into the Preserve, construction of recreational facilities, and upgrades to the Alma College and Bear Creek

Stables facilities. The Redwood Estates residential development is located to the southeast; however, there are no established communities within the Preserve. The Preserve Plan does not propose any new land uses that would affect residential development on surrounding lands or divide any adjacent communities. Rather, the Preserve Plan provides regional trail connection and therefore increases connectivity. Therefore, this issue is not discussed further in this EIR.

The Preserve is not located within the boundary of a Habitat Conservation Plan or Natural Community Conservation Plan; therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State conservation plan. This issue is not discussed further in the EIR.

No facilities, or any other development or changes in land use are proposed within the Preserve parcel within Santa Cruz County. This parcel would remain unchanged from current conditions. Therefore, the goals and policies of the *Santa Cruz County General Plan* and the County of Santa Cruz Zoning Ordinance would not apply to implementation of the Preserve Plan and are not discussed below.

IMPACT ANALYSIS

Impact 4.9-1: Conflict with land use plans, policies, or existing zoning.

The portion of the Preserve where actions would be implemented under the Preserve Plan is designated as Other Public Open Lands under the *Santa Clara County General Plan* and is zoned HS. Use of the Preserve for recreation and open space preservation would not conflict with the existing land use designation or zoning. Commercial stables are also conditionally allowed under the HS zoning designation. Continued operation of Bear Creek Stables within the site would therefore require a Conditional Use Permit from the County. Obtaining a Conditional Use Permit would ensure that the uses proposed under the Preserve Plan would not conflict with land use plans, policies, or existing zoning. This impact would be **less than significant**.

The *Santa Clara County General Plan* land use designation for the Preserve is Other Public Open Lands, which are lands owned by various public agencies for purposes other than public parks and general recreational use. The General Plan states that Other Public Open Lands owned by MROSD are primarily undeveloped and open to the public without permits. Allowable uses for Other Public Open Lands include areas that are open to public access and areas that are open to the public through permit only. Use of the Preserve for recreation and open space preservation would be consistent with this land use designation. Implementation of the Preserve Plan would not result in a conflict with the *Santa Clara County General Plan* or any land use plans or policies.

The HS zoning designation allows for preserving mountainous lands in open space, including low density, low-intensity recreation, mineral and other resource extraction, and land in its natural state. Low-intensity commercial, industrial, and institutional uses may also be allowed if they require a remote, rural setting to serve the rural residents or community, or if they support the recreational or productive use, study, appreciation, or enhancement of the natural environment (County of Santa Clara 1994). General agriculture and agricultural accessory structures are allowed; however, commercial stables are only permitted with a use permit, subject to the provisions of Chapter 5.65, Use Permit, and Chapter 5.40, Architecture and Site Approval of the zoning code. In addition, development within areas zoned as HS require the following setbacks: 100 to 150-foot setback from any waterways and 30-foot setback from any County road right-of-way. Use of the Preserve for recreation and open space preservation would not conflict with the zoning designation; however, expansion of Bear Creek Stables would require a use permit from the County of Santa Clara. Use permits are required where specified in the zoning ordinance to establish and conduct certain uses deemed to be generally appropriate and potentially compatible with a zoning district, but for which the intensity, impacts, or other characteristics typically have a significant bearing on whether a use should be approved at a specific location and under what conditions it may be established and conducted. Architecture review and site approval conducted as part of the use permit process promotes quality development in

harmony with the surrounding area, through consideration of all aspects of site configuration and design, and generally promotes the public health, safety, and welfare. Review of proposed improvements through the use permit process would ensure that the setback requirements are met or mitigated, and that the uses proposed within the Preserve would be consistent with the zoning designation.

In addition, MROSD would manage the property in accordance with applicable MROSD plans, policies, and guidelines described in Chapter 2, "Preserve Conditions," of the Preserve Plan. Therefore, implementation of the Preserve Plan would not conflict with any land use plans, policies, or existing zoning. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.9-2: Conflict with Williamson Act contracts.

Three parcels within the Preserve are subject to Williamson Act contract. However, no facilities are proposed within these parcels and the Williamson Act contract for these parcels is currently in the non-renewal process. In addition, recreation is an allowable use within the Williamson Act contract for these parcels. Therefore, implementation of the Preserve Plan would not conflict the existing Williamson Act contract. This impact would be **less than significant**.

Three parcels within the Preserve are subject to Williamson Act contract. No improvements are currently proposed within these parcels. Compatible uses under the Williamson Act contract for these parcels include maintenance of the land in its natural state for the purpose of preserving open space for recreation and public and private riding and hiking trails. Therefore, if trails are constructed within these parcels in the future, they would be consistent with the Williamson Act contract. In addition, the Williamson Act contract for these parcels is currently in the 9-year non-renewal period and will terminate in 2017. Therefore, implementation of the Preserve Plan would result in a **less-than-significant** impact associated with conflicts with Williamson Act contracts.

Mitigation Measures

No mitigation measures are necessary.

4.10 NOISE

This section presents definitions of common noise descriptors; descriptions of applicable noise regulations, acoustic fundamentals, and existing ambient noise conditions; and an analysis of potential short- and long-term noise impacts associated with implementation of the project.

Background information on sound, noise, vibration, and common noise descriptors used throughout this section is located in Appendix E. Awareness of acoustic fundamentals and associated terms is needed to provide context and a better understanding of the technical terms and regulations referenced throughout this section.

4.10.1 Environmental Setting

AMBIENT NOISE ENVIRONMENT

Noise in the Preserves comes from a variety of sources, including roadways (e.g., Bear Creek Road and State Route [SR] 17). Bear Creek Road runs from the southwest to the northeast end of the Preserve, bisecting the project area. SR 17 is located near (and in some places adjacent to) the eastern boundary of the Bear Creek Redwoods Preserve. Traffic along SR17 is heaviest during peak morning and afternoon commute hours. According to the 1994 Santa Clara County General Plan, receptors near freeways and other major thoroughfares experience noise levels of 55 or greater A-weighted decibels (dBA) occurring over a 24-hour period (L_{dn}); receptors not dominantly affected by transportation noise experience noise levels ranging from 40 to 55 dBA L_{dn} ; and receptors in remote areas experience noise levels below 40 dBA L_{dn} (County of Santa Clara 1994: P-7).

Based on 2014 traffic volumes available from the California Department of Transportation (Caltrans), receptors within 1,355 feet of SR 17 experience an average traffic noise level of 55 dBA or higher, not accounting for terrain or noise barriers (Caltrans 2015) (see Appendix E for details). Other noise sources in the vicinity of the project area may come from farming operations, equestrian sources (such as whinnying and horse transport vehicles), occasional aircraft flyovers, and natural sources (such as birds chirping and wind blowing). On the whole, the rural and primarily undeveloped nature of the area make it quiet.

NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses generally include those where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern due to the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Parks, schools, historic sites, cemeteries, and passive recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship, and other similar places where low interior noise levels are of great importance, are also considered noise-sensitive. Noise-sensitive land uses are also considered to be vibration-sensitive. Vibration at high levels can also cause structural damage to older, typically historic-era, buildings.

Noise-sensitive land uses in the project vicinity include a single-family residences located at various distances surrounding the project site. A church, elementary school, and retreat center are also located in the project vicinity. Exhibit 4.2-1 in Section 4.2, "Air Quality," shows existing sensitive land uses relative to proposed project features.

4.10.2 Regulatory Setting

FEDERAL

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies where relevant.

Federal Aviation Administration

The Federal Aviation Administration establishes 65 dBA at a community noise equivalent level (CNEL) as the maximum noise exposure limit associated with aircraft noise measured at exterior locations in noise-sensitive land uses (e.g., land uses where quiet environments are essential such as residential areas, churches, and hotels). This standard is also generally applied to railroad noise.

STATE

The State of California has adopted noise standards in areas of regulation not preempted by the Federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Though not adopted by law, the *State of California General Plan Guidelines 2003*, published by the California Governor's Office of Planning and Research (2003), provide guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. Citing EPA's "Levels Document" and the State Sound Transmissions Control Standards, the state's general plan guidelines recommend an interior and exterior noise standards of 45 and 60 dBA CNEL for residential units, respectively (Governor's Office of Planning and Research 2003: 253-254).

California Department of Transportation

In 2013, Caltrans published the Transportation and Construction Vibration Manual, which provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 4.10-1 below presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 4.10-1 Caltrans Recommendations Regarding Vibration Levels

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Notes: PPV = peak particle velocity, in/sec = inches per second

Source: Caltrans 2013

LOCAL

Santa Clara County General Plan

The Noise element of the County General Plan contains the following applicable strategies, policies, and implementation recommendations (County of Santa Clara 1994):

Strategy #1: Minimize Noise Conflicts

Given that many types of land uses must coexist in the unincorporated county, the challenge for planning is to achieve maximum compatibility. Land use planning and development review must carefully evaluate the noise producing potential of new development. Where that potential exceeds acceptable limits, steps must be taken to minimize impacts on both existing and projected surrounding uses.

Parts of rural Santa Clara County are developed, although at very low density. Many rural residents have chosen to live in these areas precisely for the quiet character. New uses proposed for such areas need to be carefully assessed for the noise inducing potential. Adequate distancing alone can often mitigate most noise impacts which would otherwise be intolerable in more densely developed areas. However, further measures may be necessary to ensure that the quality of life for residents is not unduly degraded

Policies and Implementation

- ▲ **R-HS 1:** Significant noise impacts from either public or private projects should be mitigated.
- ▲ **R-HS 2:** The County should seek opportunities to minimize noise conflicts in the rural areas.
- ▲ **R-HS 3:** New development in areas of noise impact (areas subject to sound levels of 55 L_{dn} or greater) should be approved, denied, or conditioned so as to achieve a satisfactory noise level for those who will use or occupy the facility (as defined in “Noise Compatibility Standards for Land Use” and “Maximum Interior Noise Levels For Intermittent Noise”).

Implementation Recommendations

- ▲ **R-HS(i) 1:** Project design review should assess noise impacts on surrounding land uses. (Implementer: County)
- ▲ **R-HS(i) 2:** Where necessary, require appropriate noise mitigations. (Implementer: County)
- ▲ **R-HS(i) 3:** Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented. (Implementer: County)
- ▲ **R-HS(i) 4:** Require project-specific noise studies to assess actual and projected dBA noise contours for proposed land uses likely to generate significant noise. (Implementer: County)
- ▲ **R-HS(i) 5:** Take noise compatibility impacts into account in developing local land use plans. (Implementer: County)
- ▲ **R-HS(i) 7:** Support continued contacts (i.e., a task force, public education, and speaking opportunities) between farming and non-farming interests toward enhancing the compatibility of rural area uses. (Implementers: County, Farm Bureau, farming interests, community and real estate industry representatives)

Santa Clara County Noise Ordinance

The Santa Clara County Noise Ordinance (Chapter VII: Control of Noise and Vibration) contains the following applicable sections:

Sec. B11-192. Exterior noise limits.**(a) Maximum Permissible Sound Levels by Receiving Land Use.**

(1) The noise standards for the various receiving land use categories as presented in Table 4.10-2 shall apply to all such property within any zoning district.

Table 4.10-2 Exterior Noise Limits (Levels not to be exceeded more than 30 minutes in any hour)		
Receiving Land Use Category	Time Period	Noise Level (dBA)
One- and Two-Family	10:00 p.m.–7:00 a.m.	45
Residential	7:00 a.m.–10 p.m.	55
Multiple-Family Dwelling	10:00 p.m.–7:00 a.m.	50
Residential Public Space	7:00 a.m.–10:00 p.m.	55
Commercial	10:00 p.m.–7:00 a.m.	60
	7:00 a.m.–10:00 p.m.	65
Light Industrial	Any Time	70
Heavy Industrial	Any Time	75

Source: County of Santa Clara 1994

(2) No person shall operate or cause to be operated any source of sound at any location within the unincorporated territory of the county or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property either incorporated or unincorporated, to exceed:

- a. The noise standard for that land use as specified in Table 4.10-2 for a cumulative period of more than thirty (30) minutes in any hour; or
- b. The noise standard plus five (5) dBA for a cumulative period of more than fifteen (15) minutes in any hour; or
- c. The noise standard plus ten (10) dBA for a cumulative period of more than five (5) minutes in any hour; or
- d. The noise standard plus fifteen (15) dBA for a cumulative period of more than one (1) minute in any hour; or
- e. The noise standard plus twenty (20) dBA or the maximum measured ambient, for any period of time.

(3) If the measured ambient level exceeds that permissible within any of the first four (4) noise limit categories above, the allowable noise exposure standard shall be increased in five (5) dBA increments in each category as appropriate to encompass or reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(4) If the noise measurement occurs on a property adjacent to a different land use category, the noise level limit applicable to the lower land use category, plus five (5) dBA, shall apply.

(5) If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least ten (10) dBA below the ambient in order that

only the ambient level be measured. If the difference between the ambient and the noise source is five (5) to ten (10) dBA, then the level of the ambient itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the source.

(b) Correction for Character of Sound: In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech or hum, or contains music or speech conveying informational content, the standard limits set forth in table B11-192 shall be reduced by five (5) dBA. (Ord. No. NS-517.18, 9-22-81; Ord. No. NS-517.54, §§ 9, 10, 6-8-93)

Sec. B11-193. Interior noise standards.

(a) Maximum Permissible Dwelling Interior Sound Levels:

(2) No person shall operate or cause to be operated within a dwelling unit any source of sound or allow the creation of any noise which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed:

- a. The noise standard as specified in Table 4.10-2 for a cumulative period of more than five (5) minutes in any hour; or
- b. The noise standard plus five (5) dBA for a cumulative period of more than one (1) minute in any hour; or
- c. The noise standard plus ten (10) dBA or the maximum measured ambient, for any period of time.

(3) If the measured ambient level exceeds that permissible within any of the noise limit categories above, the allowable noise exposure standard shall be increased in five-dBA increments in each category as appropriate to reflect said ambient noise level.

(b) Correction for Character of Sound: In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech or hum, or contains music or speech conveying information content, the standard limits set forth in Table 4.10-2 shall be reduced by five (5) dBA. (Ord. No. NS-517.18, 9-22-81)

Sec. B11-194. Prohibited acts

(b) Specific prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

(2) Loudspeakers (amplified sound).

- a. Using or operating for any commercial purposes any loudspeaker system or similar device between the hours of 10:00 p.m. and 7:00 a.m. the following day, that the sound there from creates a noise disturbance across a residential real property line, or at any time violates the provisions of Section B11-153.
- b. Using or operating for any noncommercial purposes any loudspeaker, public address system or similar device between the hours of 10:00 p.m. and 7:00 a.m. the following day that the sound there from creates a noise disturbance across a residential real property boundary or at any time violates the provisions of Section B11-152.

(6) Construction/demolition.

- a. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekdays and Saturday hours of 7:00 pm and 7:00 am, or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance.

- b. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:
- i. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment (refer to Table 4.10-3 below):

Table 4.10-3 Maximum Noise Levels for Mobile Construction Equipment			
	Single- and Two-Family Dwelling Residential Area	Residential Area Multifamily Dwelling	Commercial Area
Daily, except Sundays and legal holidays 7:00 a.m.–7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
Source: County of Santa Clara 2015			

- ii. Stationary equipment. Maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment (refer to Table 4.10-4 below):

Table 4.10-4 Maximum Noise Levels for Stationary Construction Equipment			
	Single- and Two-Family Dwelling Residential Area	Residential Area Multifamily Dwelling	Commercial Area
Daily, except Sundays and legal holidays 7:00 a.m.–7:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
Source: County of Santa Clara 2015			

Sec. B11-156. Special provisions.

(c) Outdoor activities. The provisions of this chapter will not apply to occasional outdoor gatherings, public dances, shows, and sporting and entertainment events, provided the events are conducted pursuant to a permit or license issued by the County relative to the staging of the events.

(d) Exemption from Exterior Noise Standards. The provisions of section B11-152 shall not apply to activities covered by the following sections:

- (3) B11-194 (6) construction/demolition;
- (7) B11-154 (12), air-conditioning or air-handling equipment; (Ord. No. NS-517.18, 9-22-81)

Proposed Bear Creek Redwoods Preserve Plan

The proposed Bear Creek Redwoods Preserve Plan does not contain guidance on noise.

4.10.3 Vibration Criteria

CEQA states that the potential for any excessive groundborne noise and vibration levels must be analyzed; however, it does not define the term “excessive” vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration;

however, the Federal, state, and local governments have yet to establish specific groundborne noise and vibration requirements. The following publications of the Federal Transit Administration (FTA) and Caltrans are two of the seminal works for the analysis of groundborne noise and vibration relating to transportation and construction-induced vibration.

With respect to structural damage, Caltrans recommends that a level of 0.2 inches per second (in/sec) peak particle velocity (PPV) not be exceeded for the protection of normal residential buildings, and that 0.1 in/sec PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2004).

To address the human response to groundborne vibration, FTA has guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines recommend 65 vibration decibels (VdB) referenced to 1 microinch per second ($\mu\text{in}/\text{sec}$) and based on the RMS velocity amplitude for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).

The Santa Clara County Noise Ordinance (Chapter VII: Control of Noise and Vibration) contains the following applicable section:

2.7. Vibration. Operating or permitting the operation of any device that creates a vibrating or quivering effect that:

- (a) Endangers or injures the safety or health of human beings or animals; or
- (b) Annoys or disturbs a person of normal sensitivities; or
- (c) Endangers or injures personal or real properties.

4.10.4 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference noise levels, and usage factors from FTA's Guide on Transit Noise and Vibration Impact Assessment methodology (FTA 2006). Reference levels are noise and vibration emissions for specific equipment or activity types that are well documented and the usage thereof common practice in the field of acoustics. Assumptions regarding construction equipment used at three main construction areas are the same as those used to estimate air quality and greenhouse gas impacts in Sections 4.2, "Air Quality," and 4.6, "Greenhouse Gas Emissions." Absent project-specific equipment details for trail construction, it was assumed that trail construction or rehabilitation would involve the use of a single dozer, according to similar trail construction requirements used by the U.S. Department of Agriculture (USDA) (USDA 2014). The USDA also assumes use of hand tools for trail construction, where applicable. Specific equipment assumptions are available in Appendix D and Appendix E.

To assess potential long-term (operation-related) noise impacts due to the project, noise impacts from special events and project-generated increases in traffic were assessed. To estimate noise levels from special events, project-specific details associated with number of attendees, type of allowed activities, and limitations on amplified sound were used to estimate potential noise levels at the nearest sensitive receptor. For noise impacts related to project-generated increases in traffic, modeling was conducted for Bear Creek Road and SR17 with the U.S. Department of Transportation Federal Highway Administration Traffic Noise Model (FHWA 2006) and project-specific traffic data (Hexagon Transportation Consultants 2015). The analysis is based on the reference noise emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Note that the modeling conducted does not account for any natural or human-

made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels.

To evaluate relative significance, noise and vibration impacts were determined based on comparisons to applicable regulations and guidance provided by federal, state, and/or local agencies.

Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on the Appendix G of the State CEQA Guidelines, noise policies and standards in the Santa Clara County General Plan and Noise Ordinance, and Caltrans and FTA vibration standards, the project would result in a significant impact related to noise or vibration if it would:

- ▲ exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- ▲ exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- ▲ a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- ▲ a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- ▲ for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels;
- ▲ for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels; or
- ▲ conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise and vibration.

ISSUES NOT DISCUSSED FURTHER

Excessive Noise Associated with Operation of an Airport, Private Airstrip, or Heliport

The project site is not located within two miles of an active private airstrip or heliport. The closest airport, San Jose International Airport, is located approximately 10.5 miles north of the project site. The project would not include a heliport as part of the planned development. Further, the project is not anticipated to increase air traffic and, based on noise monitoring conducted at the site, would not expose on-site receptors to excessive noise levels associated with airport operations, associated with the San Jose International Airport. This issue is not discussed further.

IMPACT ANALYSIS

Impact 4.10-1: Short-term, construction-related noise impacts.

Project construction activities would involve the use of heavy-duty construction equipment. Construction noise would occur at various levels over a 15-to-20-year period at different locations in the project area. Construction activities would be conducted during weekday and limited Saturday daytime hours. In addition, construction activities would not occur within 126 feet of an existing occupied residence; therefore, construction noise would not exceed the County's standards identified in the Noise Ordinance. As a result, this would be a **less-than-significant** impact.

Short-term construction noise levels in the vicinity of the project site would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day; noise levels generated by those activities; distances to noise sensitive receptors; potential noise attenuating features such as topography, vegetation, and existing structures; and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment of the project site and in the surrounding area for the duration of the construction process.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes: mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., graders, dozers, pavers), while stationary equipment operates in a given location for an extended period of time (e.g., generators, cranes).

Construction activities would include removal of the existing stable and barn facilities at Bear Creek Stables, removal of existing trees, site preparation (e.g., excavation, grading, and vegetation clearing), trail construction, structure erection, and new parking areas. These activities may involve the use of heavy-duty construction equipment that would generate high noise levels. Typical noise levels generated by various types of construction equipment likely to be used are identified in Table 4.10-5.

Type of Equipment	Noise Level (dB L _{max}) at 50 feet
Backhoe	80
Concrete Mixer	85
Concrete Pump	82
Dozer	85
Fork Lift	85
Generator	82
Loader	85
Paver	89
Scraper/Excavator	85
Trucks	84

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

dB = decibels (instantaneous)
L_{max} = maximum sound level (highest instantaneous sound level measured during a specified period)

Source: FTA 2006

Parking and Facility Construction

The Lower Parking Area would experience the most intensive construction activity closest to sensitive receptors, involving simultaneous use of multiple pieces of construction equipment. Noise-generating construction activity would only occur during weekday and limited Saturday daytime hours. A residence is located 500 feet north of the Lower Parking Area, across Bear Creek Road. Additionally, a commercial land use, Camel Hill Vineyards, is located 150 north of the Lower Parking Area. The paving phase is the most intensive phase at the Lower Parking Area, requiring the operation of up to six pieces of equipment in a single day. Accounting for typical attenuation rates and elevation differences, the maximum noise level at the nearest residence to the Lower Parking Area could reach 69 dBA L_{max} . At the nearby commercial land use, construction noise levels could reach 81 dBA L_{max} . These noise exposure levels would not exceed the County's daytime noise standards (7:00 a.m. - 7:00 p.m.) for single family residential land uses (75 dBA L_{max}) and commercial land uses (85 dBA L_{max}), respectively. (See Appendix D and Appendix E for construction equipment assumptions.)

Trail and Bridge Construction

New trail construction may require the use of a single small dozer for an average of three hours per day. Most trail construction would be located over 1,000 feet from sensitive receptors such as residences and schools. Some new trail construction and rehabilitation of existing trails would occur within 200 feet from a few single-family residential properties located along Bear Creek Road near the northeast corner of the Preserve and along Summit Road at the south side of the Preserve. According to typical noise attenuation rates, a dozer would generate a noise level of 75 dBA or higher at receptors within 126 feet from the noise source. However, construction would occur more than 126 feet from noise sensitive areas on these properties (e.g., patio areas, house structures), not including driveways or forested backyard areas, and the closest residences would not be exposed to noise generated from equipment for more than 15 minutes per day. Thus, sensitive receptors would not be exposed to temporary noise levels exceeding the County's daytime standards 75 dBA L_{max} for construction activities.

Pedestrian and vehicle bridges would be located over 1,000 feet from sensitive receptors. Therefore, as described above for trails construction, noise generated from equipment associated with bridge construction would not exceed the County's daytime noise standard. It should be noted that construction of remote bridges may require use of a helicopter for a few hours (total) for materials transport. Due to the distance of the bridge locations from the sensitive receptors, a helicopter would not need to hover near the ground in the immediate vicinity of any of the sensitive receptors. The helicopter may pass over sensitive receptors during the materials transport for brief and infrequent periods of time. Unlike typical construction equipment, helicopter and other aircraft flyovers are common occurrences in the project area. This brief aircraft noise would not be unusual and would not result in substantial noise-related effects to existing sensitive receptors in the vicinity.

Comparison to Applicable Standards and Existing Noise Levels

As stated in the project description, construction activities would be limited to the daytime hours and would not be permitted on weekends and legal holidays. Thus, construction-generated noise would not exceed the more stringent nighttime and early morning (7:00 a.m. - 7:00 p.m.) standards. Additionally, construction noise levels would not exceed applicable standards at off-site sensitive receptors.

Given the rural nature of the project area, ambient noise levels are between 40 and 55 dBA L_{dn} , as estimated in the County's General Plan (County of Santa Clara 1994: P-7). As discussed in Appendix E, a 5-dBA increase is generally perceived as a distinctly noticeable increase and a 10-dBA increase is generally perceived as a doubling of loudness. Construction noise levels would be at or below the County's threshold of 75 dBA L_{max} at nearby noise-sensitive receptor areas. Additionally, these activities would be limited to daytime hours and would not disturb receptors during the more sensitive evening and nighttime hours.

Conclusion

Project-generated construction source noise levels would not exceed applicable noise standards and potentially result in the exposure of noise-sensitive receptors to a substantial temporary increase in ambient noise levels. Therefore, this impact would be **less than significant**.

Mitigation Measure

No mitigation measures are necessary.

Impact 4.10-2: Short-term, construction-related vibration impacts.

Site preparation and grading activities could require the use of construction equipment that would generate ground vibration. However, the levels of construction-generated ground vibration at nearby sensitive receptors would not be excessive. This impact would be **less than significant**.

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as bulldozers and trucks. Blasting activities also generate relatively high levels of ground vibration. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and high levels of vibration can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions.

As described above (see Impact 4.10-1), development of the project would include construction activities that require the use of various types of equipment. Construction of the project may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. As shown in Table 4.10-6, pile driving and blasting are the typical construction activities that generate the greatest ground vibration. Pile driving and blasting are not proposed and therefore the maximum ground vibration and noise levels would be associated with the use of dozers during site preparation and grading activities.

Table 4.10-6 Representative Ground Vibration and Noise Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec) ¹	Approximate L _v (VdB) at 25 feet ²
Impact Pile Driver	1.518	112
Blasting	1.13	109
Sonic Pile Driver	0.734	104
Large Dozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Rock Breaker	0.059	83
Jackhammer	0.035	79
Small Dozer	0.003	58

PPV = peak particle velocity; L_v = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4

Source: FTA 2006

According to FTA, vibration levels associated with a dozer are 0.089 in/sec PPV and 87 VdB at 25 feet. The use of a large dozer would not exceed the Caltrans recommended level of 0.2 in/sec PPV with respect to structural damage as the noted vibration level at 25 feet is less than 0.2 in/sec PPV. With respect to human disturbance, the use of a large dozer would exceed the FTA maximum acceptable level of 80 VdB within 40 feet of its operation. Grading activities requiring large dozers, such as those occurring at the proposed staging areas, would not occur this close to existing structures.

Use of small dozers may occur within 200 feet of existing structures during trail construction and rehabilitation, as discussed in Impact 4.10-1 and as shown in Table 4.10-6, the vibration level generated by a small dozer is 0.003 in/sec PPV and 58 VdB at 25 feet. No new trail construction or rehabilitation would occur as close as 25 feet from an existing residence. Thus, the use of a small dozer would not exceed the Caltrans recommended level of 0.2 in/sec PPV with respect to structural damage as the noted vibration level at 25 feet is substantially below 0.2 in/sec PPV. Grading activities requiring small dozers, such as those occurring along proposed trails, would not occur this close to existing structures.

Therefore, construction associated with the Bear Creek Redwoods Preserve Plan would not result in the exposure of any sensitive receptors or structure to excessive vibration levels. This impact would be **less than significant**.

Mitigation Measure

No mitigation measures are necessary.

Impact 4.10-3: Long-term increase in noise levels from operation of on-site stationary noise sources.

The project would include new stationary noise sources including activities in parking lots and at event spaces, and new heating, ventilation, and air conditioning (HVAC) units. Project-generated stationary noise sources would not result in noise levels that exceed applicable Santa Clara County noise standards or levels that would result in a substantial long-term increase in noise. This impact would be **less than significant**.

Daily Operation

Operation of the proposed changes in the Preserve would result in additional stationary noise sources from new HVAC units at planned new and renovated buildings at Bear Creek Stables and the Alma College site. The existing number of horses stabled at Bear Creek Stables would not change substantially under project conditions; thus, typical daily noise sources from equestrian uses at Bear Creek Stables would not substantially change. Additionally, noise levels from building HVAC sources are typical of buildings and are exempt from the County's exterior noise standards (Sec. B11-156 (7)).

Operation of proposed trails and the Alma College site would result in the operation of new parking lots. Noise levels from parking lots can vary depending on the number of vehicles at any given time in the parking lot, the speed at which vehicles are traveling, and the types of vehicles present. Typical noise sources include car engines running/idling, doors slamming, car alarms going off, cars honking, and people talking. The project would generate up to 250 vehicle trips daily, not accounting for special events (Hexagon Transportation Consultants 2015). These additional vehicles would be split between proposed parking lots at the Lower Parking Area and the Alma College site and would likely arrive sporadically throughout the day with an average of 16 vehicles per hour¹. With the closest sensitive receptor 500 feet north of the Lower Parking Area, long-term impacts from daily operation would be minimal.

Special Events

Various outdoor events and activities could occur at both Bear Creek Stables and the Alma College site. Special events at the stables would likely be limited to a few per year. Special events would include, but would not be limited to, weddings, equestrian events, and commercial events. Outdoor events would generally occur at the proposed covered arenas at Bear Creek Stables and the chapel at the Alma College site. These events would not permit amplified sound or music that could be heard beyond the boundaries of the event site

Caltrans characterizes normal speech at 3 feet to have a 70 dBA noise level (Caltrans 2013: Table 2-5). This level was adjusted to 90 dBA to reflect potential increases from normal speech due to cheering or yelling. A maximum of 250 attendees would be allowed per event. Noise levels from unamplified patron voices and

¹ Assuming an 8-hour day and same number of vehicles at Alma College and the Lower Parking Area.

cheers, assuming an average maximum of 90 dBA per attendee at 3 feet and using typical noise attenuation rates, would reach 45 dBA at 1,200 feet. The closest receptor to any proposed event space is a single family home located approximately 1,400 feet north of the proposed main area at Bear Creek Stables; therefore, the noise level would be slightly lower than 45 dBA at this location. In addition, the vegetation and hilly terrain separates the sensitive receptors to the north of Bear Creek Stables from the proposed arenas and would further attenuate noise generated by the arena during special events.

Forty-five dBA is the County's lowest exterior noise limit, applicable to one-and two-family homes during night-time hours. Special events would only occur during daytime Preserve hours.

Conclusion

Daily operation and special events at the Preserve would not increase noise levels beyond County limits or cause substantial increases in ambient noise levels at receptors. Therefore, long-term stationary-source noise levels would not result in the exposure of persons to or generation of noise levels in excess of applicable standards, or create a substantial permanent increase in ambient noise levels in the project vicinity without the proposed project. This impact would be **less than significant**.

Mitigation Measure

No mitigation measures are necessary.

Impact 4.10-4: Project-related traffic noise increase.

Traffic generated by the project would result in less than a 2 dBA increase in traffic noise along Bear Creek Road and SR17. This level of noise increase would not be perceptible to the human ear and, therefore, would not be considered substantial. This impact would be **less than significant**.

Project implementation would result in an increase in average daily trip (ADT) volumes on affected roadway segments and, potentially, an increase in traffic noise levels. Generally, a doubling of a noise source is required to result in an increase of 3 dBA, which is perceived as barely noticeable by humans (Egan 2007). Thus, in regard to traffic noise specifically, a noticeable increase in traffic noise could occur with a doubling in the volume of traffic on a roadway. The Santa Clara County Noise Ordinance establishes a 55 dBA and 65 dBA noise limit for single-family residential and commercial land uses during daytime hours (7:00 a.m. to 10:00 p.m.), respectively.

At full build-out, the project would generate 250 additional vehicle trips during the weekday and up to 1,167 vehicle trips on weekends when special events are held (see Section 3.12, "Traffic and Transportation"). These trips would be distributed broadly over the local street network, but nearly all vehicles traveling to and from the project site would travel on Bear Creek Road.

According to intersection volume data provided in the Traffic Study, the existing annual ADT volume along Bear Creek Road is 2,556 vehicles per day (Hexagon Transportation Consultants 2015). Under existing-plus-project conditions, annual ADT volume would increase to 3,558, a 39 percent increase, assuming two special events occurring simultaneously. According to noise modeling results, the increase in noise along Bear Creek Road would be less than 2 dBA L_{dn} .

In addition, because most visitors would be originating from population centers such as nearby Los Gatos and surrounding communities, the increase in vehicle trips would also occur along SR17, which currently has an annual ADT of 67,000 near Bear Creek Road. However, the 1,002 increase in annual ADT due to the project would increase traffic volumes on SR17 by less than 2 percent, resulting in no noticeable increase in traffic noise levels. Consequently, vehicle trips generated by the project would not result in a substantial increase in traffic noise. (See Appendix E for the detailed modeling results.)

It should be noted that during peak construction months, it is estimated that up to 30 construction workers and up to 15 trucks would access the site per day, during the grading period at former Alma College. This is

anticipated to occur during the rehabilitation of the Alma College site and reconstruction of Bear Creek Stables facilities. The peak of project construction would, therefore, temporarily generate up to 60 one-way auto trips and 15 one-way truck trips per day. Trucks would access the site via Highway 17 whereas construction workers would access the site via Bear Creek Road. An increase of 15 truck trips per day to the current daily traffic on Highway 17 is negligible, and the addition of 60 worker trips on Bear Creek Road would be less than 3 percent of existing ADT on Bear Creek Road. According to noise modeling results, the increase in vehicles during construction would increase existing noise levels by less than 1 dBA. Thus, vehicle trips generated by project construction would not result in a substantial increase in traffic noise.

Therefore, traffic noise generated by project construction and operation would result in a **less-than-significant** impact.

Mitigation Measure

No mitigation measures are necessary.

4.11 RECREATION

This section describes existing recreation resources and opportunities in the project vicinity, as well as the regulatory and planning influences on recreation. Discussed in this section are potential impacts of the proposed project on recreation resources in the vicinity, including potential impacts caused by providing regional trail connectivity. Mitigation measures are recommended to address impacts determined to be significant or potentially significant.

Two comments from the County pertaining to recreation were received during public review of the Notice of Preparation for the proposed project. The comments requested evaluation of effects of the Preserve Plan on regional trails, access to other park properties, and potential opportunities for regional trail connectivity.

4.11.1 Environmental Setting

Bear Creek Redwoods Open Space Preserve, referred to herein as project site or Preserve, is located just west of the Lexington Reservoir County Park. El Sereno Open Space Preserve and Sanborn-Skyline County Park are located to the north, and Sierra Azul Open Space Preserve is located to the northeast. Private property abuts the entire Preserve except for the southeast corner, which is bordered by the Moody Gulch property, an open space area currently closed to the public and owned by the Santa Clara County Parks and Recreation Department. Parks, preserves, and trails in the surrounding area are shown in Exhibit 4.11-1. A description of existing recreational facilities at the Project Site and surrounding parks and preserves are described below.

BEAR CREEK REDWOODS OPEN SPACE PRESERVE (PROJECT SITE)

The Preserve encompasses more than 1,400 acres of native evergreen forests, grasslands, ponds, and perennial creeks in the south-central portion of Santa Clara County, nine miles south of Los Gatos. The Preserve is publicly accessed via Bear Creek Road off Highway 17 or State Route 35 (SR 35); several gates block public road access (e.g., Highway 17, Summit Road) into the Preserve from other areas.

The current availability of recreational activities in the project site is very limited. Approximately 10 miles of historic logging and access roads on the eastern sub-zone of the Preserve are available for use by-permit-only for stable riders and hikers (see Exhibit 3-4 in Chapter 3, "Project Description"). Permit holders may use the 10-vehicle parking lot off of Bear Creek Road, which includes equestrian parking. Because of the lack of additional parking and the absence of an established pedestrian crossing at Bear Creek Road, the western sub-zone of the Preserve and its additional 8 to 10 miles of historic roads remain closed.

Although the Preserve is mainly wooded, rugged land, within its boundary, there are two developed areas that are part of the proposed Plan: the former Alma College site and Bear Creek Stables. The former Alma College site, a cluster of buildings and large-scale retaining wall located in the northeast sub-zone of the Preserve, does not currently offer any recreational opportunities but is visible to recreationalists on nearby trails. Bear Creek Stables is also located in the northeast sub-zone of the Preserve and currently offers horseback riding opportunities. The stables contain hillside pastures, two arenas, and paddocks for a maximum of 72 horses. Programs at the Stables currently include horseback riding along trails located around the facility and extending throughout the eastern sub-zone of the Preserve; educational programs for children (nature walks, caring for small farm animals in the Stables area); and occasional horse riding clinics.

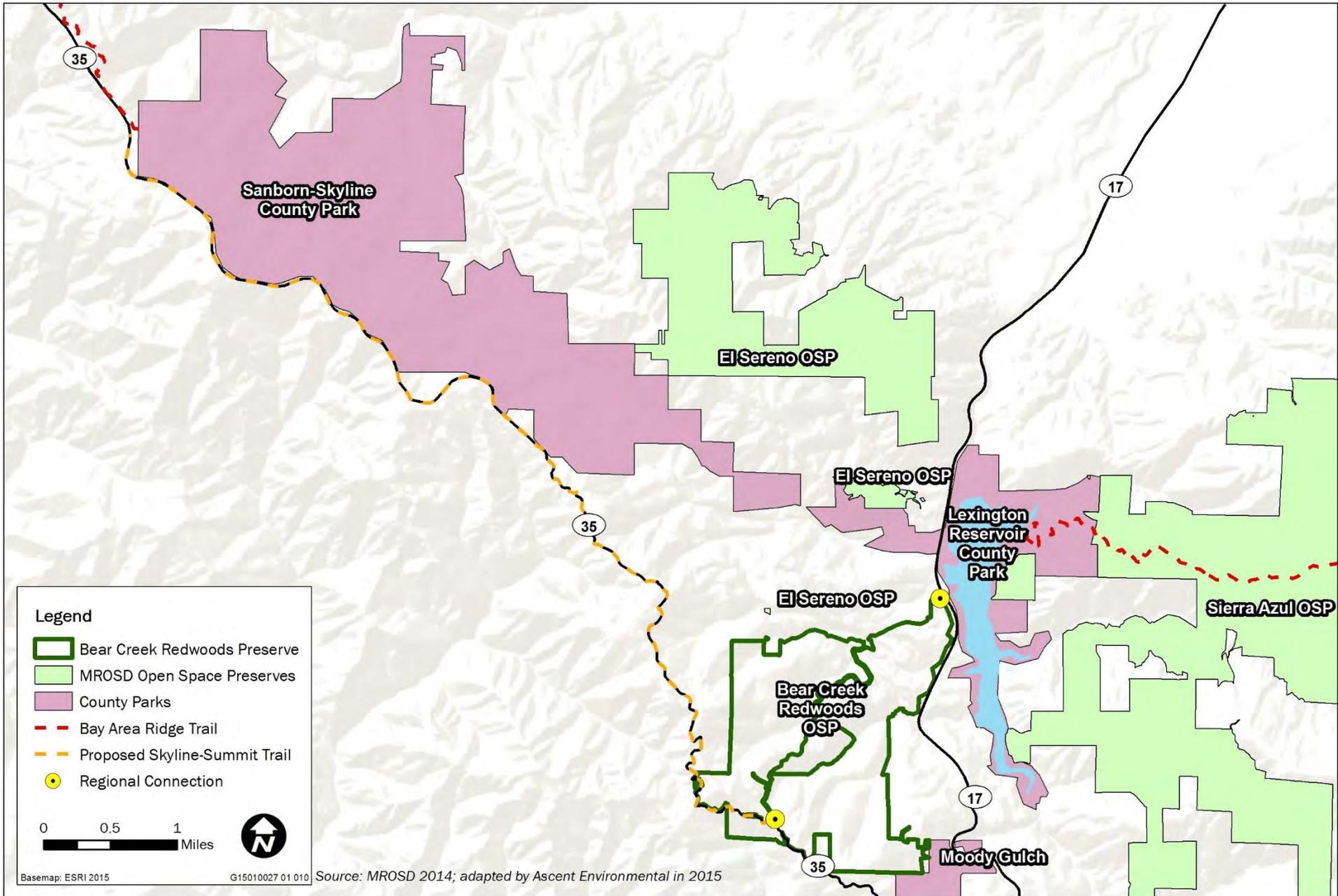


Exhibit 4.11-1

Surrounding Parks and Open Space Preserves



BAY AREA RIDGE TRAIL

Bay Area Ridge Trail (Ridge Trail) is a planned 550-mile multi-use regional trail along the hill and mountain ridgelines ringing the San Francisco Bay Area. When complete, the trail will connect over 75 parks and open spaces. So far, over 330 miles of the trail have been completed.

Although this regional trail does not currently connect directly with the project site, the Ridge Trail connects with the sub-regional trail around Lexington Reservoir, located north/northeast and adjacent to the project site. Skyline-Summit Trail is an on-street bicycle route that connects the Ridge Trail in Sanborn-Skyline County Park with the Ridge Trail just south of Loma Prieta; this trail crosses the southern portion of the project site along SR 35.

LEXINGTON RESERVOIR COUNTY PARK

Located north of the project site, Lexington Reservoir County Park is a 914-acre park and reservoir that includes a 475-acre man-made reservoir and serves as the trailhead for the Los Gatos Creek Trail which runs from the reservoir through the cities of Los Gatos, Campbell, and San Jose. This County park is also part of a chain of regional parks and open spaces connected by the Ridge Trail. When the Ridge Trail is completed, Lexington Reservoir County Park will connect with other regional parks in the greater San Francisco Bay region, including Sanborn with Almaden Quicksilver County Parks as well as Sierra Azul Open Space Preserve (Santa Clara County Parks 2015). A multi-use trail at the park located near the project site starts at Montevina Road, just west of Highway 17, and curves to the other side of Highway 17 at Bear Creek Road and back to Montevina Road (Santa Clara County Parks undated). The park area west of Highway 17, between Beardsley and Montevina Roads, is not accessible and is currently closed to the public.

Lexington Reservoir County Park is open year round from 8:00 a.m. until sunset. Biking, hiking, fishing, interpretive programs, picnicking, non-power boating, and dogs on leash are permitted at the park. Designated staging areas are located off Alma Bridge Road at the boat launch ramp and Miller Point day use area. Portable toilets and first-come-first-serve picnic tables are also available at the boat launch area. This area provides access to the Jones Trail and Saint Joseph's Hill Open Space Preserve. The Miller Point day use area is located approximately 1.3 miles from the dam off Alma Bridge Road. A parking area is available for access to a picnic area and trails and is a popular fishing access.

EL SERENO OPEN SPACE PRESERVE

Located just over one mile north of the project site, MROSD's El Sereno Open Space Preserve is a 1,415-acre Preserve with nearly 7.4 miles of wide, gradual trails that provide numerous recreational opportunities. Overlook Trail accommodates hikers, bicyclists, and limited dogs on leash (permitted only on the Overlook Trail). Aquinas Trail is a three-mile trail open to hikers.

A six-car parking lot is available near the Overlook Trail trailhead by permit only. This Preserve is open dawn to one-half hour after sunset.

SANBORN-SKYLINE COUNTY PARK

Located north of the project site is the 3,688-acre Sanborn-Skyline County Park, located in the Santa Cruz Mountains on Sanborn Road between Saratoga and Skyline Boulevard. This mountain park offers over 15 miles of hiking trails, fishing, camping, RV camping and picnicking opportunities. "Walk-in" campgrounds are open late-March through late-October. Park amenities also include an outdoor amphitheater and interpretive programs.

The park is open year round from 8:00 a.m. to sunset. Pets on leash are allowed in designated areas and the campground (Santa Clara County Parks 2015b).

SIERRA AZUL OPEN SPACE PRESERVE

Located northeast of the project site and on the east side of the Lexington Reservoir is MROSD's Sierra Azul Open Space Preserve. Encompassing more than 18,000 acres, it is MROSD's largest Preserve and a popular destination due to its close proximity to urban areas of the South Bay. Because of its size, the Preserve is divided into four areas: Kennedy Limekiln, Mount Umunhum, Cathedral Oaks, and Rancho de Guadalupe. Hiking opportunities are available on all trails throughout the Preserve and limited dog-on-leash, bike and equestrian access is provided on designated trails within the Preserve. Parking for visitors is available in all four areas of the Preserve.

4.11.2 Regulatory Setting

FEDERAL

There are no federal programs or policies addressing recreation that pertain to the project.

STATE

California Recreational Trails Committee

According to California Public Resources Code (5074(a)), the California Recreational Trails Committee is responsible for coordinating trail planning and development among cities, counties, and districts. In carrying out this responsibility, the committee reviews records of easements and other interests in lands that are available for recreational trail usage, including public lands, utility easements, other rights-of-way, gifts, or surplus public lands that may be adaptable for such use. The Committee is charged in-part with promoting trail use and regional and statewide planning efforts.

LOCAL

County of Santa Clara

General Plan

The Parks and Recreation Element of the County of Santa Clara General Plan (Santa Clara County 1994, p. G-25) includes five general strategies concerning regional parks and public open space in the County:

- Strategy #1: Develop Parks and Public Open Space Lands
- Strategy #2: Improve Accessibility
- Strategy #3: Balance Recreational and Environmental Objectives
- Strategy #4: Facilitate Interjurisdictional Coordination
- Strategy #5: Encourage Private Sector and Non-profit Involvement

The Parks and Recreation Element includes goals and policies for developing and managing existing parks and open space preserves within the County. The following General Plan policies may apply to the proposed project:

- ▲ **C-PR 1:** An integrated and diverse system of accessible local and regional parks, scenic roads, trails, recreation facilities, and recreation services should be provided.
- ▲ **C-PR 2:** Sufficient land should be acquired and held in the public domain to satisfy the recreation needs of current and future residents and to implement the trailside concept along our scenic roads.
- ▲ **C-PR 3:** The County's regional park system should: a. utilize the county's finest natural resources in meeting park and open space needs; b. provide a balance of types of regional parks with a balanced geographical distribution; c. provide an integrated park system with maximum continuity and a clear

relationship of elements, using scenic roads, bikeways, and trails as important linkages; and d. give structure and livability to the urban community.

- ▲ **C-PR 4:** The public open space lands system should a. preserve visually and environmentally significant open space resources; and b. provide for recreation activities compatible with the enjoyment and preservation of each site's natural resources, with trail linkages to adjacent and nearby regional park lands.
- ▲ **C-PR 7:** Opportunities for access to regional parks and public open space lands via public transit, hiking, bicycling, and equestrian trails should be provided. Until public transit service is available, additional parking should be provided where needed.
- ▲ **C-PR 14:** Parks and recreation system planning, acquisition, development, and operation should be coordinated among cities, the County, State and Federal governments, school districts and special districts, and should take advantage of opportunities for linkages between adjacent publicly owned parks and open space lands.
- ▲ **C-PR 17:** The private sector and non-profit organizations should be encouraged to provide outdoor recreational opportunities. In rural areas, private recreational uses shall be low intensity.

Santa Clara County Countywide Trails Master Plan Update (1995)

The Santa Clara County Countywide Trails Master Plan Update serves as a land use plan for implementing regional, sub-regional, and connector trail routes within Santa Clara County. The Countywide Trails Master Plan is incorporated as part of the Parks and Recreation Element of the County General Plan. The plan proposes approximately 535 miles of off-street countywide trail routes, including several that provide potential linkages between the project site and surrounding lands. A summary of countywide trails adjacent to the project site includes:

- ▲ **Regional trails.** The Northern Recreation Retracement Route is a branch of the Juan Bautista de Anza National Historic Trail that travels north through the western side of Santa Clara Valley. This regional trail overlaps with the Bay Area Ridge Trail at the Sierra Azul Preserve, which is located north of the project site. Although no regional trails connect directly with the project site, the Bay Area Ridge Trail connects with the sub-regional trail around Lexington Reservoir, located adjacent to the project site.
- ▲ **Sub-regional trails.** Los Gatos Creek Trail extends upstream through Campbell and Los Gatos to the Bay Area Ridge Trail at Lexington Reservoir, located adjacent to the project site.
- ▲ **Connector trails.** Skyline-Summit Trail is an on-street bicycle route that connects the Bay Area Ridge Trail in Sanborn-Skyline County Park with the Bay Area Ridge Trail just south of Loma Prieta. This trail crosses the southern portion of the project site.

Midpeninsula Regional Open Space District Policies

Good Neighbor Policy

MROSD's Board of Directors adopted its Good Neighbor Policy in 1988, to promote positive relationships with residents and property owners located adjacent or close to a MROSD preserve, who may be affected by maintenance or visitor activities. The policy was amended in 1996 and 2007, and currently includes provisions and implementation guidelines that emphasize public participation in decisions on day-to-day conduct and long-range planning activities, and respect for private property.

Trail Use Policies

The Trail Use Policies were adopted by MROSD's Board of Directors in 1990, and amended in 2000. This set of policies guides the establishment of trail use designations throughout MROSD to promote safe and enjoyable experiences for all who use MROSD lands. A summary of the policies that relate to the proposed project follows:

- ▲ Provide multiple-use on individual trails where such use is consistent with the protection of the natural and scenic values of open space.
- ▲ Protect the opportunity for tranquil nature study and observation, especially in those areas identified as providing a unique wilderness experience.
- ▲ Provide multiple-use trail access (including bicycles) to the Bay Area Ridge Trail and other regional trails connecting to urban areas.
- ▲ Consider a guideline target of 60-65% multiple-use trails (including bicycles) to 35-40% hiking and equestrian trails (excluding bicycles).

Provide trail access for a variety of physical capabilities and user needs (including persons with physical limitations).

- ▲ Support trail use with a strong education program that promotes trail etiquette and low-impact use to reduce negative trail use impacts.
- ▲ Monitor trail use on a regular basis to evaluate the effectiveness of management programs and recommend changes if necessary.
- ▲ Work with other agencies, interest groups, and private landowners to promote an interconnecting trail system throughout the region.
- ▲ Recognize the need to review and revise policies to adopt the changing trail use characteristics over time.

Trail Use Guidelines and Mitigation Measures

MROSD's Board of Directors adopted this document in 1993, to provide a comprehensive strategy for implementing the 1990 Trail Use Policies. The trail use guidelines section establishes a procedure for designating appropriate trail class and use on MROSD's vast and diverse trail system. The mitigation measures section analyzes methods designed to augment trail use guidelines to reduce trail use conflicts, including education, regulation, enforcement, and measures of trail improvement.

Open Space Vision Plan

In 2012, MROSD launched a broad public outreach process to establish a path forward through the next 40 years. To systematically arrive at a strategic course for the future, MROSD launched Imagine the Future of Open Space, an 18-month visioning process to: 1. Engage as many people as possible in a meaningful and structured conversation about the preservation and use of open space in MROSD; 2. Assess critical opportunities for conservation on the San Francisco Peninsula, South Bay, and San Mateo Coastside; and 3. Develop a regional vision for the future of open space. Through a comprehensive community engagement process and a thorough resource assessment, MROSD developed 54 Priority Action Portfolios focused on the three legs of the mission: land protection, habitat restoration, and low-intensity recreation. These were prioritized by the public and approved by MROSD's Board of Directors in January 2014 as a slate of 25 high-priority project portfolios and 29 additional portfolios to be completed as time and resources allow. Five months later, the general public demonstrated broad community support for the Vision Plan by passing Measure AA, which authorized MROSD to issue up to \$300 million in bonds over the next 20 to 30 years to fund the hundreds of capital projects within the 25 top priority portfolios.

Regional Open Space Study (1998)

The Regional Open Space Study (ROSS) shows the general extent of lands and public access improvements existing and under consideration to complete MROSD's greenbelt mission. This document is subject to periodic review and modification by the Board of Directors through a public process. It is also submitted to the counties, cities, and various land conservation-oriented local, state, and federal agencies and organizations for review and comment. The 2014 Vision Plan incorporated the ROSS as part of the regional trail connections for prioritization, planning and implementation.

Proposed Bear Creek Redwoods Preserve Plan

Through the planning process, the proposed Preserve Plan has identified a number of goals and objectives related to recreational resources. Goals and objectives relevant to recreational resources are provided below.

Goal PU1: Allow general public access and enhance recreational opportunities in the Preserve

- Obj PU-1.1 Follow appropriate steps to responsibly open the Preserve to the public for low intensity recreation and enjoyment
- Obj PU-1.2 Expand and improve the Preserve trail system
- Obj PU-1.3 Introduce a safe pedestrian crossing on Bear Creek Road to connect the Preserve's east and west sides
- Obj PU-1.4 Where appropriate, allow bicycle use; consider a multi-use trail facility
- Obj PU-1.6 Provide trail-related amenities

Goal PU2: Provide low-impact, high-value site-sensitive interpretation and education activities

- Obj PU-2.1 Ensure any new visitor access features are sited and designed to protect landscape visual character
- Obj PU-2.2 Provide opportunities to learn about natural resources and foster public appreciation of open space values

Goal PU3: Expand opportunities for people with diverse physical abilities to enjoy the Preserve

- Obj PU-3.1 Expand and improve ADA parking
- Obj PU-3.2 Provide loop trails and connection to parking areas and key destination sites, as well as those with a wide range of difficulty to reflect a diverse population

Goal PU4: Provide regional and local trail connections

- Obj PU-4.1 Seek to attain easements or other agreements to make key regional trail connections

Goal PU5: Actively involve the public in the planning and management of the Preserve

- Obj PU-5.1 Provide opportunities to learn and support resource management activities through the docent, volunteer, and other outreach programs
- Obj PU-5.2 Encourage and engage public and neighbors in future Plan amendments that affect the use and management of the Preserve

Goal PU6 – Maximize public benefits of Bear Creek Stables by broadening public access and use of the facility

- Obj PU-6.1 Formalize and expand public access within the Stables lease area, while ensuring the safety of horses, equestrians, and general public visiting the site
- Obj PU-6.2 Design and construct new infrastructure for public programs and boarding facility
- Obj PU-6.3 Designate trail connections to the rest of the Preserve

Goal MO1: Maintain trails and facilities to protect the natural environment and provide for a quality visitor experience

Obj MO-1.1 Maintain a high quality, low maintenance, safe, and enjoyable road and trail system

Obj MO-1.2 Reduce potential user conflicts

4.11.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Evaluation of potential recreational impacts are based on review of the Santa Clara County Countywide Trails Master Plan Update and MROSD's vision for the proposed Preserve Plan. In determining level of significance, this analysis assumes that the project would comply with the relevant state and local policies, ordinances and regulations presented above. Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on aesthetics and visual resources if it would:

- ▲ increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- ▲ include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

ISSUES NOT DISCUSSED FURTHER

One of the primary goals of the project is to provide additional recreational facilities and opportunities within the Preserve. Construction of these recreational facilities may have a physical effect on the environment. The potential for the project to have an adverse physical effect on the environment is the subject of this EIR and discussed in Sections 4.1 through 4.13.

IMPACT ANALYSIS

Impact 4.11-1: Increase the use of other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The proposed project would provide a regional trail connection to the adjacent Lexington Reservoir County Park and Sierra Azul Open Space Preserve and a regional trail connection to Sanborn-Skyline County Park via the proposed Skyline-Summit bike trail adjacent to SR 35. These regional trail connections may add new recreational users to these surrounding parks. However, the project's regional trail connections are consistent with the Bay Area Ridge Trail and Santa Clara County Countywide Trails Master Plan. The project also includes the opening of additional trail opportunities and parking and restrooms facilities onsite which would appropriately serve new recreational users. Therefore, implementation of the proposed project is not expected to substantially increase the demand for or use of other parks and open space facilities, such that new or expanded facilities would be required. This impact would be **less than significant**.

Currently, 10.3 miles of trail located south of Bear Creek Road is available to hikers and equestrian users by permit only. Under the proposed Preserve Plan, approximately 9.5 miles of additional trails would be

constructed and opened to the public. Proposed regional connections (see Exhibit 4.11-1) would connect the Ridge Trail, a major regional trails network, to the project site. The multi-use trail would traverse the site from the intersection of Summit and Bear Creek Road (i.e., regional connection Skyline-Summit trail to the Ridge Trail) on the south of the Preserve to Alma Bridge on the north of the Preserve (i.e., connection to Lexington Reservoir). These regional trail connections would provide new access to these surrounding parks, which could result in a slight increase in use. However, the project's regional trail connections are consistent with the Ridge Trail and Santa Clara County Countywide Trails Master Plan; therefore, any project-generated increase in use of non-MROSD trails is already anticipated in these regional trails plans. Furthermore, the recreational facilities provided by the proposed project, including trails, restrooms, and parking, would provide additional recreational options in the region, which would likely alleviate pressure on existing recreational facilities.

The proposed project would not include residential uses or significant employment. Therefore, the project is not expected to result in substantial population growth that would increase the use of parks and recreational facilities.

For the reasons described above, implementation of the proposed project is not expected to substantially increase the demand for or use of other parks and open space facilities, such that new or expanded facilities would be required. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

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4.12 TRAFFIC AND TRANSPORTATION

This section discusses the existing roadway network and transportation facilities in the project vicinity; describes the applicable federal, state, and local regulations and policies related to transportation; describes existing traffic and circulation conditions within the surrounding area; and analyzes the potential near- and long-term impacts from implementation of the Preserve Plan on transportation and traffic. Mitigation measures are provided where feasible to reduce significant impacts. The analysis provided herein is based on a transportation and traffic analysis conducted by Hexagon Transportation Consultants, Inc. (Hexagon 2016) (Appendix B).

One comment letter pertaining to traffic and transportation was received in response to the Notice of Preparation for the Preserve Plan. The letter commented on improving ingress and egress to and throughout the Preserve.

4.12.1 Environmental Setting

Access to the Preserve is primarily provided via Bear Creek Road, with direct access to Bear Creek Stables and the former Alma College site provided by Mellots Road and Alma College Road, respectively. Highway 17 is adjacent to the northeast corner of the Preserve, from which Bear Creek Road bisects the Preserve to its southern boundary on Summit Road (Highway 35) (Exhibit 4.12-1). There is also a driveway that provides limited access directly to Alma College Road from Highway 17. Each roadway in the project vicinity is briefly described below.

EXISTING ROADWAY NETWORK

Highway 17

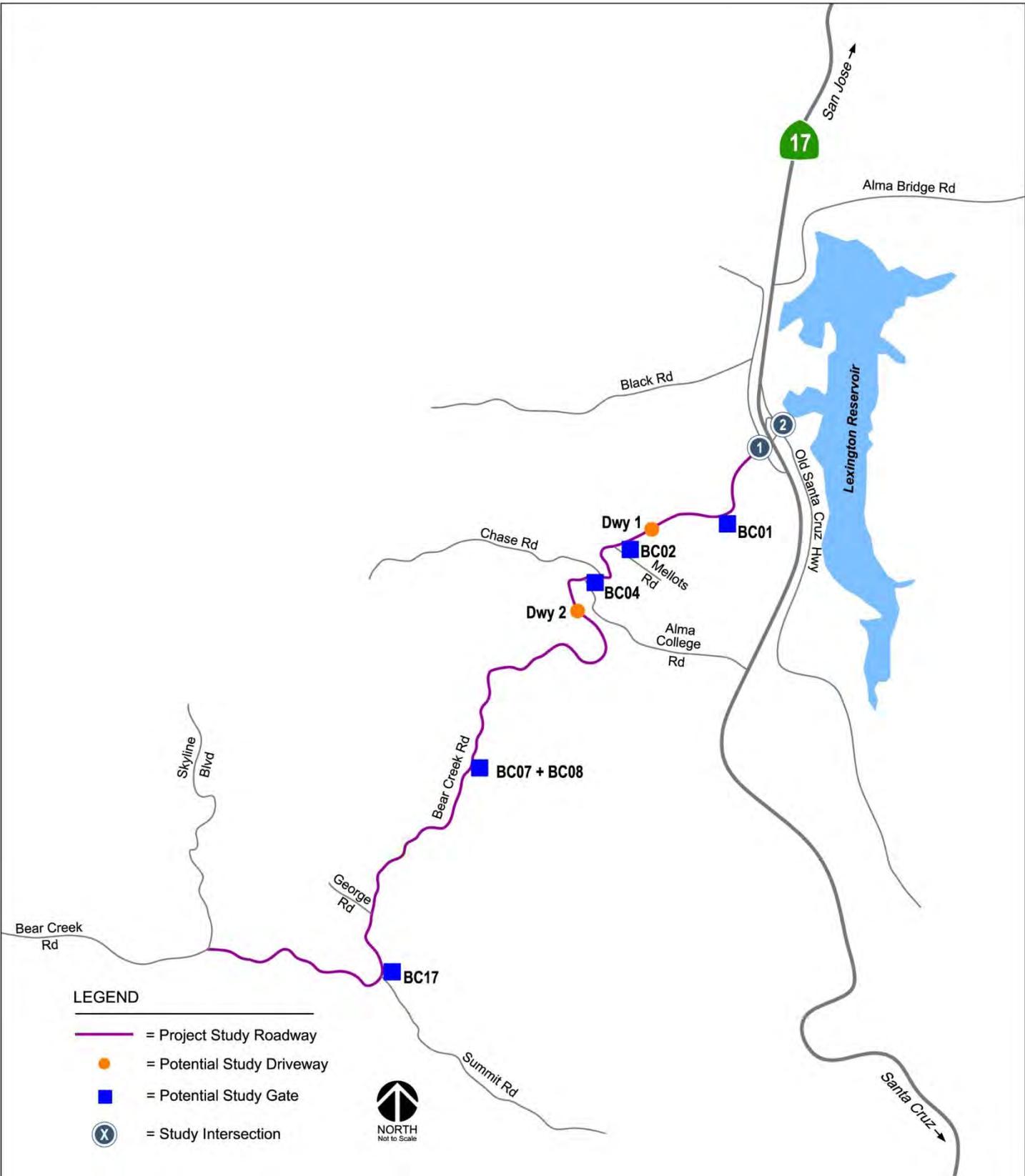
Highway 17 originates at Highway 1 in the City of Santa Cruz and extends northeast approximately 12.5 miles to the Santa Cruz County/Santa Clara County line, then continues for approximately 14 miles in Santa Clara County where it continues as Interstate 880 (I-880) from the junction of I-280 and I-880. Highway 17 is a four-lane freeway that transitions to a six-lane urban freeway before continuing as I-880. The posted speed limit in the project vicinity is 50 miles per hour (mph).

Bear Creek Road

Bear Creek Road is a paved two-lane county road through the Santa Cruz Mountains and provides freeway access from Highway 17. It carries a relatively modest amount of commute traffic during the weekdays to and from mountain residences, and recreational traffic on weekends. Sections of Bear Creek Road are winding and steep. Passing is not allowed in the project vicinity. There is no posted speed limit in the project vicinity.

Mellots Road

Mellots Road is an unpaved private road/driveway providing access to Bear Creek Stables within the Preserve from Bear Creek Road. No through traffic is permitted on Mellots Road.



LEGEND

- = Project Study Roadway
- = Potential Study Driveway
- = Potential Study Gate
- X = Study Intersection



Source: Hexagon Transportation Consultants, Inc. 2015

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Exhibit 4.12-1

Traffic Study Area



Alma College Road

Alma College Road travels generally east-west through the Preserve from Bear Creek Road to Highway 17. The entrance at Bear Creek Road and Highway 17 are currently gated. Alma College Road was once paved, but is in a highly degraded condition, and provides access to the former Alma College site within the Preserve. The Alma College entrance off of Bear Creek Road would be relocated to a safer location to provide ingress/egress to the new parking area, and the existing Alma College Road would be closed/modified to pedestrian traffic only as part of the rehabilitation of the former Alma College site.

State Route 35/Summit Road

A portion of State Route (SR) 35, also known as Summit Road, transects the southern portion of the Preserve. This paved two-lane road begins at Bear Creek Road and ends at Highway 17. SR 35 generally follows the Santa Clara/Santa Cruz county line and divides the portion of the Preserve within Santa Clara County and the southern parcel within Santa Cruz County. Sections of SR 35/Summit Road are winding and steep. The speed limit is 30 mph in the project vicinity, although, for safety, many areas require speeds less than 30 mph.

Maintenance Roads within the Preserve

There are several internal patrol roads within the Preserve that are used for maintenance purposes and would not be open to the public. These roads include Chase Road and George Road, which both provide maintenance access to the Preserve west of Bear Creek Road.

STUDY INTERSECTIONS

Highway 17 Southbound Ramp/Bear Creek Road

The intersection of the Highway 17 southbound ramp and Bear Creek Road is an unsignalized (no traffic signal) intersection controlled by a four-way stop. The eastbound Bear Creek Road approach consists of one through lane and one dedicated right-turn lane; the westbound Bear Creek Road intersection consists of one through lane. The Highway 17 southbound exit ramp at Bear Creek Road is also controlled by a stop sign and consists of one dedicated right-turn lane and one lane for through and left-turn movements.

Highway 17 Northbound Ramp/Bear Creek Road

The intersection of the Highway 17 northbound ramp and Bear Creek Road is an unsignalized T-intersection controlled by a two-way stop. Bear Creek Road terminates at the intersection with Highway 17 and consists of one dedicated left-turn lane and one dedicated right-turn lane.

ROADWAY CAPACITY AND LEVEL OF SERVICE

Existing Roadway Segment Levels of Service and Design Speed

Hexagon conducted traffic and speed counts on Bear Creek Road south of Camel Hill Vineyards driveway and south of Alma College Road. Traffic counts were conducted for 24 hours on February 26, 2015 (a typical weekday) and on June 20, 2015 (a Saturday). The total volume on the weekday was approximately 3,590 vehicles west of Camel Hill Vineyards driveway and about 3,410 vehicles south of Alma College Road (Exhibit 4.12-1). The highest volume occurred during the typical morning commute hour (7:00 a.m. to 8:00 a.m.) when there were 326 vehicles counted in the peak direction (eastbound) south of Camel Hill Vineyards driveway. There were 240 vehicles in the peak direction (southbound) during the late afternoon peak hour (5:00 p.m. to 6:00 p.m.) at the same location.

The total volume on June 20, 2015 (Saturday) was about 3,190 vehicles south of Camel Hill Vineyards driveway and about 3,070 vehicles south of Alma College Road. The total volumes on Saturday are about 10 percent lower compared to the traffic on a typical weekday. The highest volume on Saturday occurred during the late afternoon between 5:00 p.m. and 6:00 p.m. when there were 147 southbound vehicles counted south of Camel Hill Vineyards driveway heading towards Santa Cruz.

According to the *2010 Highway Capacity Manual (HCM)*, the capacity of a two-lane highway is a maximum of 3,200 vehicles per hour. That amount should be adjusted for terrain, and the HCM suggests that the capacity should be reduced by one-third in mountainous areas. Thus, the maximum capacity of Bear Creek Road is approximately 2,100 vehicles per hour, or 1,050 vehicles per hour per lane. The existing a.m. peak hour volume for the peak direction is 326 vehicles and the existing Saturday peak hour volume for the peak direction is 147 vehicles; therefore, Bear Creek Road is currently operating well below maximum capacity.

Hexagon also measured speeds during the traffic volume counts performed for Bear Creek Road. Speeds were higher in the morning commute period for traffic going toward Highway 17, which is downhill near Alma College Road. On a 24-hour basis the 85th percentile speed at this location was 36 miles per hour (mph). However, between 6:00 a.m. and 7:00 a.m. the 85th percentile speed was 39 mph, and between 7:00 a.m. and 8:00 a.m. the 85th percentile speed was 38 mph. Nevertheless, for all of these cases, the proper design speed is 40 mph based on the standards specified in the *Manual on Uniform Traffic Control Devices*.

Existing Intersection Levels of Service

Traffic operations have been quantified through the determination of level of service (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade “A” through “F” is assigned to an intersection or roadway segment, representing progressively worsening traffic operations (Table 4.12-1).

Level of Service	Unsignalized Intersection	Roadway (Daily)
“A”	Little or no delay Ave Delay \leq 10 sec/veh	Completely free flow.
“B”	Short traffic delays Delay $>$ 10 sec/veh and \leq 15 sec/veh	Free flow, presence of other vehicles noticeable.
“C”	Average traffic delays Delay $>$ 15 sec/veh and \leq 25 sec/veh	Ability to maneuver and select operating speed affected.
“D”	Long traffic delays Delay $>$ 25 sec/veh and \leq 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
“E”	Very long traffic delays, failure, extreme congestion Delay $>$ 35 sec/veh and \leq 50 sec/veh	At or near capacity, flow quite unstable.
“F”	Intersection often blocked by external causes Delay $>$ 50 sec/veh	Forced flow, breakdown.

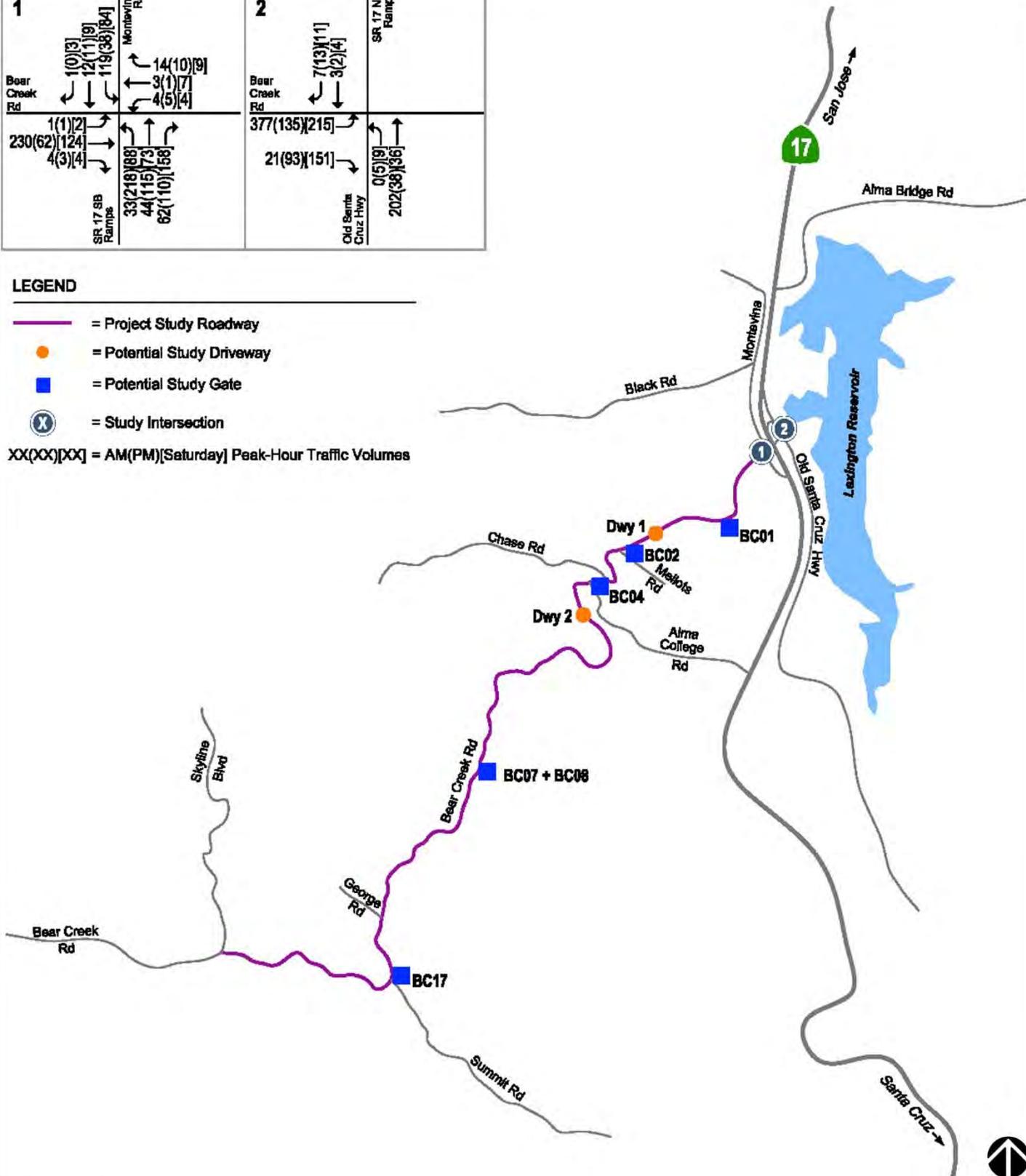
Source: TRB 2010

Traffic conditions at two unsignalized intersections at the Bear Creek Road/Highway 17 interchange were also analyzed for the weekday a.m. and p.m. peak hours as well as for the Saturday peak hour (Table 4.12-2). The a.m. peak hour of adjacent roadway traffic is generally between 7:00 a.m. and 9:00 a.m., and the p.m. peak hour of adjacent roadway traffic is typically between 4:00 p.m. and 6:00 p.m. It is during these periods on an average weekday that the most congested traffic conditions occur. Saturday peak hour was also analyzed because that is expected to be the peak visitation time for the Preserve. Existing weekday a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak hour traffic volumes and Saturday peak hour traffic volumes (1:00 p.m. to 2:00 p.m.) were obtained from new manual turning-movement counts (Exhibit 4.12-2).

1	2

LEGEND

- = Project Study Roadway
 - = Potential Study Driveway
 - = Potential Study Gate
 - = Study Intersection
- XX(XX)[XX] = AM(PM)[Saturday] Peak-Hour Traffic Volumes



Source: Hexagon Transportation Consultants, Inc. 2016



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Exhibit 4.12-2

Existing Traffic Volumes



The results of the intersection LOS analysis show that the intersection of the Highway 17 southbound ramps and Bear Creek Road is operating at LOS A, the best possible service level. The intersection of the Highway 17 northbound ramps and Bear Creek Road is operating at LOS B during the weekday p.m. peak hour and the Saturday peak hour. However, during the weekday a.m. peak hour, the calculation shows that northbound traffic is experiencing long delays at the ramp meter and is operating at LOS F.

Table 4.12-2 Existing Intersection LOS

Intersection	Peak Hour	Average Delay (Seconds)	LOS
Highway 17 Southbound Ramps/Bear Creek Road (All-Way Stop)	AM	9.7	A
	PM	10.5	B
	Saturday	9.0	A
Highway 17 Northbound Ramps/Bear Creek Road (Two-way Stop)	AM	53.3	F
	PM	11.6	B
	Saturday	13.7	B

TRANSIT AND BICYCLE FACILITIES

Santa Clara Valley Transportation Authority (VTA) provides public transit service to Santa Clara County including the communities of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga and Sunnyvale. The Santa Clara VTA provides bus, light rail, and paratransit services. There are no transit facilities in the vicinity of the Preserve; however, the Highway 17 Expressway route provides regional bus service along Highway 17 (Santa Clara VTA 2015). There are no designated bicycle lanes along Bear Creek Road or Highway 17 in the vicinity of the Preserve; however, a multi-use trail parallels the east side of Highway 17, connecting to trails within Lexington Reservoir County Park, including the Bay Area Ridge Trail and Los Gatos Creek Trail, which are regional multi-use trails open to bicycles.

4.12.2 Regulatory Setting

FEDERAL

There are no federal regulations that are relevant to the project.

STATE

California Department of Transportation

Guide for the Preparation of Traffic Impact Studies

The California Department of Transportation (Caltrans) *Guide for the Preparation of Traffic Impact Studies* provides guidance on the evaluation of traffic impacts to State highway facilities. The document outlines when a traffic impact study is needed and what should be included in the scope of the study (Caltrans 2002).

LOCAL

Santa Clara County General Plan

The *Santa Clara County General Plan* (Book B, Part 3 *Rural Unincorporated Area Issues & Policies*) includes the following strategy and policies that are applicable to implementation of the Preserve Plan:

1. Strategy #4 – Assure the Maintenance and Safety of Rural Roads

Rural roads are generally not designed to sustain the same levels of usage as most urban roads. Nevertheless, rural roads should be designed and built to standards that will assure driving safety and roadway adequacy. Roads should be designed with an understanding of the existing and planned development in the area served by those roads.

a. Minimizing Extraordinary Impacts and Costs

The roadway planning and design process should also seek opportunities to minimize both environmental impacts and expenditures to the County. Analysis of some road conditions in the rural area may indicate that road construction will incur extraordinary environmental impacts and/or costs to County government. In such cases, consideration should be given to what is to be gained from proceeding with those improvements compared with the environmental and fiscal costs.

b. Policies and Implementation

R-TR 9: Rural roads should be designed and built to standards that will assure driving safety and provide access for emergency vehicles.

R-TR 10: As existing substandard County roadways are improved to current county standards, environmental and economic constraints should be taken into consideration.

R-TR 11: New development which would significantly impact private or public roads should be allowed only when safety hazards and roadway deterioration will be mitigated to a less than significant level.

Santa Clara Valley Transportation Authority Congestion Management Plan

The Santa Clara (VTA) was designated as the County's congestion management agency in 1995. The Santa Clara VTA prepared a Congestion Management Plan (CMP) for the County that was adopted in 2013. The CMP presents guidelines for preparing transportation impact analyses (Santa Clara VTA 2013).

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goals and objectives of the Preserve Plan related to traffic and transportation would be implemented if the Preserve Plan is approved:

Goal PU1: Allow general public access and enhance recreational opportunities in the Preserve

Obj PU-1.3 Introduce a safe pedestrian crossing on Bear Creek Road to connect the Preserve's east and west sides

Goal MO1: Maintain trails and facilities to protect the natural environment and provide for a quality visitor experience

Obj MO-1.1 Maintain a high quality, low maintenance, safe, and enjoyable road and trail system

4.12.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Both of the study intersections are unsignalized. Neither the County of Santa Clara nor Caltrans have standards to evaluate the intersection LOS for unsignalized intersections. Therefore, this analysis includes an operational analysis of vehicle queuing and delay based on principles and methodologies from the 2010 HCM.

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research to develop new CEQA guidelines that address traffic metrics under CEQA (PRC Section 21099). As stated in the Legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." The guidelines have only been provided as a proposal. The timing of when guidelines will be available, their content, and the timing for adoption, is not currently known. Therefore, they do not affect the analysis in this EIR.

Trip Generation

The number of trips associated with the implementation of the Preserve Plan would depend on the amount of recreational use, which would change seasonally, and the number of special events held within the Preserve. Traffic associated with current use of the Preserve is minimal and is regulated through the issuance of day-use permits.

Trips generated by implementation of the Preserve Plan were estimated by using daily visitation counts from similar Preserves including Fremont Older Open Space Preserve and Windy Hill Open Space Preserve. The Fremont Older Open Space Preserve provides a conservative trip generation estimate. This Preserve, located near the City of Cupertino, gets both regular neighbor use as well as weekend/day trip destination use. Fremont Older Open Space Preserve is open to hiking, biking, and equestrian use, as well as dog walking. Trail counts were conducted in 2007 and 2010 for two consecutive weeks in Fremont Older Open Space Preserve. The counts show an average daily visitation of 522 visitors. Because Bear Creek Redwoods Open Space Preserve would not allow dog access and only allow limited through-access biking, visitation is expected to be lower than Fremont Older Open Space Preserve. Another less conservative comparator is the Windy Hill Open Space Preserve, which is close to Woodside and Portola Valley and is open to hiking and equestrian use and limited biking. This preserve is also open to dogs and receives a lot of regular dog walkers. The study shows that Windy Hill Open Space Preserve has an average of 341 visitors per day.

Comparing the size and uses of the Bear Creek Redwoods Open Space Preserve with the two Preserves discussed above, a conservative estimate would be an average of 500 daily visitors on weekends. This translates to 1,000 daily person-trips (i.e., one trip in and one trip out for each visitor). Trips generated on weekdays were assumed to be 40 percent of the weekend trip generation. This percentage is based on a comparison and average between weekday and weekend trip generation for various park land uses in the Institute of Transportation Engineers (ITE) Trip Generation Manual. The park land use categories include City Park, County Park, Regional Park, Beach Park, and National Monument. After applying an assumption of 1.5 persons per vehicle, the Preserve is expected to generate an average of 267 and 667 daily vehicle trips on weekdays and weekends, respectively (Table 4.12-3). The peak hour trips generally would be 15 percent of the average daily traffic, which would result in 40 trips during each of the weekday a.m. and p.m. peak hours and 100 trips during the Saturday peak hour. It is further assumed that there will be roughly a 60 percent/40 percent in/out split in the morning and the reverse in the afternoon on weekdays. On weekends, the in/out split is expected to be nearly equal with 48 percent in and 52 percent out.

The Preserve is also being proposed as a potential special-event venue. Weddings or other special events held at the former Alma College site would accommodate up to 250 guests. In addition, it is anticipated that one to two events per year with 250 people each would be held on weekends at Bear Creek Stables. To provide the most conservative analysis, a worst-case scenario was studied with events hosted at both sites on the same weekend with a total of 500 guests. It is extremely unlikely that simultaneous events would occur; however, a conservative estimate is used to analyze a worst case scenario. It is assumed that the events would have an average vehicle occupancy of two persons per car. Thus, events would generate up to 500 daily trips. In combination with recreational use in the Preserve, the total maximum daily trips would be 1,167 vehicles (Table 4.12-3).

It is assumed that the guests for a wedding or other special event hosted at the former Alma College site would all arrive to the site within 1 hour. The regular Preserve visitors and the Bear Creek Stable users would

arrive or depart throughout the day with 10 percent during any particular hour. It is expected that there would be 342 peak hour trips during weekend peak hour with 294 inbound trips and 48 outbound trips (Table 4.12-3).

Table 4.12-3 Project Trip Generation											
Land Use	AM Peak Hour				PM Peak Hour ^b			Saturday Peak Hour ^e			
	Daily Trips	In ^c	Out ^c	Total	In ^c	Out ^c	Total	Daily Trips	In ^f	Out ^f	Total
Recreation Trips ^a	267	23	17	40	18	22	40	667	48	52	100
Weekend with Special Events ^d								1,167	294	48	342

Notes:

^a Rate based on trips generated by three similar Preserves; Rate of one and half persons per vehicle was assumed to convert visitors to vehicle trips. Weekday trips were assumed to be 40 percent of weekend trips.

^b AM and PM peak hour trips were assumed to each be 15 percent of the daily volumes.

^c Percentage based on ITE Trip Generation Rate for Regional Park (Land Use Type: 417)

^d Weekend trips with special events were assumed including average daily regular visitors to the Preserve, trips generated by the special events with 250 guests at the Bear Creek Stables site and wedding events with 250 guests at the Alma College buildings. Rate of two persons per vehicle was assumed for the special events guests.

^e Weekend peak hour trips were assumed to include 10 percent of the average daily regular visitors, 10% of the Bear Creek Stable users, and 100% of the wedding guests.

^f Percentage based on ITE Trip Generation Rate for Regional Park for Saturday Peak hour were used for regular visitors and Bear Creek Stable users. It is assumed that the 250 guests for wedding will arrive within the peak hour.

Source: Hexagon 2016

Sight Distance Analysis

In addition to analyzing LOS, a sight distance analysis was conducted for potential driveway entrances to the Preserve. Two potential driveway locations were identified that would provide adequate sight distance for a new driveway. The first is located just west of the Camel Hill Vineyard entrance near the proposed Lower Staging Area. The second location, about 800 feet west of Alma College Road, was also considered for a driveway and crosswalk because MROSD owns land on both sides of the road at this location.

A sight distance and ingress/egress analysis was performed for the existing Stables access point at Mellots Road, which would remain the access point for Bear Creek Stables. A sight distance analysis was also conducted for the construction access location where Alma College Road intersects Highway 17. Sight distance analyses were conducted using the Caltrans Highway Design Manual, which is the primary reference used in California to determine sight distance requirements.

Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a project would have a significant impact on traffic and transportation if it would:

- ▲ conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- ▲ conflict with an applicable congestion management program, including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

- ▲ result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- ▲ substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- ▲ result in inadequate emergency access; or
- ▲ conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

ISSUES NOT DISCUSSED FURTHER

The nearest airport is Bonny Doon Village Airport, which is located approximately 10 miles southwest of the Preserve. The nearest major airport is Mineta San Jose International Airport, located 12.5 miles northeast of the Preserve. There are no private airstrips in the vicinity of the Preserve. Therefore, no changes in air traffic patterns would occur as a result of implementation of the Preserve Plan. This issue is not discussed further in this EIR.

Emergency vehicle access would continue to be provided via Mellots Road, the Highway 17 driveway, and would be provided via the two new driveway entrances for the Preserve. Both Mellots Road and the Highway 17 driveway access points can accommodate large emergency vehicles (i.e., fire trucks) and provide adequate turning radius for such vehicles. Mellots Road (Stables driveway) would be widened and repaved as part of the Preserve Plan, to ensure adequate emergency vehicle access to the Bear Creek Stables, and the main interior access road in the western Preserve zone would be improved, and a new bridge installed, to facilitate emergency vehicle access. The two new driveway entrances at the lower parking area and the Alma College parking area would also be designed to accommodate emergency vehicle ingress and egress. Improvements to circulation and roadways would be made within the Preserve, which would further improve emergency access. The Preserve Plan would result in beneficial effects to emergency vehicle access. This issue is not discussed further.

The Preserve Plan does not propose any changes to existing or planned transportation facilities, including existing or planned transit, bicycle, and pedestrian facilities outside of the Preserve. Therefore, the Preserve Plan would not conflict with policies or programs existing regarding public transit, bicycle, or pedestrian facilities. Bicycle and pedestrian safety is discussed below under Impact 4.12-5. This issue is not discussed further in the EIR.

IMPACT ANALYSIS

Impact 4.12-1: Construction-related traffic impacts.

Traffic generated during construction of the Preserve Plan elements would be attributable to delivery trucks and construction workers' trips to and from the site. These trips would be temporary and would occur occasionally over 15-20 years. One of the intersections in the project vicinity is currently operating at LOS F during the a.m. peak commute hour; however, construction trucks would access the Preserve directly from Highway 17 and would not affect traffic at this intersection. All other roadways and intersections affected by construction traffic are operating at acceptable LOS. This impact would be **less than significant**.

During construction of the Preserve Plan elements, there would be a temporary increase in construction-related traffic from deliveries of materials, import of fill material, and construction workers traveling to and from the Preserve. Construction would include three general phases (see Section 3.5.3, "Project Construction," for a detailed description of the project construction phasing). The level of construction activity and intensity would vary over the 15-to-20-year construction period and would start and stop at various intervals. However, the maximum number of workers commuting to the Preserve at any given time

would be approximately 30, which would be infrequent and of short duration. This level of traffic increase due to construction workers is similar to the peak-hour traffic generated by the operation of the Preserve which is discussed in Impact 4.12-2, 4.12-3, and 4.12-4 and would result in similar impacts (less than significant). Additionally, approximately 15 truck trips per day would access the site for materials delivered to the Preserve. The increase in construction worker commute trips and deliveries would be in addition to ongoing daily trips generated by recreational users and MROSD employees.

All construction truck traffic would access the site from the entrance directly off of Highway 17. Therefore, all vehicle trips associated with construction would use Highway 17. Construction truck trips would disperse from Highway 17 depending upon the direction the vehicle is traveling. Therefore, increases in construction traffic on other area roadways would be less than the increase on Highway 17. The addition of up to 15 vehicle trips per day would not cause Highway 17 to operate at an unacceptable LOS. Therefore, the addition of construction traffic would not further degrade the traffic conditions at an intersection that is currently operating at an unacceptable LOS. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.12-2: Existing plus project roadway level of service impacts.

With implementation of the Preserve Plan, peak hour trips would be added to Bear Creek Road; however, it would continue to operate within its capacity. Therefore, this impact would be **less than significant**.

As discussed above, traffic counts conducted for Bear Creek Road south of Camel Hill Vineyards driveway and south of Alma College Road indicated the highest volume occurred during the typical a.m. commute hour (7:00 a.m. to 8:00 a.m.) when there were 326 vehicles counted in the peak direction (eastbound) south of Camel Hill Vineyards driveway. The highest volume on Saturday occurred during the late afternoon between 5:00 p.m. and 6:00 p.m. when there were 147 south bound vehicles counted south of Camel Hill Vineyards driveway heading towards Santa Cruz.

According to the 2010 HCM, the capacity of a two-lane highway when adjusted for terrain is approximately 2,100 vehicles per hour, or 1,050 vehicles per hour per lane. The existing a.m. peak hour volume for the peak direction is 326 vehicles and the existing Saturday peak hour volume for the peak direction is 147 vehicles; therefore, Bear Creek Road is currently operating well below maximum capacity.

The weekday peak hour for the Preserve trip generation would be in the late afternoon (i.e., between 5:00 – 6:00 p.m.). During this time period, the weekday traffic volume on Bear Creek Road is 197 vehicles westbound and 67 vehicles eastbound. Based on the above trip generation estimates, implementation of the Preserve Plan is expected to add 18 westbound vehicles and 22 eastbound vehicles during the early afternoon time period. Considering that the total capacity of a lane is 1,050 vehicles as described previously, Bear Creek Road would still be operating well below its capacity after the completion of the project.

The weekend peak hour for the Preserve would be in the late afternoon (i.e., between 5:00 - 6:00 p.m.). The traffic volume on Bear Creek Road during this time period is 114 vehicles eastbound and 147 vehicles westbound. Under the worst-case scenario with two special events at the same time, the traffic generated by the Preserve would add 294 westbound vehicles and 48 eastbound vehicles during the peak hour. The total traffic on Bear Creek Road could reach 162 vehicles eastbound and 441 vehicles westbound. The peak direction volume would be less than 50 percent of the total capacity of the road. Therefore, Bear Creek Road would still be operating well below its capacity even under the worst-case scenario with the project. It should also be noted that the proposed trailer storage area between Alma College and Highway 17 would be accessed via the highway; however, this would likely generate no more than one vehicle trip per day. As discussed above under Impact 4.12-1, up to 15 construction vehicle trips would not substantially affect the Highway 17 LOS; likewise, the addition of one trip per day accessing the trailer storage area would not substantially affect the LOS of Highway 17. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.12-3: Existing plus project intersection level of service impacts.

Under existing conditions, the Highway 17 northbound ramps/Bear Creek Road intersection is operating at LOS F during the a.m. peak hour. Implementation of the proposed Preserve Plan would generate minor peak hour trips in this direction, which would add several seconds of additional time to navigate through this intersection during a.m. peak hour traffic. All other intersections would operate acceptably. This impact would be **less than significant**.

It is expected that operation of the Preserve could result in a maximum of 40 peak hour trips during weekday a.m. and p.m. peak hour and 342 peak hour trips during the weekend peak hour (Table 4.12-3). The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The peak hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern. Exhibit 4.12-3 shows the project trip assignment at the study intersections. The project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (Exhibit 4.12-4).

Table 4.12-4 Existing Plus Project Intersection LOS

Intersection	Existing			Existing Plus Project		
	Peak Hour	Average Delay (Seconds)	LOS	Peak Hour	Average Delay (Seconds)	LOS
Highway 17 Southbound Ramps/ Bear Creek Road (All-Way Stop)	AM	9.7	A	AM	10.0	B
	PM	10.5	B	PM	11.0	B
	Saturday	9.0	A	Saturday	14.5	B
Highway 17 Northbound Ramps/ Bear Creek Road (Two-Way Stop)	AM	53.3	F	AM	61.8	F
	PM	11.6	B	PM	11.8	B
	Saturday	13.7	B	Saturday	14.9	B

The results of the intersection LOS analysis under existing plus project conditions show that the intersection of the Highway 17 southbound ramps and Bear Creek Road would operate at an acceptable LOS during the weekday a.m. and p.m. peak hours and the Saturday peak hour (see Table 4.12-4). During weekday p.m. peak hour and Saturday peak hour, the intersection of the Highway 17 northbound ramps/Bear Creek Road would operate at LOS B under existing plus project conditions. During the weekday a.m. peak hour this intersection is currently operating at LOS F. This is because the metering light on the ramp slows the rate at which vehicles can access the freeway from the ramp. The project would increase the delay for northbound traffic at this intersection by 8.5 seconds, meaning drivers would need to wait this additional time to access the freeway. While an inconvenience, this is not a substantial physical effect. In addition, there is sufficient area on Old Santa Cruz Highway for the queuing of vehicles waiting at the ramp meter, so the additional 8.5 seconds of delay would not result in safety issues.

Although the Highway 17 northbound Ramps/Bear Creek Road intersection is currently operating at an unacceptable LOS during the a.m. peak hour, operation of the Preserve would add very few trips to this intersection during the a.m. peak hour. This would be a **less-than-significant** impact.

Mitigation Measures

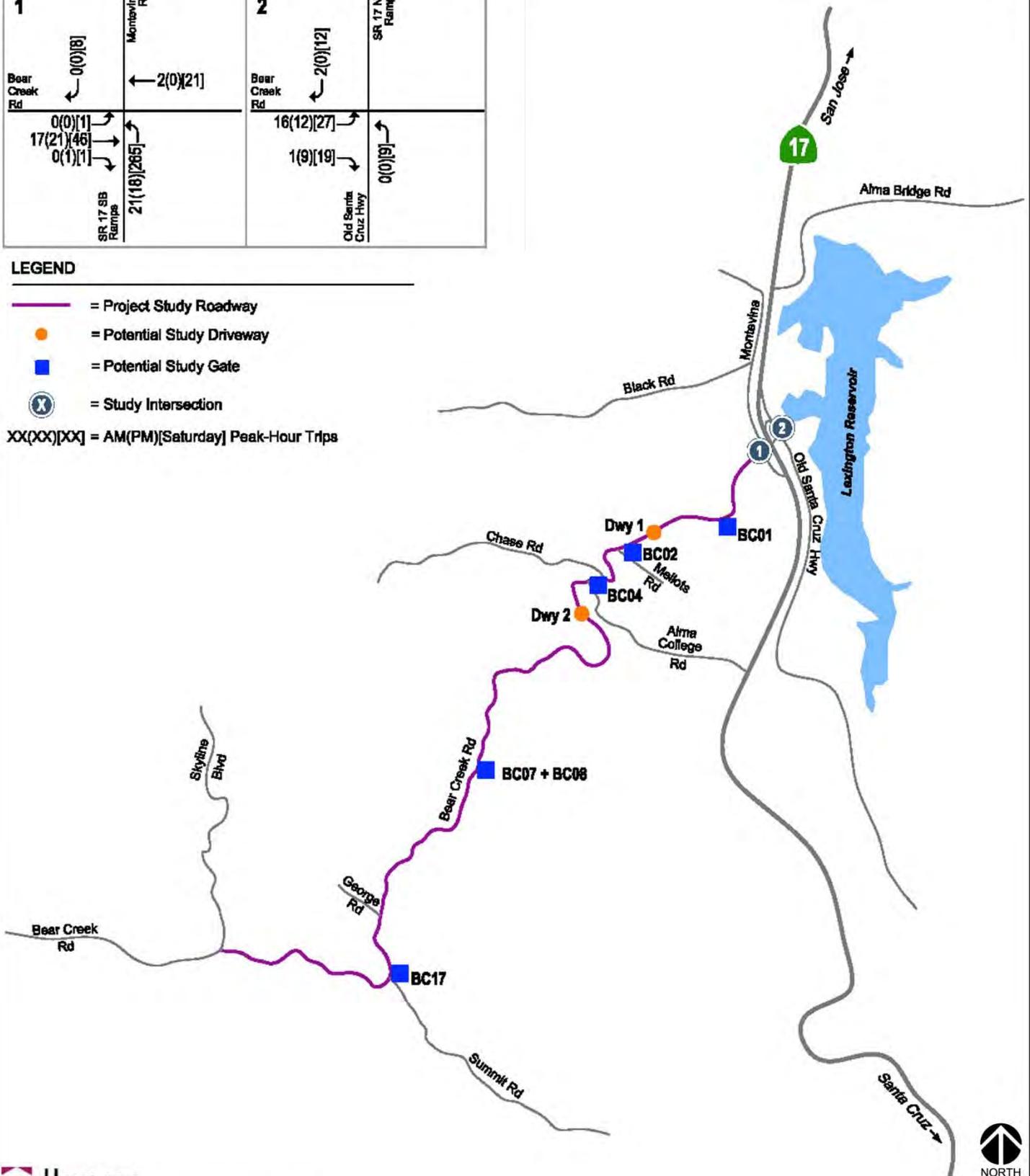
No mitigation measures are necessary.

1	Montavina Rd	2	SR 17 NB Ramps
Bear Creek Rd 0(0)[8]	← 2(0)[21]	Bear Creek Rd 2(0)[12]	
0(0)[1] 17(21)[46] 0(1)[1]	↔ 21(18)[265]	16(12)[27] 1(9)[19]	↔ 0(0)[9]
SR 17 SB Ramps		Old Santa Cruz Hwy	

LEGEND

- = Project Study Roadway
- = Potential Study Driveway
- = Potential Study Gate
- X = Study Intersection

XX(XX)[XX] = AM(PM)[Saturday] Peak-Hour Trips



Source: Hexagon Transportation Consultants, Inc. 2016



X15010027 01 006

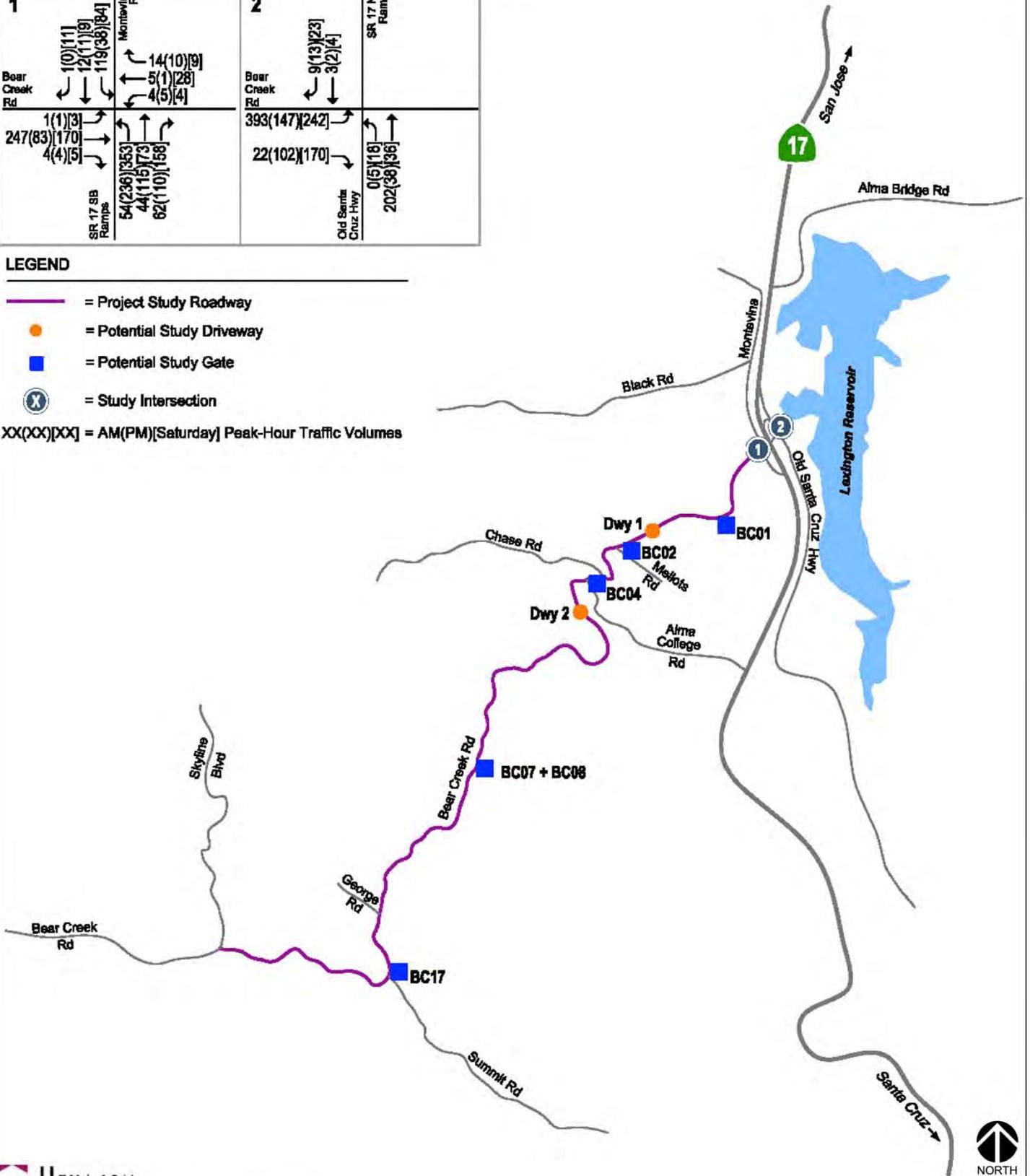


1	2

LEGEND

- = Project Study Roadway
- = Potential Study Driveway
- = Potential Study Gate
- = Study Intersection

XX(XX)[XX] = AM(PM)[Saturday] Peak-Hour Traffic Volumes



Source: Hexagon Transportation Consultants, Inc. 2016



NORTH
Not to Scale

X15010027 01 007

Exhibit 4.12-4

Traffic Volumes: Existing Plus Project



Impact 4.12-4: Future plus project intersection level of service impacts (Cumulative).

Under the cumulative plus project scenario, the Highway 17 northbound ramps/Bear Creek Road intersection would continue to operate at LOS F during the a.m. peak period. The small amount of traffic generated by the proposed Preserve Plan would result in an insignificant contribution to the overall delays experienced at this intersection under cumulative conditions. All other intersections would operate acceptably. This impact would be **less than significant**.

Future plus project traffic volumes were estimated by applying a general growth factor of 1 percent per year for 15 years to the existing peak-hour volumes and adding the project trips to correspond to the buildout of the Preserve Plan (Exhibit 4.12-5). The results show that both study intersections would operate at acceptable LOS during the weekday p.m. peak hour and the weekend peak hour (Table 4.12-5). During weekday p.m. peak hour and Saturday peak hour, the intersection of the Highway 17 northbound ramps/Bear Creek Road would operate at LOS B under future plus project conditions. During the weekday a.m. peak hour, the Highway 17 northbound ramps/Bear Creek Road would operate at LOS F due to the metering lights on the ramp.

Table 4.12-5 Future Plus Project Intersection LOS			
Intersection	Peak Hour	Average Delay (Seconds)	LOS
Highway 17 Southbound Ramps/Bear Creek Road	AM	10.8	B
	PM	12.4	B
	Saturday	16.2	B
Highway 17 Northbound Ramps/Bear Creek Road	AM	166.6	F
	PM	12.5	B
	Saturday	16.7	C

The Highway 17 northbound Ramps/Bear Creek Road intersection is expected to continue operating at an unacceptable LOS during the a.m. peak hour in the future. The small amount of traffic generated by the proposed Preserve Plan would result in an insignificant contribution to the overall delays experienced at this intersection under cumulative conditions. Also, while an inconvenience, drivers waiting longer in a vehicle to access the freeway does not constitute a substantial physical effect. In addition, there is sufficient area on Old Santa Cruz Highway for the queuing of vehicles waiting at the ramp meter, so the project’s contribution to delay would not result in safety issues. This would be a **less-than-significant** cumulative impact.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.12-5: Safety impacts.

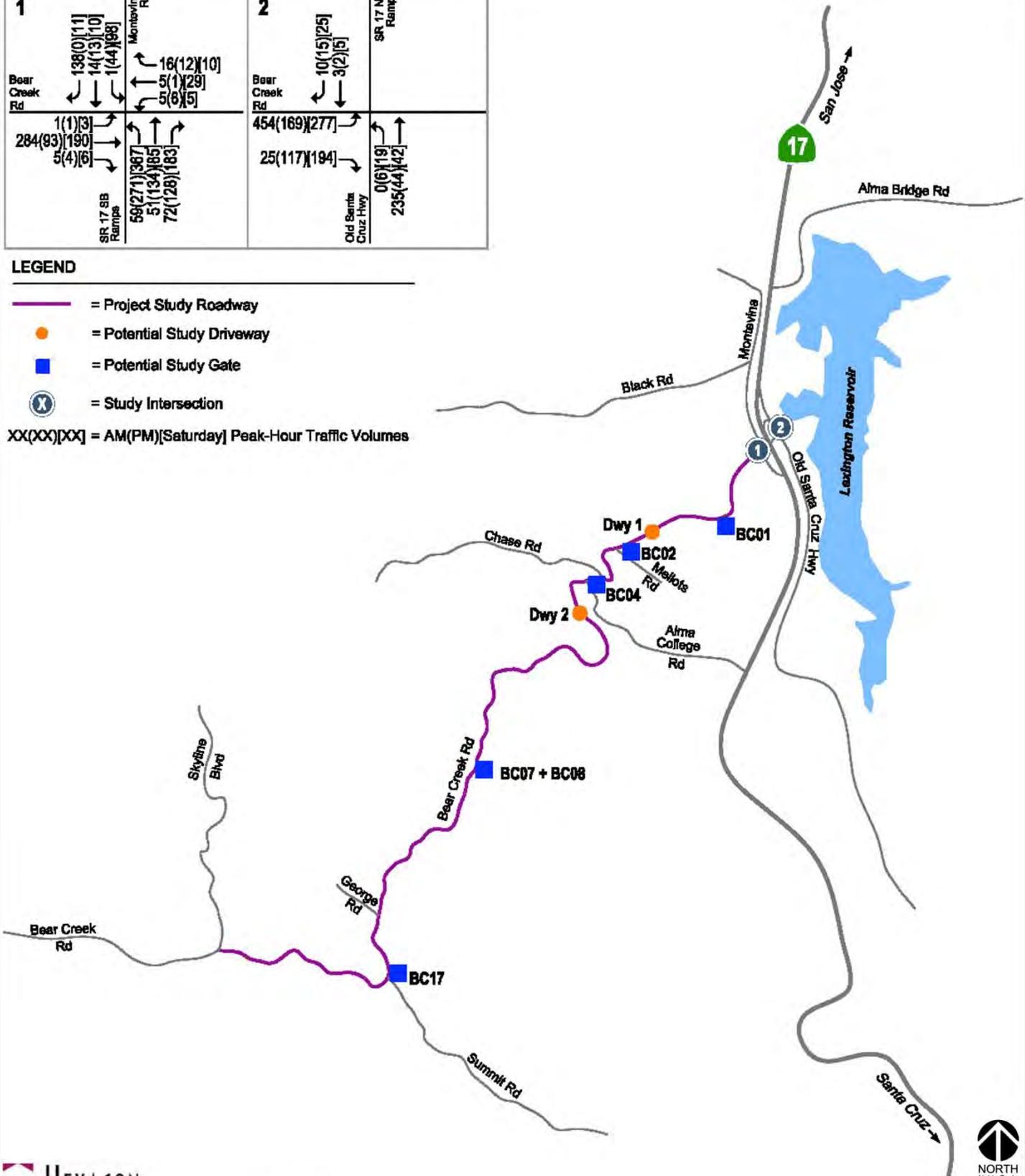
Because Bear Creek Road has many grades and curves, sight distance is limited in several locations, and locating the Preserve entrance off of Bear Creek Road could result in a hazard due to a design feature. However, a new entrance driveway would be constructed in accordance with the *Caltrans Highway Design Manual*. Construction of a driveway in accordance with applicable design standards for adequate lines of sight would ensure the entrance to the Preserve would not substantially increase hazards due to a design feature. This impact would be **less than significant**.

Because Bear Creek Road has many grades and curves, sight distance is limited along much of the road’s length. However, two locations were identified that would provide adequate sight distance for new driveway entrances (Driveways 1 and 2, Exhibit 4.12-1). The first is located approximately 0.4 mile from Highway 17, directly across from an existing driveway, and would provide access to the proposed lower parking area.

1	2

LEGEND

- = Project Study Roadway
 - = Potential Study Driveway
 - = Potential Study Gate
 - = Study Intersection
- XX(XX)[XX] = AM(PM)[Saturday] Peak-Hour Traffic Volumes



Source: Hexagon Transportation Consultants, Inc. 2016

X15010027 01 008



NORTH
Not to Scale

Exhibit 4.12-5

Traffic Volumes: Future Plus Project



The second location, approximately 800 feet south of Alma College Road, also provides adequate sight distance and is the proposed location for both a new driveway and pedestrian crosswalk. The new driveway would replace Alma College Road, which does not currently provide adequate sight distance, as the primary Preserve driveway entrance to a new parking area and trailhead at the former Alma College site. In addition, an at-grade pedestrian crossing (crosswalk) would be formalized at this location to allow visitors to safely cross Bear Creek Road and access the western portion of the Preserve. The driveway and crosswalk are located at the historic entrance to the site along a relatively straight section of roadway.

The most important factor in adequate and safe driveway operations is sight distance. In California, the *Caltrans Highway Design Manual* is the primary reference used to determine sight distance requirements. At Driveway 1, the entrance to the proposed lower parking area, sight distance would be more than 450 feet for all applicable turning movements (e.g., left turn in, left turn out, right turn out) with the proposed removal of up to two large oak trees. This area will also be maintained to ensure it remains free of vegetation. There are no other structures currently obstructing line of sight at this location.

At the existing gate at Alma College Road, sight distance to the south is inadequate, so a new driveway location would be needed. Construction of a new driveway south of Alma College Road would achieve a sight distance of about 400 feet to the north and a sight distance of more than 400 feet to the south with the removal of trees and vegetation. This area will also be maintained to ensure it remains free of vegetation.

The actual and required stopping sight distances for the potential driveways are shown in Table 4.12-6. The required sight distances are based on the *Caltrans Highway Design Manual*, Table 201.1. Section 201.3 of the *Caltrans Highway Design Manual* specifies a 20 percent increase in stopping sight distance on a sustained downgrade of more than 3 percent. According to this table, driveways at both of the locations discussed above would provide adequate sight distance.

Location	Southbound Design Speed	Southbound Road Grade	Southbound Required Sight Distance	Southbound Actual Sight Distance	Northbound Design Speed	Northbound Road Grade	Northbound Required Sight Distance	Northbound Actual Sight Distance
Driveway 1 (South of Camel Hill Vineyard)	40 mph	Insignificant	300 feet	>450 feet	30 mph	Insignificant	200 feet	>450 feet
Driveway 2 (South of Alma College Road)	30 mph	Insignificant	200 feet	400 feet	40 mph	4%	360 feet	>400 feet

Source: Hexagon 2016

MROSD owns land on both sides of the road near Alma College Road, but only owns land on one side of the road near Camel Hill Vineyard. Therefore, a crosswalk would only be appropriate at the Driveway 2. At this location, sight distance is adequate with the tree removal specified above, and there are flat landing areas on both sides of the road that could be used for the crossing.

Because some visitors coming to the Preserve would be unfamiliar with its location, adequate signage would be provided in advance of the Preserve entrance. Signage would be based on the *2014 California Manual of Uniform Traffic Control Devices (CAMUTCD)*. Though no signage is specifically required by the CAMUTCD at this location, MROSD would install a sign at least 200 feet from the entrance in each direction, with “Bear Creek Redwoods Open Space Preserve” or similar text. The signs would be located so they would not obscure sight lines from the driveway.

In addition to the driveway locations analyzed above, the sight distance and ingress/egress analysis was performed for two additional existing driveway locations at Mellots Road (Bear Creek Stables access

driveway) and where Alma College Road intersects Highway 17. The actual and required stopping sight distances based on the standards specified in the Caltrans *Highway Design Manual*, table 201.1. for the driveway at Mellots Road are shown in Table 4.12-7.

Location	Southbound - Toward Santa Cruz				Northbound - Toward Highway 17			
	Design Speed	Road Grade	Required Sight Distance	Actual Sight Distance	Design Speed	Road Grade	Required Sight Distance	Actual Sight Distance
Mellots Road Driveway	45 mph	Insignificant	360 feet	280 feet	30 mph	Insignificant	200 feet	200 feet

Source: Hexagon 2016

At the Mellots Road (Bear Creek Stables) driveway, the sight distance for southbound traffic is around 280 feet, which does not meet the required sight distance at 360 feet. Sight distance is limited by a bridge abutment and by a vertical curve (hill) on Bear Creek Road. Sight distance cannot be increased. This sight distance limitation affects the ability to turn left out of the Stables driveway (Mellots Road). Because the sight distance is inadequate and cannot reasonably be increased, a sign would be installed to prohibit left turns out of the driveway. Vehicles would be able to turn right and then make a u-turn in the Preserve parking area that would be constructed approximately 500 feet from this location. The sight distance for eastbound traffic is 200 feet, which meets the required sight distance. Thus, adequate sight distance exists for left turns from Bear Creek Road into the stables driveway and right turns out from the stables driveway.

At the Alma College Road driveway to SR 17, the sight distance for southbound traffic is at least 2,400 feet. The posted speed limit for southbound traffic on SR 17 in the area close to the Alma College Road driveway is 50 mph. Even assuming a design speed of 70 mph, the required sight distance is 750 feet based on Caltrans *Highway Design Manual*, table 201.1. Therefore, the driveway at Alma College Road provides adequate sight distance.

As discussed above under Impact 4.12-2, additional auto traffic generated by the proposed Preserve Plan would be well below the capacity of local roadways. The small amount of additional traffic associated with the project would not create unsafe conditions for bicyclists on these roads. Furthermore, opening a through access multi-use trail for bicyclists in the Preserve will likely add a small number of bicyclists to the local roadways. These bicyclists would be required to adhere to existing traffic safety laws. The proposed Preserve Plan would not increase hazards for bicyclists.

MROSD will coordinate with the County of Santa Clara traffic engineer to obtain the necessary permitting approval to formalize a crosswalk at the Driveway 2/Alma College Parking Area location. If recommended by the County of Santa Clara, MROSD would install additional signage (e.g. "Crosswalk Ahead" signs) and/or other safety improvements such as flashing lights in advance of the crosswalk, to improve the visibility of a crosswalk to motorists and improve safety for pedestrians, equestrians, and bicyclists crossing to the western portion of the Preserve.

Construction of the new entrance driveways and pedestrian crossing in accordance with applicable design standards for adequate lines of sight and installation of signage would ensure that these improvements to the Preserve would not substantially increase hazards due to a design feature. In addition, the County of Santa Clara would review and approve the design of the intersection of proposed driveways with County roadways to ensure the access points meet County standards. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

4.13 UTILITIES AND SERVICE SYSTEMS

This section describes the existing utilities and service systems that serve the project site and evaluates the proposed project's potential effect on these utilities and services. As explained further below, this section does not focus on wastewater service because project-generated wastewater would be treated with a proposed onsite septic system and would not require connection to a municipal wastewater conveyance or treatment system. For a description of hydrology and water quality at the project site, please refer to Section 4.8, "Hydrology and Water Quality," of this EIR.

Multiple comments from the County and the public pertaining to utilities and service systems were received during public review of the Notice of Preparation for the proposed project. The comments requested evaluation of water supply and improvements, wastewater and septic tanks, and composting toilets. See Section 4.5 "Geology and Soils" for more information regarding septic tanks.

4.13.1 Environmental Setting

WATER SUPPLY

Aldercroft Creek

Raw (non-potable) water has historically been served to Bear Creek Stables by a surface water diversion on a spring off Aldercroft Creek (Exhibit 4.13-1). Flows are conveyed through approximately 7,000 feet of pipe leading to a transfer tank and several storage tanks. Potable drinking water is imported for the residence located at Bear Creek Stables. No other water supply sources are currently utilized at the project site. As described in Section 4.8, "Hydrology and Water Quality," several seasonal and perennial streams, including Aldercroft Creek, drain through the Preserve into Lexington Reservoir, which leads to Los Gatos Creek and eventually the San Francisco Bay.

Bear Creek Stables currently has 72 horses and a permanent residence. Based on a water-resources inventory of Bear Creek Preserve provided by Balance Hydrologics, Inc. (June 2015), the estimated current water demand at Bear Creek Stables ranges between 1,500 to 7,200 gallons per day (gpd) for dry to normal conditions. For fire suppression, a 3,000 gallon tank currently captures overflow from the Aldercroft diversion (Balance Hydrologics 2015a).

Due to uncertainties related to the continued use of the Aldercroft Creek supply source, the following two additional water supply sources are evaluated in this Draft EIR:

San Jose Water Company Municipal Water Service

San Jose Water Company (SJWC) maintains a 6-inch water service line located adjacent to the Preserve in Bear Creek Road. SJWC provided a will-serve letter to MROSD on May 6, 2016 for the provision of 8,000 gpd. As noted in the will-serve letter, the Preserve is currently out of SJWC service boundary, but the letter indicates that service will be provided with an inter-agency agreement and filing with the Public Utilities Commission (PUC). According to the SJWC 2010 Urban Water Management Plan (UWMP), SJWC's supplies have grown from a single well in San Jose in 1866 that served 400 customers to over one hundred groundwater production wells, imported treated supplies from the Santa Clara Valley Water District (SCVWD), and local surface water from the Santa Cruz Mountains. Combined, these supply sources currently serve over 222,000 service connections. SJWC's 2010 UWMP includes the requirements of the Water Conservation Bill of 2009 (which includes SBX7-7) that requires a statewide 20% reduction in urban per capita water use by 2020. SJWC completed the required steps to set the baseline water use, and the projected 2020 demand meets SJWC's water use targets using Method 1 (a straight 20% reduction in per capita use) and Method 3 (95% of regional target). In addition, SJWC plans to participate in a proposed

regional 20% reduction of water use per capita. Based on SCVWD water supply management through year 2035, conservation methods currently employed and future demand management measures, SJWC will be able to meet the needs of the service area through at least 2035 for normal and single dry years. In a multiple dry year event beyond 2025, SJWC may be faced with a 20% reduction of supply from SCVWD sources in years four to six of a multiple dry year event. In this case, SJWC will enact the Water Shortage Contingency Plan (SJWC 2011).

Existing Well

Two groundwater basins, as defined by the California Department of Water Resources (DWR), are located within Santa Clara County: the Santa Clara Valley Basin and the Gilroy Hollister Valley Basin. The project site is not located within a DWR-designated groundwater basin or sub-basins managed by Santa Clara Valley Water District (SCVWD).

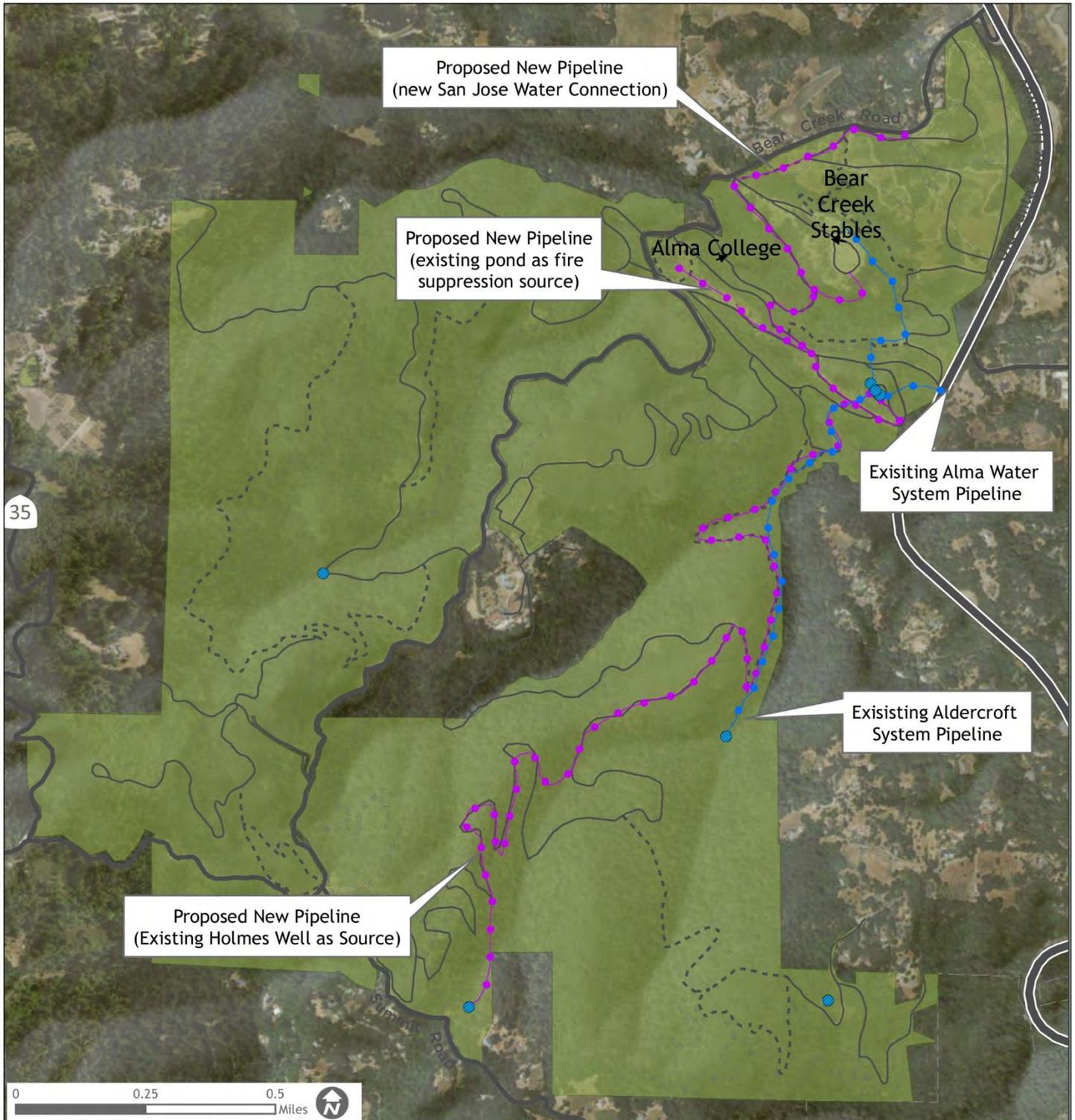
The project site is underlain by relatively shallow sandstone. There is limited data available related to onsite groundwater levels. A groundwater well, known as the Holmes well but herein referred to as the “existing well,” was drilled in the southern portion of the project site in 1976 and is located approximately 4,000 feet southwest of the Aldercroft Creek diversion (Exhibit 4.13-1). The well is located within the Vaqueros formation, the most extensive of local aquifers, yielding low rates of the least-mineralized water in the area. Based on Balance Hydrologics’ experience in the project area, 5 to 10 gallons per minute (gpm) is a typical sustainable yield for the 300-400-foot wells which characterize the area, particularly in the Vaqueros formation. The existing well, with a driller-declared yield of 22 gpm as of July 10, 2015, is identified by Balance Hydrologics as one of the more productive known wells on the summit of the Santa Cruz Mountains (Balance Hydrologics 2015a and 2015b). On May 21, 2015, Balance Hydrologics observed the general condition of the well and confirmed that the well is currently nonoperational and would require restoration (i.e., well pumping testing, water quality testing, repairs, and County well permitting) prior to use. In addition, no spring flow was observed downhill of the well. Given that the existing well is drilled into the Vaqueros formation, it is likely that the existing well would be a viable source of water.

In 1976, after the well was completed, a 4-hour pumping test was executed at 20 gpm that had a drawdown of 210 feet and a well depth of 357 feet. On July 10, 2015, Tom’s Well Service installed a temporary pump on the existing well and conducted a 4-hour pumping test with a pumping rate of 20 gpm with a drawdown of 83.9 feet. The pumping test initially showed some turbidity, then clear groundwater with no obvious odors. According to results from the 4-hour pump test conducted in July 2015, the well will likely produce about 29,000 gpd (Balance Hydrologics 2015b).

On July 10, 2015, Tom’s Well Service obtained a water sample from the well to assess the well’s water quality for general minerals, Title 22 inorganics, and radionuclides (Balance Hydrologics 2015b). Test results indicated that the water quality met all of the primary drinking water standards listed in California Administrative Code, Title 22 (see regulatory discussion below).

SOLID WASTE DISPOSAL

The project site is serviced by GreenTeam of San Jose for garbage collection. Garbage is collected and transported to GreenWaste for diversion and processing and remaining trash is hauled for disposal at Monterey Regional Waste Management District (Monterey Peninsula Landfill) (Greenwaste 2015). Monterey Peninsula Landfill is located in Marina, California and receives approximately 300,000 tons per year of municipal solid waste for disposal. The remaining landfill waste capacity is approximately 48 million tons and is projected to reach its full capacity in the year 2161 (Monterey Regional Waste Management District 2014).



While the District strives to use the best available digital data, this data does not represent a legal survey and is merely a graphic illustration of geographic features.

FEATURES

- Existing Pipeline
- Proposed Pipeline, All Options
- Well, water tank, or existing diversion point

PATROL & TRAILS

- Primary Patrol Access
- ATV Patrol Access
- Close to Public Access/Abandon

Midpeninsula Regional
Open Space District
(MROSD)

May, 2016

X15010027 01 033

Source: MROSD 2016

Exhibit 4.13-1

Water Supply Sources on the Project Site



4.13.2 Regulatory Setting

FEDERAL

Water Supply

Clean Water Act

The CWA is the primary federal statute governing the protection of water quality and was established to provide a comprehensive program to protect the nation's surface waters. EPA is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA. The basis of the CWA consists of the Federal Water Pollution Prevention and Control Act (Water Pollution Act) passed in 1948. The Water Pollution Act was substantially reorganized and expanded in subsequent amendments passed in 1972 and in 1977, when "Clean Water Act" became its common name. The Water Pollution Act required the EPA to establish nationwide effluent standards on an industry-by-industry basis. The 1972 amendment established the National Pollutant Discharge Elimination System program. As a result of the reauthorization of the CWA in 1987, Sections 402(p) through 405 were added. One of the results of the new sections was the creation of a framework for regulating discharges under the National Pollutant Discharge Elimination System permit program, which is discussed later in this section.

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. EPA has designated the State Water Resources Control Board (SWRCB) and its nine regional water quality control Boards with the authority to identify beneficial uses and adopt applicable water quality objectives. EPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA's primary and secondary maximum contaminant levels (MCLs), which are applicable to treated water supplies delivered to a distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting MCLs for drinking water.

On July 1, 2014, the EPA delegated responsibility for administering California's Drinking Water Program from CDPH to the SWRCB. The SWRCB is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations.

Solid Waste Disposal

There are no federal programs or policies addressing solid waste disposal that pertain to the project.

STATE

Water Supply

Title 22 Standards

Water quality standards are enforceable limits composed of two parts: (1) the designated beneficial uses of water and (2) criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply (MUN) is among the “beneficial uses” as defined in Section 13050(f) of the Porter-Cologne Act, which defines them as uses of surface water and groundwater that must be protected against water quality degradation. Maximum contaminant levels, MCLs, are components of the drinking water standards adopted by the SWRCB pursuant to the California Safe Drinking Water Act. California MCLs may be found in Title 22 of the California Code of Regulations (CCR), Division 4, Chapter 15, Domestic Water Quality and Monitoring. SWRCB is responsible for CCR Title 22 (Article 16, Section 64449) as well, which also defines secondary drinking-water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues.

California Water Code, Water Supply Wells and Groundwater Management

The California Water Code (CWC) is enforced by DWR and outlines the general state authority and responsibilities over water in California. DWR’s mission is “to manage the water resources of California in cooperation with other agencies, to benefit the State’s people, and to protect, restore, and enhance the natural and human environments.” DWR is responsible for promoting California’s general welfare by ensuring beneficial water use and development statewide. The laws regarding groundwater wells are described in CWC Division 1, Article 2 and Articles 4.300 to 4.311; and Division 7, Articles 1-4. Further guidance is provided by bulletins published by DWR, such as bulletins 74-81 and 74-90 related to groundwater well construction and abandonment standards.

SCVWD is the groundwater management agency for Santa Clara County and adopted a groundwater management plan in July 2012. Santa Clara County includes portions of two groundwater basins as defined by DWR, the Santa Clara Valley Basin and the Gilroy Hollister Valley Basin. Within Santa Clara County, the SCVWD manages two groundwater sub-basins, the Santa Clara and the Llagas Subbasins (SCVWD 2012: p. 2-7). The project does not fall within a groundwater basin or sub-basin; therefore, the SCVWD Groundwater Management Plan would not be applicable to the proposed project.

Solid Waste Disposal

2010 California Green Building Standards Code, Section 4.408

The 2010 California Green Building Standards Code establishes minimum green building standards for the majority of residential and commercial new construction projects within California. Section 4.408 establishes state-wide standards for construction waste reduction, disposal, and recycling. This section requires the reduction of most nonhazardous construction and demolition waste by at least 50 percent, the use of a construction waste management plan, and documentation demonstrating compliance with the waste management plan.

LOCAL

Water Supply

Santa Clara County General Plan

The project is subject to the *Santa Clara County General Plan* (1994) policies. Guidance associated with water supply is addressed in the Rural Unincorporated Area Issues and Policies (Book B, Part 3) Resource Conservation Element, as follows.

- ▲ **Policy R-RC 8:** The strategies for assuring water quantity and quality for the rural unincorporated areas shall include:
 1. Require adequate water quantity and quality as a pre-condition of development approval.
 2. Reduce the water quality impacts of rural land use and development.
 3. Develop comprehensive watershed management plans.
- ▲ **Policy R-RC 9:** Development in rural unincorporated areas shall be required to demonstrate adequate quantity and quality of water supply prior to receiving development approval.
- ▲ **Policy R-RC 10:** For lands designated as Resource Conservation Areas (Hillsides, Ranchlands, Agriculture, and Baylands) and for Rural Residential areas, water resources shall be protected by encouraging land uses compatible and consistent with maintenance of surface and ground water quality.
 1. Uses that pose a significant potential hazard to water quality should not be allowed unless the potential impacts can be adequately mitigated.
 2. The amounts of impervious surfaces in the immediate vicinity of water courses or reservoirs should be minimized.

Santa Clara Valley Water District Well Ordinance Program

The SCVWD Well Ordinance Program is responsible for issuing well permits and inspecting all well construction activities and well maintenance in Santa Clara County to help keep wells from endangering the public or threatening local groundwater resources. Under the Well Ordinance Program, the SCVWD enforces violations against the District Well Ordinance and state well standards. Through requirements of the well application process and well monitoring, these requirements help to ensure that groundwater usage shall not result in adverse hydrologic and water quality effects.

Santa Clara County Department of Environmental Health-Consumer Protection Division's Drinking Water Program

The County Drinking Water Program reviews all new well construction applications for domestic and agricultural uses prior to the submission to the SCVWD to insure adequate separation from on-site sewage disposal with any new wells.

Proposed Bear Creek Redwoods Open Space Preserve Plan

The following goal and objective of the Preserve Plan related to water supply would be implemented if the Preserve Plan is approved:

Goal NR5: Protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat.

Obj NR-5.3 Identify and maintain existing springs, water infrastructure, and water rights

Solid Waste Disposal

Santa Clara County General Plan

The project is subject to the *Santa Clara County General Plan* (1994) policies. Guidance associated with solid waste disposal is addressed in the Rural Unincorporated Area Issues and Policies (Book B, Part 3) Resource Conservation Element, as follows.

- ▲ **Policy C-RC 64:** County-wide solid waste management efforts shall be guided by the hierarchy of strategies outlined below, emphasizing resource recovery in accordance with state law:
 - (a) Source reduction and reuse,
 - (b) Recycling and composting,
 - (c) Transformation, and

(d) Landfilling as final option

Santa Clara County Code of Ordinances, Green Building Regulations Title C, Chapter III, Section C3-50.

The Green Building Regulations (Santa Clara County 2015) seek to enhance public health and welfare and assure that green building principles and practices are incorporated into new development to limit impacts to the natural and human environment within unincorporated Santa Clara County. The provisions referenced are designed to achieve the goals listed below:

- ▲ Increase energy efficiency in buildings.
- ▲ Reduce potable water demand.
- ▲ Encourage natural resource conservation.
- ▲ Reduce waste generated by construction projects.
- ▲ Provide durable buildings that are efficient, cost-effective, and economical to own and operate.
- ▲ Promote the health and productivity of residents and workers who occupy and live in buildings within the County.

4.13.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Evaluation of potential utilities impacts were based on data obtained from the *Water Resources Inventory at Bear Creek Preserve* (Balance Hydrologics 2016); and other documents provided to and by the MROSD. Environmental protection measures that will be implemented as part of the Preserve Plan are included in Appendix C.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on utilities if it would:

- ▲ exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- ▲ require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▲ require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▲ have insufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements;
- ▲ not 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;
- ▲ be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- ▲ not comply with federal, state, and local statutes and regulations related to solid waste.

ISSUES NOT DISCUSSED FURTHER

Wastewater

The proposed project would be served by a proposed on-site septic system. The project site wastewater (from Bear Creek Stables) is currently treated by on-site septic system and the site has no connection to a public sanitary sewer system. The nearest public sewer line is located at the south edge of Los Gatos, over 2 miles from the stables. The only facilities within the project site that currently connect to a septic system are associated with Bear Creek Stables; the caretaker's house and cottage share a septic tank. The former Alma College Site was previously served by a sewage treatment plant dating back to 1938; however, the system was closed in 1994 because of structural damage that occurred in the 1989 Loma Prieta Earthquake.

The Santa Clara County Onsite Wastewater Systems Ordinance, codified in Sections B11-60 through B11-95 of the Santa Clara County Code, establishes requirements for siting of conventional and alternative wastewater disposal systems. The Onsite Systems Manual provides the policy, procedural, and technical details for implementation of these provisions. The capability of project site soils to support the proposed septic system is discussed in detail in Section 4.5, "Geology, Soils, and Seismicity," of this EIR.

Because the site will utilize a septic system, which would comply with the County's Onsite Wastewater Treatment System Ordinance, the project would not generate any additional demand for municipal wastewater treatment or conveyance. The project would therefore not exceed wastewater conveyance capacity or wastewater treatment capacity. Therefore, no impact would occur.

Effects on Storm Water Drainage Facilities

Regarding storm drainage, although the proposed project includes limited increase of impervious surfaces associated with paved parking lots and driveways, these facilities would be designed with stormwater treatment systems and best management practices (BMPs) to appropriately reduce runoff rates, and impervious surfaces would be miniscule in terms of the overall project site size. Overall, the on-site drainage of the Bear Creek Redwoods Preserve would not substantially change with implementation of the Preserve Plan. The Preserve Plan also includes BMPs to improve drainage and reduce erosion within specific locations throughout the Preserve. Implementation of the proposed project would not require connection to municipal storm water drainage facilities or result in the construction of off-site drainage facilities, the construction of which could cause significant environmental effects. Therefore, no impact would occur to such facilities as a result of the proposed project.

Compliance with Solid Waste Statutes and Regulations

Like all projects located within Santa Clara County, the proposed Preserve Plan is required to comply with all federal, state, and local statutes and regulations related to solid waste. In addition, implementation of Mitigation Measure 4.7-2a would ensure safe transport, use, and disposal of any contaminated soil encountered during proposed demolition activities. As described in Section 4.7, "Hazards and Hazardous Materials" of this EIR, implementation of Mitigation 4.7-2a requires MROSD to prepare a work plan for proposed demolition activities that ensures the safe transport, use, and disposal of contaminated soil removed from the site with oversight of applicable regulatory agencies. These measures may include soil profiling and identification of appropriate landfill facilities for contaminated materials and onsite application locations for other soils. In addition, the proposed Preserve Plan would comply with all federal, state, and local statutes and regulations related to solid waste; therefore, the impact would be less-than-significant.

IMPACT ANALYSIS

Impact 4.13-1: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

With implementation of the proposed project, water demand on the project site would increase from a maximum of 7,200 gpd to a maximum of 8,000 gpd. Based on the indication of availability of municipal water from SJWC, and results of the groundwater pumping and water quality testing completed for the existing well, it is anticipated that one or both of these on-site water sources would be able to provide adequate water supply to serve project demands. This impact is considered **less than significant**.

It is anticipated that implementation of the proposed project, including infrastructure upgrades at Bear Creek Stables, special events and uses at the former Alma College Site, and increased public equestrian use, would create an increase in water demand. MROSD would supply potable water to the Stables and the former Alma College Site, as well as other proposed water needs including emergency fire water storage and trailside horse troughs, using either a connection to an existing 6-inch municipal water line maintained by SJWC, or from an existing on-site well. Upper Lake would also be used if needed for emergency fire suppression. Current water demand on the project site (all currently attributed to Bear Creek Stables) is estimated to range between 1,500 gpd and 7,200 gpd (Balance Hydrologics 2016). The water demand for Bear Creek Stables is not anticipated to substantially change with implementation of the proposed project. Additional proposed uses, including restrooms and the reuse of the former Alma College Site are expected to increase the current demand by 500 to 800 gpd, with a total water demand between 2,000 gpd and 8,000 gpd (Balance Hydrologics 2016). For purposes of this analysis, total estimated water demand for the proposed project is a maximum 8,000 gpd. The majority of water demand with and without the project would be for horses at Bear Creek Stables, which do not require potable water meeting State drinking water quality standards. The demand for potable water would be a very small portion of the total water demand.

SJWC Municipal Water Service

As mentioned above, SJWC submitted a will-serve letter to MROSD indicating that it could serve the project with 8,000 gpd (after completing an inter-agency agreement and appropriate filing to the PUC to extend service). This would meet the project's maximum water demand. SJWC's UWMP indicates that, with existing conservation measures in place and compliance with state water conservation requirements, potable water supply is available to meet the needs of the service area in years of normal precipitation (normal years) and single dry years through at least 2035. If a multi-year dry event (four to six years) occurs after 2025, implementation of the Water Shortage Contingency Plan would be necessary to meet the water demand (SJWC 2011). SJWC will be able to adequately supply the project's water demand.

Existing Well

Based on results of a 4-hour pump test conducted in July 2015, the existing well is anticipated to have sufficient yield (more than 10,000 gpd) (Balance Hydrologics 2015b) to meet the project's maximum water demand of 8,000 gpd. As discussed in Section 4.8, "Hydrology and Water Quality," modeled projections for potential drawdown at other nearby wells revealed that groundwater pumping at the rate expected to meet the project's maximum demand of 8,000 gpd would have minimal effects on nearby wells. This is an indicator that the well would provide sustainable long-term yield at the project's rate of demand as well as the other demand for groundwater in the vicinity of the well.

MROSD would comply with applicable State and County requirements to operate and recondition the well prior to use as groundwater supply to serve the proposed project. This would include water quality requirements of the California Health and Safety Code, California Code of Regulations Title 22, the Santa Clara County Department of Environmental Health-Consumer Protection Division's Drinking Water Program, and the SCVWD Well Ordinance Program. Because the entire Preserve Plan can be adequately supplied by either the existing SJWC water service line adjacent to the Preserve, or the existing groundwater well, which would be

constructed, operated, and maintained in compliance with State and County requirements, the project would result in a **less-than-significant** impact associated with water supply.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.13-2: Generate solid waste that could adversely affect landfill capacity.

Proposed demolition of on-site buildings and implementation of phased elements of the Preserve Plan would result in a small increase of solid waste generation at the project site. However, adequate landfill capacity is available at the Monterey Peninsula Landfill to accommodate solid waste generated by the project. This is a **less-than-significant** impact.

Currently, the main source of solid waste within the project site is the existing Bear Creek Stables, which is serviced by GreenTeam of San Jose for garbage collection. GreenTeam of San Jose serves the western portion of Unincorporated Santa Clara County, including Los Gatos (GreenTeam 2015). Garbage is collected by GreenTeam and is transported to GreenWaste for diversion and processing; solid waste that cannot be recycled is hauled for disposal at Monterey Regional Waste Management District (Monterey Peninsula Landfill) (Greenwaste 2015). Remaining landfill waste capacity is approximately 48 million tons (assuming an Airspace Utilization Factor of 0.676 ton per cubic yards) and is projected to reach its full capacity in the year 2161 (Monterey Regional Waste Management District 2014).

Implementation of phased elements of the Preserve Plan, including removal of dilapidated buildings and events at the former Alma College Site, would generate short-term construction-related solid waste. Operation of Bear Creek Stables would generate solid waste similar to existing conditions, except that special events may generate some additional solid waste. Special events at the former Alma College Site would also generate some additional solid waste. Trail users would not generate solid waste as MROSD will continue to require that trail users remove their trash on a “pack-in, pack-out” basis. As indicated above, Monterey Peninsula Landfill as capacity of 48 million tons and is expected to reach full capacity in 2161. Therefore, the project would not be expected to substantially affect landfill capacity. This impact is **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

5 OTHER CEQA CONSIDERATIONS

5.1 CUMULATIVE IMPACTS

CEQA requires that an EIR include an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. An EIR must discuss the cumulative impacts of a project when its incremental effect will be cumulatively considerable. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, Section 15130(a)).

Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable.

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document.

The basis of the cumulative analysis varies by technical area. For example, air quality impacts are evaluated against conditions in the air basin. Other cumulative analyses, such as cultural resources, consider the potential loss of resources in a broader, more regional context. Cumulative impacts for each technical area are discussed below.

5.1.1 Geographic Context of the Cumulative Impacts Analysis

A review of cumulative impacts is limited to Santa Clara County, which is the jurisdiction in which the proposed project is located. The geographic area that could be affected by the project varies depending upon the type of environmental resources being considered. Table 5-1 presents the general geographic areas associated with each of the resources addressed in this analysis.

As described in State CEQA Guidelines Section 15130(a)(2), "When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR." With respect to this guidance, several environmental issues are site-specific or would only contribute to cumulative impacts if other projects were proposed in the project vicinity. No projects are proposed in the vicinity of the project, as further discussed below. Therefore, as further enumerated in Table 5-1, the project would not contribute to any cumulative impacts to aesthetics; geology, soils, and seismicity; hazards and hazardous materials; land use; noise; or utilities. These issues are not discussed in the cumulative analysis.

Table 5-1 Geographic Scope of Cumulative Impacts	
Resource Issue	Geographic Area
Aesthetics	Immediate project vicinity*
Air Quality	Regional (San Francisco Bay Area Air Basin—pollutant emissions that have regional effects) Local (immediate project vicinity—pollutant emissions that are highly localized)
Biological Resources	MROSD open space preserves and regional
Cultural Resources	MROSD open space preserves and regional
Geology, Soils, and Seismicity	Local (immediate project vicinity)*
Greenhouse Gas Emissions	Global
Hazards and Hazardous Materials	Site specific (not cumulative)*
Hydrology and Water Quality	Immediate project vicinity and regional watersheds
Land Use	Local (immediate project vicinity)*
Noise	Immediate project vicinity (project traffic is not substantial enough to add to cumulative traffic noise)*
Recreation	Regional and local
Traffic and Transportation	Regional roadways and immediate project vicinity
Utilities	Cumulative water supply is addressed in Section 4.13, “Utilities and Service Systems,” other utilities are site specific (do not substantially use regional utility system)*

*Would not contribute to cumulative impacts because no related projects are proposed in the vicinity

RELATED PROJECTS

The project site is in a fairly remote area of unincorporated Santa Clara County, and no development is currently proposed or anticipated in the vicinity of the project. MROSD and other agencies, special districts, and open space land trusts (Santa Clara County Parks Department, Santa Clara County Open Space Authority, Peninsula Open Space Trust) that manage nearby open space and park lands conduct similar management and maintenance activities. These activities include construction of trails and recreational improvements, natural area restoration, control of invasive plants, pest control, and maintenance of existing buildings, roads, and recreational facilities. These activities are evaluated on an individual basis to determine their likelihood to result in environmental effects and whether they are part of the agency’s ongoing management activities or would be considered “projects’ under CEQA. MROSD and other public lands management entities in the vicinity of the Preserve are expected to acquire additional lands in the foreseeable future, and would continue to conduct maintenance, management, restoration projects and pest management on those lands. These types of activities are considered in the following cumulative impacts analysis.

5.1.2 Air Quality

The San Francisco Bay Area Air Basin (SFBAAB) is currently designated as a nonattainment area for both ozone and particulate matter. Although there are no proposed development projects within the project vicinity, it is likely that other development projects would occur within the SFBAAB that would contribute to criteria pollutants. Therefore, a significant cumulative impact could occur related to the current nonattainment status and related projects occurring in the SFBAAB. As discussed in Section 4.2, “Air Quality,” project-generated construction-related emissions of fugitive dust (PM₁₀ and PM_{2.5}) could violate or contribute substantially to the SFBAABs nonattainment status, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts. However, implementation of environmental protection measures would require construction-related measures to reduce construction

emissions, which would reduce this impact to a less-than-significant level. In addition, project-generated operational-related ozone precursor and particulate matter emissions would not exceed the applicable thresholds. All other project-level air quality impacts are localized in nature and would be less than significant (i.e., Impact 4.2-3 through Impact 4.2-5). Thus, the project's incremental contribution to this significant cumulative impact would not be cumulatively considerable and, thus, **less than significant**.

5.1.3 Biological Resources

No development projects are planned in the immediate project vicinity; however, past development within the county has resulted in a loss of native habitat, and construction of Highway 17 has been identified as a barrier to wildlife movement. This land conversion and habitat fragmentation has had a negative effect on native plants, animals, and habitat.

As discussed in Section 4.3, "Biological Resources," implementation of the proposed project could result in disturbance to special-status plant habitat. However, implementation of Environmental Protection Measures BIO-1 through BIO-10 would reduce potential impacts to special-status plants to a less-than-significant level. In addition, the Preserve Plan would allow public access to wildlife habitats that currently have limited human activity. Allowing public access to the Preserve is unlikely to substantially adversely affect native wildlife or plant communities or interfere with wildlife movement. With implementation of Environmental Protection Measures BIO-10 and BIO-14, the plan is also not expected to substantially increase the spread of invasive species. Additionally, the Preserve Plan would not conflict with any local applicable policies protecting biological resources. These less-than-significant project impacts, in combination with cumulative development, would not be cumulatively considerable.

Modifications to existing abandoned buildings within the former Alma College site and tree removal could result in disturbance to active bat colonies that could affect the survival of young or adult bats. Loss of an active bat colony would be considered a significant project impact. However, with implementation of project Mitigation Measure 4.3-2, which requires surveys be conducted before structure demolition, and development of exclusion methods and compensatory mitigation if appropriate, project impacts would be reduced to less than significant.

Ground-disturbing activities related to trail construction, road improvements, or other construction activities could result in a substantial adverse effect on special-status amphibian and reptile species. The potential loss of special-status species is considered a significant project impact. However, with implementation of project Mitigation Measures 4.3-3a through 4.3-3d, which require surveys be conducted, implementation of measures to avoid or minimize impacts in consultation with appropriate agencies, and compensatory mitigation, if needed, project impacts would be reduced to less than significant.

Although pipelines, trails, and other recreational facilities would be located to avoid sensitive natural communities and wetlands to the extent possible, construction of these facilities could require removal of riparian and wetland vegetation and could result in the placement of fill material into waters of the U.S. This is considered a significant project impact. With implementation of Mitigation Measure 4.3-4, which requires a wetland delineation and measures to reduce impacts if wetlands are determined to be potentially present and cannot be fully avoided (including no net loss of habitat value), project impacts would be reduced to less than significant.

Although some tree removal would be required for the Preserve Plan, tree removal would be avoided to the extent possible. Once detailed grading/improvement plans are available, MROSD will coordinate with Santa Clara County to adhere to the requirements of the Tree Protection Ordinance. MROSD would implement Mitigation Measure 4.3-5 to ensure compliance with the County's Tree Protection Ordinance.

Although the project would create significant site-specific impacts, mitigation is required to avoid or reduce these impacts to a less-than-significant level. Because the proposed project would not be expected to

measurably contribute to significant cumulative biological resources impacts, and would likely result in overall protection and enhancement of habitat, the proposed project would result in **less-than-significant** cumulative biological resource impacts.

5.1.4 Cultural Resources

Development throughout Santa Clara County and the region has the potential to adversely affect existing known and unknown cultural resources, both archaeological and structural in nature. There are no known development projects in the vicinity that would affect cultural resources. With implementation of mitigation measures and environmental protection measures the proposed project would result in less-than-significant impacts related to archaeological and paleontological resources, as well as impacts to human remains. The proposed project also results in a less-than-significant impact related to the existing cultural landscape associated with the former Alma College site. Because the proposed project would result in a less-than-significant impact to these resources, the project would not substantially contribute to a cumulative impact. However, the proposed project includes implementation of a Rehabilitation Plan for the former Alma College site, which includes demolition of structures currently listed on the Santa Clara County Heritage Resource Inventory. Although more recent studies have indicated that these structures are currently ineligible for listing on the California Register of Historical Resources (CRHR), because the structures are on the County's Heritage Resource Inventory, the impact is considered significant, even after implementation of mitigation measures. However, because these resources are substantially deteriorated and were found to be ineligible for listing on the CRHR, and because the proposed project includes rehabilitation of the most valuable historic structures on the site, as well as rehabilitation and interpretation of the Alma College cultural landscape, the proposed demolition would not substantially contribute to a significant cumulative impact and the proposed project would result in a **less-than-significant** impact to cultural resources.

5.1.5 Greenhouse Gas Emissions

Climate change is an inherently cumulative issue. The analysis of greenhouse gas (GHG) emissions and climate change is provided in Section 4.6, "Greenhouse Gas Emissions" of this EIR. That cumulative analysis looks at the contribution of GHGs related to the overall construction and operation of the Preserve Plan and determined they are less than cumulatively considerable because the project would generate less than 10,000 metric tons of carbon dioxide equivalent per year. The GHG analysis also concludes that the Preserve Plan would not conflict with local, state or federal plans to reduce GHG emissions. Implementation of the Preserve Plan would have a **less-than-significant** cumulative impacts related to GHG emissions.

5.1.6 Hydrology and Water Quality

Overall hydrology has been altered and water quality in the region has degraded over time as natural habitat has been converted to urban uses. These uses have resulted in runoff of various pollutants into local and regional waterways. A variety of programs have been implemented with the goal of halting degradation of water quality and reversing this trend. Several state and federal agencies are involved in these programs, many of which are required by or originate in the federal Clean Water Act. Other projects occurring within the project watersheds would also be required to comply with applicable state and federal regulations related to water quality. Nonetheless, a cumulative adverse water quality condition exists.

As discussed in Section 4.8, "Hydrology and Water Quality," the quality of surface water in the Preserve is currently effected by ongoing erosion related to the design and condition of the existing trails, lack of vegetation in some developed areas, and alterations to surface hydrology that impair the confluence of surface runoff. Implementation of Environmental Protection Measures HYDRO-1 through HYDRO-8 and GEO-1 through GEO-3 would effectively limit the potential for the proposed actions to violate water quality

standards or waste discharge requirements, or to otherwise degrade water quality. This impact would be less-than-significant.

Short-term water-quality impacts associated with project-related construction activities would be minimized by proposed environmental protection measures and mitigation measures. Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase in erosion or siltation. Implementation of Environmental Protection Measures HYDRO-6 through HYDRO-8 would maintain the flow of runoff and reduce the potential for blockages along the creeks that could result in erosion. In addition, the improved infrastructure could be a benefit to water quality by reducing ongoing sedimentation and erosion, as well as minimizing the potential for flooding and water quality degradation during larger storm events. Because of the limited scope of potential development, and the environmental protection measures and infrastructure upgrades that MROSD has committed to implementing, the proposed project would have a less-than-significant impact.

Implementation of the Preserve Plan would not substantially alter the existing drainage pattern of the site or area such that there would be a substantial increase or change in the surface runoff on the site. Environmental Protection Measures HYDRO-1, HYDRO-2, HYDRO-6, and HYDRO-8 would reduce the potential for runoff to contribute to flooding or exceed the capacity of the existing drainage system. This impact would be less-than-significant.

Generally, the additional design and maintenance activities proposed in the Preserve Plan would reduce the potential for flooding to have a negative effect on the site. However, there is potential that an existing dam on Aldercroft Creek is located on a trace of the San Andreas Fault, and the potential for failure of this dam to result in flooding is a potentially significant impact. Implementation of Mitigation Measure 4.8-4 would reduce the potential for flooding by conducting an in-depth geologic and geotechnical investigation of the dam at the southern end of Alma Lake on Aldercroft Creek and requiring dam improvements and limitations to public access (if necessary) based on the results. This impact would be reduced to less than significant.

Although the project would cumulatively contribute to hydrology and water quality impacts, the contribution would not be considered cumulatively significant because measures would be implemented to minimize or avoid project-related water quality and hydrology impacts on site. Similarly, future development would be required, by federal, State and local regulations, to implement site-specific mitigation. Because the proposed project would not be expected to measurably contribute to cumulative water quality and hydrology impacts, and proposed sediment and erosion-control features could improve water quality in the watershed, the proposed project would have **less-than-significant** cumulative water quality and hydrology impacts.

5.1.7 Recreation

As development and growth occurs within the county, the demand for recreational facilities will continue to increase. There are a number of existing recreational opportunities within the project vicinity and the Preserve would expand recreational opportunities within the county. As discussed in Section 4.11, "Recreation," implementation of the Preserve Plan would not increase the use of existing neighborhood or regional parks or include recreational facilities that would have an adverse physical effect on the environment. The Preserve would have a beneficial effect on the overall recreational opportunities within the county. Therefore, implementation of the Preserve Plan would not result in a cumulatively considerable contribution to a cumulative impact on recreation. The impact is **less than significant**.

5.1.8 Traffic and Transportation

Cumulative traffic impacts are evaluated and presented in Section 4.12, "Traffic and Transportation," in Chapter 4.

5.2 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the State CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Although growth inducement itself is not considered an environmental effect, it could potentially lead to adverse environmental effects.

Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped. Typically, development projects on sites that are designated for development and surrounded by existing suburban uses are not considered adversely growth-inducing because growth in areas that already have development and infrastructure available to serve new development are generally considered in established planning documents.

5.2.1 Growth Inducing Impacts of the Project

MROSD employs approximately 120 regular staff in its Administrative Services, Operations, Planning, Public Affairs, Natural Resources and Real Property departments. Approximately 12 part-time and seasonal employees are also employed by MROSD. Existing caretaker residences may be replaced as part of the project, but no additional businesses or residences are proposed under the Preserve Plan. The proposed project would not induce population growth because it would not introduce new land uses associated with population increases (e.g., housing, employment centers). The project would not include land uses that would result in people relocating to the area and would not displace housing units or people. The Preserve Plan would not extend utilities to an area not currently served, and would, therefore, not remove an impediment to growth. Therefore, implementation of the proposed project would not cause growth inducing impacts.

5.3 SIGNIFICANT AND IRREVERSIBLE CHANGES

The State CEQA Guidelines require a discussion of the significant irreversible environmental changes that could occur should the project be implemented. An example of significant irreversible environmental change is the irreversible and irretrievable commitment of resources (i.e., the permanent loss of resources for future or alternative purposes). Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms. The project may result in the irreversible and irretrievable commitment of energy and material resources during project implementation, including the following:

- ▲ construction materials, including such resources as soil, wood, concrete, glass, and steel;
- ▲ land area committed to new project facilities;
- ▲ water supply for project operation; and
- ▲ energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the State's resources and would not affect the availability of these resources for other needs within the region. Long-term operational energy and natural resource consumption is expected to be minimal and would not exceed the capacity of energy suppliers to meet local demand. Project activities would be relatively minor in magnitude and would not result in inefficient use of energy or natural resources. Contractors selected for construction of the proposed improvements would use best available engineering techniques, design practices, and equipment operating procedures.

5.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Detailed mitigation measures are identified in Chapter 4 of the DEIR that are intended to mitigate project effects to the extent feasible. All of these mitigation measures are identified in Table 2-1. After implementation of the proposed mitigation measures, nearly all of the adverse effects associated with the project would be reduced to a less-than-significant level. However, the proposed project would result in significant impacts related to historic buildings. As discussed in Impact 4.4-2, although the former Alma College site has recently been evaluated and found ineligible as a historic district for listing on the CRHR, the "Alma College Complex" remains listed on the Santa Clara County Heritage Resource Inventory; it was originally listed in 1995. The proposed project would result in the demolition of four buildings that are listed as part of the "Alma College Complex" on the Santa Clara County Heritage Resource Inventory. Demolition of these historic resources would result in a **significant and unavoidable** impact because the historic resources would no longer exist. Mitigation measures are identified to reduce the impact by requiring documentation of the resources; however, implementation of the mitigation does not reduce the impact to a less-than-significant level.

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6 ALTERNATIVES TO THE PROJECT

6.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines (State CEQA Guidelines) Section 15126.6[a] requires an EIR to “describe a range of reasonable alternatives to the project, ...[that] would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives.” The purpose of the alternatives analysis is to determine whether or not an alternative to the proposed Bear Creek Redwoods Preserve Plan would feasibly reduce or eliminate significant project impacts, within the basic framework of the objectives.

The range of alternatives studied in an EIR is governed by the “rule of reason,” requiring evaluation of only those alternatives “necessary to permit a reasoned choice” (State CEQA Guidelines Section 15126.6[f]). Further, an agency “need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (State CEQA Guidelines Section 15126.6[f][3]). The analysis should focus on alternatives that are feasible (i.e., that may be accomplished in a successful manner within a reasonable period of time, taking economic, environmental, social, and technological factors into account). Alternatives that are remote or speculative or that do not feasibly meet most of the project objectives need not be discussed. Furthermore, the alternatives analyzed for a project should focus on reducing or avoiding significant environmental impacts associated with the project, as proposed.

The objectives of the proposed Bear Creek Redwoods Preserve Plan are listed below. These objectives are consistent with the goals stated in the Preserve Plan. The evaluation of alternatives is conducted in the context of seeking to meet most of these objectives. Specific objectives of the Preserve Plan are to:

- ▲ allow general public access and enhance low-intensity recreational opportunities in the Preserve;
- ▲ provide low-impact, high-value site-sensitive interpretation and environmental education activities;
- ▲ expand opportunities for people with diverse physical abilities to enjoy the Preserve;
- ▲ provide regional and local trail connections;
- ▲ actively involve the public in the use and management of the Preserve;
- ▲ maximize public benefits of Bear Creek Stables by broadening public access and use of the facility;
- ▲ increase the acreage of protected habitat and connectivity to wildlife corridors;
- ▲ protect habitats that support diverse biological resources, are unique, or are important for the conservation of rare, threatened and endangered species;
- ▲ protect native wildlife;
- ▲ repair and monitor ecologically damaged and disturbed areas;
- ▲ protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat;
- ▲ protect and interpret significant historical and cultural resources;

- ▲ within MROSD’s basic mission, rehabilitate the former Alma College site so it can be integrated into the Preserve, while respecting the site’s history, character and cultural landscape;
- ▲ maintain trails and facilities to protect the natural environment and provide for a quality visitor experience;
- ▲ address environmental hazards;
- ▲ reduce wildfire risk;
- ▲ develop a viable plan that is financially feasible for both a tenant and MROSD that allows for long-term maintenance and operations of Bear Creek Stables; and
- ▲ ensure that all leases, easements, access agreements, and other legal arrangements are consistent with Preserve Plan goals and MROSD’s mission, Strategic Plan, and Open Space Vision Plan.

6.2 SUMMARY OF ENVIRONMENTAL IMPACTS

The purpose of this section is to briefly summarize the significant impacts to the environment with implementation of the proposed Bear Creek Redwoods Preserve Plan, as identified in Chapters 4 and 5 of this document. Potentially significant impacts were identified for biological resources (special-status species and associated habitats, as well as trees), impacts related to cultural landscape, impacts related to potential on-site soil contamination, and potential impacts related to dam failure. Implementation of mitigation measures identified throughout Chapter 4 would reduce these impacts to a less-than-significant level.

Significant impacts were identified for cultural resources for which further mitigation is not available and the impact remains significant and unavoidable. Specifically, the proposed project would result in demolition of structures currently listed on the Santa Clara County Heritage Resource Inventory, although these buildings are in poor condition with structural damage and blight. Although the proposed rehabilitation plan would provide upgrades to some structures and interpretive opportunities for those structures removed, because some listed buildings would be lost, the impact is considered significant and no additional feasible mitigation measures are available.

See Chapter 2, “Executive Summary,” for a more detailed summary of the impact conclusions and mitigation measures identified.

6.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

State CEQA Guidelines Section 15126.6(c) provides that an EIR “should also identify any alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination.” The following alternatives were considered, but were dismissed from further consideration, as explained below.

- ▲ **Full Alma College Rehabilitation.** This Alternative would be similar to the proposed project, except that rather than any demolition of structures at the former Alma College site, it would rehabilitate all existing structures. This alternative would avoid project-related significant and unavoidable impacts associated with removal of historic structures that are listed on the County’s Heritage Resource Inventory. However, this alternative was eliminated from further consideration for two primary reasons. First, most structures identified for demolition are located on or within 50 feet of a trace fault associated with the San Andreas Fault. Compliance with California Building Code (CBC) for these structures would be prohibitively expensive. Second, damage from previous earthquakes, as well as exposure and age, has deteriorated these structures such that repair and rehabilitation would be prohibitively expensive. The expense

associated with this alternative renders it financially infeasible. Furthermore, retaining the 1950 library for large events, such as weddings or conventions, would require cost-prohibitive utility upgrades (including substantially greater water demand) and potentially result in noise, traffic, or hazards-related impacts. This level of “concentrated use” is also outside the mission of MROSD, which provides for “low-intensity” public use only. For these reasons discussed, the Full Alma College Rehabilitation Alternative has been eliminated from further consideration in this Draft EIR.

- ▲ **Former Bear Creek Stables “Alternative C.”** MROSD considered and presented to the public, a different iteration of Alternative C for the Bear Creek Stables. The primary feature that distinguished former Alternative C from Bear Creek Stables Alternatives A, B, and current Alternative C, which are evaluated throughout Chapter 4, is that it would include a multi-purpose structure combining residential space for the caretaker, as well as office and hay storage space. This multi-purpose structure would have been three stories tall. Development of the multi-purpose structure would have required demolition of the oldest barn associated with Bear Creek Stables. MROSD dismissed Alternative C from further consideration because the height and mass of the multi-purpose structure was not considered to be aesthetically compatible with the surrounding environment. Furthermore, Bear Creek Stables Alternative C included more intense development than the other two alternatives and would not reduce or avoid any of the impacts associated with the proposed project. For all of these reasons, Bear Creek Stables Alternative C has been eliminated from further consideration.

6.4 ALTERNATIVES CONSIDERED FOR DETAILED EVALUATION

California Code of Regulations Section 15126.6(e) (1) requires that the no project alternative be described and analyzed “to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project.” The no project analysis is required to discuss “the existing conditions at the time the notice of preparation is published...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (Section 15126.6[e][2]). “If the project is... a development project on identifiable property, the ‘no project’ alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed. In certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” (Section 15126[e][3][B].)

In the case of the proposed Preserve Plan, because the project site is currently owned and operated by MROSD as a Preserve, and because it is not zoned or designated by the County for any urban uses, it is highly likely that, if the Preserve Plan were not approved or implemented, the project site would remain a Preserve, and no development or further recreational uses would occur on the site. Therefore, the No Project Alternative assumes preservation of existing environmental conditions (factoring in the effects of weather and time).

The other two alternatives include modifications to the Preserve Plan that would reduce environmental impacts associated with the proposed project. These alternatives include the “No Alma College Rehabilitation Alternative,” and the “No Special Events Alternative.” These alternatives, as well as the No Project Alternative, are described in detail below. Following each alternative description is a qualitative evaluation of the relative environmental impacts associated with that alternative, as compared to the proposed project.

6.4.1 No Project Alternative

The No Project Alternative assumes no approval or implementation of a Preserve Plan and that the existing condition of the project site would continue, as affected by normal influences of time and weather. The Bear Creek Stables would remain in the current condition with no improvements, aside from the current standard maintenance, and the former Alma College site would remain closed to the public and existing structures would not be repaired or rehabilitated. No new trails would be developed and no new public access to existing trails would be provided. No additional facilities, such as parking lots or restrooms would be developed.

- ▲ **Aesthetics.** Implementation of the No Project Alternative would not substantially affect the aesthetic environment. Visual conditions of the site would generally remain the same. Structures associated with the former Alma College site would continue to deteriorate and may therefore become somewhat less visually appealing; however, their current condition is already an extreme state of disrepair with run-down buildings, some covered by graffiti, and further deterioration would not be substantially noticeable. The No Project Alternative would not result in substantial adverse effects to views, vistas, or the visual character of the site. However, the proposed project would likely improve the visual character of both the Bear Creek Stables and the former Alma College site. Therefore, overall, impacts associated with No Project Alternative would be *Slightly Greater* than the proposed project.
- ▲ **Air Quality.** Because there would be no construction, no additional traffic, and no additional power demand, implementation of the No Project Alternative would result in no increase in emissions of air pollutants. The proposed project emissions are considered less-than-significant with implementation of standard construction management practices. Therefore, the emissions associated with the No Project Alternative would be *Slightly Less* than the proposed project.
- ▲ **Biological Resources.** The No Project Alternative includes no construction activities and no changes in the current management of the Preserve. Therefore, no impact to biological resources would occur. By comparison, the proposed project includes trail construction, improvements to the Bear Creek Stables including tree removal, and rehabilitation of the former Alma College site, as well as construction of facilities to support recreation (such as restrooms and parking areas). The proposed project requires mitigation measures to reduce construction- and operations-related impacts to special-status species and habitat, as well as impacts to trees. Compared to the proposed project, the No Project Alternative would result in *Slightly Less* impact to biological resources than the proposed project.
- ▲ **Cultural Resources.** No sub-surface archaeological resources would be affected by implementation of the No Project Alternative because it includes no construction. However, existing historic resources on the site, including the former Alma College which is currently listed on the Santa Clara County's Heritage Resource Inventory, would continue to deteriorate. Over time, this deterioration would further compromise the already deteriorating nature of these structures to the point that none of the structures could be feasibly rehabilitated or even stabilized. Although the proposed project includes demolition of currently compromised structures that remain on the County's Heritage Resource Inventory, implementation of the proposed project focuses on rehabilitation of some key structures (also listed on the County's Inventory), enhancement of many of the culturally defining features of the site's history, and opening the enhanced and rehabilitated site to public access. Although implementation of the No Project Alternative might appear to avoid a significant impact of the proposed project by avoiding demolition of County-listed structures; further deterioration of those structures under the No Project Alternative would likely ultimately result in an overall *Greater* impact than the proposed project because no rehabilitation of existing historic resources would occur, no enhancement of culturally defining features would occur, and further impacts would occur as historic structures continue to deteriorate under the influences of time, weather, and seismic activity. Compared to the proposed project, the No Project Alternative would result in *Greater* impact to biological resources than the proposed project.

- ▲ **Geology and Soils.** Implementation of the No Project Alternative involves no new structures and no construction activities. No additional erosion would occur. Existing structures would continue to be exposed to seismic activity; however, no occupancy of any currently unoccupied structures would occur, and the Alma College structures would continue to be restricted from public access. No new septic system or expansion of the existing septic system would occur. In addition, the proposed project includes implementation of Best Management Practices (BMPs) that would reduce existing levels of soil erosion; these BMPs would not be included under the No Project Alternative and existing erosion issues would continue. The proposed project would comply with CBC to ensure structural safety during a seismic event. The No Project Alternative continues to restrict public access near the Alma College structures, and it avoids potential for exposure to seismic hazard risk. Therefore, the impact associated with the No Project Alternative would be *Similar* to the proposed project.
- ▲ **Greenhouse Gas Emissions.** The No Project Alternative would not generate traffic or demand for additional energy; therefore, this alternative would not increase emissions of greenhouse gases (GHG). Implementation of the proposed project would generate some GHGs, but would not exceed the Bay Area Air Quality Management District GHG threshold. Implementation of the No Project Alternative would generate slightly fewer emissions; therefore, the No Project Alternative would result in *Slightly Less* impact related to GHG.
- ▲ **Hazards and Hazardous Materials.** The No Project Alternative involves no additional use or transport of hazardous materials. Existing structures that include materials containing asbestos, lead, and other hazardous materials would not be demolished and would therefore pose no hazard to construction workers or nearby residences. No construction work would occur within areas where underground storage tanks (USTs) may have been present; therefore, no potential exposure to construction workers would occur. Although the proposed project includes mitigation measures to reduce impacts related to hazards and hazardous materials, implementation of the No Project Alternative would result in no impact related to hazards and hazardous materials. Therefore, the residual impact would be *Slightly Less* under the No Project Alternative.
- ▲ **Hydrology and Water Quality.** The No Project Alternative includes no new construction or impervious surfaces. However, unlike the proposed project, no BMPs or erosion-control improvements would be implemented and existing erosion associated with Bear Creek Stables and exposed dirt on unused roads would continue to convey increased sediment to local waterways. The No Project Alternative would not degrade existing water quality and would therefore result in no impact; however, it would also not result in water quality benefits associated with the proposed project. For this reason, the No Project Alternative would have a *Slightly Greater* impact than the proposed project because existing erosion-related impacts would continue.
- ▲ **Land Use.** The No Project Alternative would involve no land use changes or development of any additional recreation activities. Similarly, no land use changes would occur under the proposed project. Both the No Project Alternative and the proposed project would remain consistent with County zoning and land use designation and would not conflict with County or MROSD policies. Therefore, impacts associated with Land Use would be *Similar* between the No Project Alternative and the proposed project.
- ▲ **Noise.** Implementation of the No Project Alternative involves no construction activities or increases in operational intensity, including traffic. No additional noise would be generated by the No Project Alternative. By contrast, the proposed project would involve construction of new recreation facilities, improvements at Bear Creek Stables, rehabilitation of the former Alma College site, and special events. Although implementation of the Preserve Plan would allow visitors access to areas of the Preserve that are currently limited to permit use only, these visitors would not substantially effect noise levels at sensitive receptor locations. In addition, noise related to special events would not occur under the No Project Alternative; however, special events associated with the proposed project would not increase noise levels beyond County limits or cause substantial increases in ambient noise levels at receptors. Although the proposed project would not generate substantial noise, because the No Project Alternative

would not generate any additional noise, the Alternative, overall, would result in *Slightly Less* noise impact than the proposed project.

- ▲ **Recreation.** Unlike the proposed project, the No Project Alternative includes no new recreation facilities and would not include connection to regional trails or other recreation facilities. The proposed project results in less-than-significant impacts related to recreation. Recreation-related impacts associated with the No Project Alternative would be *Similar*.
- ▲ **Traffic.** The No Project Alternative includes no new trails, recreation facilities, or new public access. Implementation of this alternative would not generate any traffic and would not result in any new access points or driveways. By comparison the proposed project would generate a minor amount of traffic and would result in less-than-significant traffic impact. Therefore, the residual impact associated with the No Project Alternative would be *Slightly Less* than the project impact.
- ▲ **Utilities.** Under the No Project Alternative, MROSD would continue utilizing water from the Aldercroft Creek Diversion and would not require drilling of the well. Existing septic tanks would continue to be used to support the current stables use. The No Project Alternative would not require supply of potable water, whereas the proposed project may connect to SJWC's 6-inch water line (as one of the water supply alternatives). SJWC has adequate capacity to supply the project; therefore, impacts would be *Similar* under the No Project Alternative.

6.4.2 No Alma College Rehabilitation Alternative

The No Alma College Rehabilitation Alternative includes all of the components of the proposed project except that the former Alma College site would not be rehabilitated. Under this alternative, public access would not be permitted at the former Alma College site because the existing structures would not be stabilized and this could pose a public safety hazard as the structures continue to degrade over time, especially given the proximity to the San Andreas Fault. Parking and recreation-supporting facilities would not be included at the former Alma College site. In addition, no special events would occur at the former Alma College site.

- ▲ **Aesthetics.** Implementation of the No Alma College Rehabilitation Alternative would result in similar visual changes as the proposed project with respect to construction of trails and implementation of improvements at the Bear Creek Stables. Under this alternative, structures associated with the former Alma College site would continue to deteriorate and may therefore become somewhat less visually appealing; however, their current condition is already an extreme state of disrepair, and further deterioration would not be substantially noticeable. The proposed project would improve the visual character of the former Alma College site. For this reason, impacts associated with the No Alma College Rehabilitation Alternative would be *Greater* than the proposed project.
- ▲ **Air Quality.** Because there would be no demolition or construction associated with rehabilitation of existing buildings at the former Alma College site implementation of the No Alma College Rehabilitation Alternative would result in lower emissions of air pollutants than the proposed project. The proposed project emissions are considered less-than-significant with implementation of standard construction measures. Therefore, the emissions associated with the No Alma College Rehabilitation Alternative would be *Slightly Less* than the proposed project.
- ▲ **Biological Resources.** The No Alma College Rehabilitation Alternative includes a disturbance area similar to the proposed project, except that no disturbance would occur with the former Alma College site. The former Alma College site is previously disturbed and is developed with existing structures and does not provide habitat for most special status species. However, structures on the former Alma College site currently house bat colonies. This EIR identifies mitigation measures to reduce project-related impacts to special-status bats. This mitigation measure fully mitigates potential impacts to special-status bats. The No Alma College Rehabilitation Alternative would avoid impacts to special-status bats because no

demolition of Alma College structures would occur. The No Alma College Rehabilitation Alternative would therefore result in *Slightly Less* impact compared to the proposed project.

- ▲ **Cultural Resources.** Because the No Alma College Rehabilitation Alternative includes ground-related construction activities associated with trails, parking areas, and improvements to Bear Creek Stables, potential impacts to sub-surface archaeological resources would be similar to the proposed project. However, existing historic resources, including the Alma College Complex which is currently listed on the County's Heritage Resources Inventory, would continue to deteriorate as a result of exposure to weather, seismic events, and other factors. Over time, this deterioration may compromise the integrity of these structures to the point that none of the structures could be feasibly rehabilitated or stabilized. Even if deterioration was halted via maintenance, the structures would be in a state of disrepair, and no access and interpretive programs would be afforded to the public. Although the proposed project includes demolition and alteration of currently deteriorated structures that are on the County's Heritage Resources Inventory, implementation of the proposed Preserve Plan includes rehabilitating several of the on-site structures (including listed structures), as well as the cultural landscape. Implementation of the No Alma College Rehabilitation Alternative would appear to avoid a significant impact of the proposed project by avoiding demolition of County-listed structures; however, continued deterioration of those structures and the other historic structures on the site would result in an overall *Greater* impact than the proposed project because no rehabilitation of existing historic resources would occur and further impacts would occur as historic structures continue to deteriorate under the influences of time, weather, and seismic activity. Moreover, the public would not gain access to any historic structures nor benefit from future interpretation of the resources.
- ▲ **Geology and Soils.** Similar to the proposed project, the No Alma College Rehabilitation Alternative would involve implementation of BMPs to reduce existing levels of erosion. New septic tanks would be included that would meet County Code requirements. Also new structures would be constructed at the Bear Creek Stables site similar to the proposed project, which would be required to meet CBC requirements for seismic safety. However, the No Alma College Rehabilitation Alternative would not include stabilization of existing structures at the former Alma College site. These structures would continue to be exposed to seismic activity and continued deterioration associated with time and weather, and no occupancy would occur and no public access would be granted near these structures. The proposed project would result in less-than-significant impacts associated with seismic hazards by complying with CBC. By comparison, the No Alma College Rehabilitation Alternative restricts public access near these structures and avoids potential for exposure to seismic hazard risk. Therefore, the impact associated with the No Alma College Rehabilitation Alternative would be *Similar*.
- ▲ **Greenhouse Gas Emissions.** The No Alma College Rehabilitation Alternative would not include opening the former Alma College site to the public and would include no special events at the former Alma College site. This alternative would generate less traffic than the proposed project. Implementation of the proposed project would generate some GHG emissions, but would not exceed the Bay Area Air Quality Management District GHG threshold. However, implementation of the No Alma College Rehabilitation Alternative would generate slightly fewer GHG emissions; therefore, the No Project Alternative would result in *Slightly Less* impact related to GHG.
- ▲ **Hazards and Hazardous Materials.** The No Alma College Rehabilitation Alternative involves no additional use or transport of hazardous materials compared to the proposed project. Existing structures at the former Alma College site that include materials containing asbestos, lead, and other hazardous materials would not be demolished. However, these materials may be present in the structures proposed for demolition at Bear Creek Stables. The proposed project includes mitigation measures to reduce impacts related to hazards and hazardous materials, and the No Alma College Rehabilitation Alternative would require the same mitigation measures. Overall, the impact of the No Alma College Rehabilitation Alternative is *Similar* to the proposed project.
- ▲ **Hydrology and Water Quality.** Implementation of the No Alma College Rehabilitation Alternative would result in construction of most of the components identified under the proposed project with the

exception of rehabilitation of the former Alma College site and associated facilities (including parking area and restrooms). Overall, the ground disturbance is similar between this alternative and the proposed project. Furthermore, similar to the proposed project, the No Alma College Rehabilitation Alternative would include BMPs and other design features to reduce existing erosion. Water quality impacts associated with the No Alma College Rehabilitation Alternative would be *Similar* to the proposed project.

- ▲ **Land Use.** Similar to the proposed project, the No Alma College Rehabilitation would not include any land use changes or features that would divide an established community or conflict with local planning policies. Therefore, impacts associated with Land Use would be *Similar* between the No Alma College Rehabilitation Alternative and the proposed project.
- ▲ **Noise.** Noise generated by the No Alma College Rehabilitation Alternative differs from the project only because it does not include demolition or construction activities associated with the former Alma College site. The No Alma College Rehabilitation Alternative would, overall, generate slightly less noise because of the lack of rehabilitation construction. Overall, the No Alma College Rehabilitation Alternative would result in *Slightly Less* noise impact than the proposed project.
- ▲ **Traffic.** The No Alma College Rehabilitation Alternative would not include opening the former Alma College site to the public and would include no special events at the former Alma College site. This alternative would generate less traffic than the proposed project. By comparison the proposed project would generate a minor amount of traffic and would result in less-than-significant traffic impact. The No Alma College Rehabilitation Alternative would also result in a less-than-significant impact. Therefore, overall the impact associated with the No Alma College Rehabilitation Alternative would be *Similar* to the proposed project.
- ▲ **Utilities.** The No Alma College Rehabilitation Alternative would generate a similar demand for water compared to the proposed project. The water supply scenario would not change under the alternative. Therefore, impacts related to water supply would be *Similar* to the proposed project.

6.4.3 No Special Events Alternative

Under the proposed project, weddings or other special events held at the former Alma College site would accommodate up to 250 guests. In addition, it is anticipated that one to two events per year with 250 people each would be held on weekends at Bear Creek Stables. A weekend with two special events would result in nearly double the number of auto trips compared to an entire week of normal operation of the proposed Preserve Plan.

Under the No Special Events Alternative, all proposed features of the Preserve Plan would be implemented except for the special events that are currently proposed to occur at Bear Creek Stables and the former Alma College site. This alternative would reduce impacts in issue areas that are affected largely by trip generation. For all other environmental issue areas, this alternative is expected to result in similar impacts compared to the proposed project because the construction intensity, disturbance area, and overall facility operation (aside from the special events) would be similar to the proposed project. Therefore, the following discussion will focus on the following environmental issue areas: air quality, greenhouse gas emission, noise, and traffic.

- ▲ **Air Quality.** Implementation of the No Special Events Alternative would generate fewer vehicle trips compared to the proposed project. However, the reduction in trips would likely not be substantial because special events would likely only occur a few times per year. In addition, air quality impacts associated with operation of the proposed project are considered less than significant. Therefore, implementation of the No Special Events Alternative would result in *Slightly Less* impact than the proposed project.
- ▲ **Greenhouse Gas Emissions.** Similar to Air Quality, the slight reduction in vehicle trips associated with the No Special Events Alternative (compared to the proposed project) would result in a slight decrease in

GHG emissions. Operation of the proposed Preserve Plan would result in a less-than-significant impact with respect to GHG emissions. Therefore, implementation of the No Special Events Alternative would result in *Slightly Less* impact than the proposed project.

- ▲ **Noise.** The No Special Events Alternative would generate fewer vehicle trips compared to the proposed project. Operation of the proposed Preserve Plan would result in a less-than-significant impact with respect to increases in roadway noise. Therefore, implementation of the No Special Events Alternative would result in *Slightly Less* impact than the proposed project.
- ▲ **Traffic.** Implementation of the No Special Events Alternative would generate fewer vehicle trips compared to the proposed project. However, the reduction in trips would likely not be substantial because special events would likely only occur a few times per year. The proposed project would generate a minor amount of traffic and would result in less-than-significant traffic impact. The traffic-related impact would be *Similar* to the proposed project.

Table 6-1 summarizes the environmental analyses provided above for the project alternatives.

Table 6-1 Comparison of the Environmental Impacts of the Alternatives in Relation to the Proposed Project				
Environmental Topic	Proposed Project	No Project	No Alma College Rehabilitation	No Special Events
Aesthetics	LTS	Greater	Slightly Greater	Similar
Air Quality	LTSM	Slightly Less	Slightly Less	Slightly Less
Biological Resources	LTSM	Slightly Less	Similar	Similar
Cultural Resources	SU	Greater	Greater	Similar
Geology and Soils	LTS	Similar	Similar	Similar
Greenhouse Gas Emissions	LTS	Slightly Less	Slightly Less	Slightly Less
Hazards and Hazardous Materials	LTSM	Slightly Less	Similar	Similar
Hydrology and Water Quality	LTSM	Slightly Greater	Similar	Similar
Land Use	LTS	Similar	Similar	Similar
Noise	LTSM	Slightly Less	Slightly Less	Slightly Less
Traffic	LTSM	Slightly Less	Similar	Similar
Utilities	LTS	Similar	Similar	Similar

Source: Ascent Environmental 2015

Notes: NI=No Impact LTS = Less Than Significant Impact LTSM = LTS with Mitigation SU = Significant and Unavoidable

Table 6-2 identifies which project objectives are met by the alternatives described above. As shown in Table 6-2, the No Project Alternative meets few of the project objectives. The No Alma College Rehabilitation Alternative meets all of the project objectives with the exception of the objective relating to rehabilitating Alma College, which is a key objective. The No Special Events Alternative meets all of the project objectives.

Table 6-2 Objectives Achieved by Project Alternatives			
Project Objectives	Objective Met?		
	No Project	No Alma College Rehabilitation	No Special Events
Allow general public access and enhance recreational opportunities in the Preserve;	No	Yes	Yes
Provide low-impact, high-value site-sensitive interpretation and education activities;	No	Yes	Yes
Expand opportunities for people with diverse physical abilities to enjoy the Preserve;	No	Yes	Yes

Table 6-2 Objectives Achieved by Project Alternatives			
Project Objectives	Objective Met?		
	No Project	No Alma College Rehabilitation	No Special Events
Provide regional and local trail connections;	No	Yes	Yes
Actively involve the public in the use and management of the Preserve;	No	Yes	Yes
Maximize public benefits of Bear Creek Stables by broadening public access and use of the facility;	No	Yes	Yes
Increase the acreage of protected habitat and connectivity to wildlife corridors;	No	Yes	Yes
Protect habitats that support diverse biological resources, are unique, or are important for the conservation of rare, threatened and endangered species;	Yes	Yes	Yes
Protect native wildlife;	Yes	Yes	Yes
Repair and monitor ecologically damaged and disturbed areas;	No	Yes	Yes
Protect waterways and associated natural lands to maintain water quality, watershed function, and healthy aquatic habitat;	Yes	Yes	Yes
Protect and interpret significant historical and cultural resources;	No	No	Yes
Within MROSD's basic mission, rehabilitate the former Alma College site so it can be integrated into the Preserve, while respecting the site's history, character and cultural landscape;	No	No	Yes
Maintain trails and facilities to protect the natural environment and provide for a quality visitor experience;	No	Yes	Yes
Address environmental hazards;	No	Yes	Yes
Reduce wildfire risk;	No	Yes	Yes
Ensure that all leases, easements, access agreements, and other legal arrangements are consistent with Preserve Plan goals and MROSD's mission.	No	Yes	Yes
Source: Ascent Environmental 2015			

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Special Events Alternative is the environmentally superior alternative. It would result in a slight reduction in impacts related to areas air quality, greenhouse gas emission, and noise without increasing any environmental impacts compared to the proposed project. However, none of the slight differences would alter the significance conclusions identified for these impacts. Although the No Project and No Alma College Rehabilitation Alternative result in slight reductions to a broader range of impacts than the No Special Events Alternative, both of these alternatives have the potential to result in greater “inadvertent” impacts than the proposed project with respect to the historic structures at the former Alma College site. Although the proposed project includes demolition of currently compromised structures that are on the County’s Heritage Resource Inventory, implementation of the proposed project focuses on rehabilitation of some key structures (also listed on the County’s Inventory), enhancement of many of the culturally defining features of the site’s history, and opening the enhanced and rehabilitated site to public access. While on the surface, implementation of the No Project Alternative and the No Alma College Rehabilitation Alternative might appear to avoid a significant impact of the proposed project by avoiding demolition of County-listed structures; further deterioration of those structures under both of these alternatives would likely ultimately result in an overall greater impact than the proposed project because no rehabilitation of existing historic resources would occur, no enhancement of culturally defining features would occur, and further impacts would occur as historic structures continue to deteriorate under the influences of time, weather, and seismic activity.

The No Special Events Alternative meets all of the project objectives.

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Linda Leeman Senior Wildlife Biologist
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Jessica Babcock Environmental Planner
Alta Cunningham Architectural Historian
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Gary Black President

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Alma Du Solier Project Manager
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