PUBLIC REVIEW DRAFT
ENVIRONMENTAL IMPACT REPORT

Los Gatos Creek Watershed Maintenance Program

State Clearinghouse # 2016032080

PREPARED FOR

County of Santa Clara

March 24, 2017
Los Gatos Creek Watershed Maintenance Program

Public Review Draft Environmental Impact Report

State Clearinghouse # 2016032080

Prepared For
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March 23, 2017

This document was produced on recycled paper.
Ladies and Gentleman:

SUBJECT: LOS GATOS CREEK WATERSHED MAINTENANCE PROGRAM DRAFT ENVIRONMENTAL IMPACT REPORT (SCH# 2016032080) FILE NO. 10256-14Z-16EIR

The enclosed Draft Environmental Impact Report (DEIR) has been prepared to evaluate the potential environmental impacts of the project described below:

The project is the San Jose Water Company (SJWC) Los Gatos Creek Watershed Maintenance Program. The watershed is defined as the area from the confluence of Trout Creek and Los Gatos Creek north of the Lexington Reservoir Dam to the headwaters of Los Gatos Creek to the southeast. Figure 1 shows the program area location. Figure 2 is a larger scale map of the upper Los Gatos Creek Watershed, highlighting SJWC facilities included in the program area. The proposed program has been prepared to provide guiding policies, specific direction on approach, and regulatory authorization for routine reservoir, stream, and intake facility maintenance activities. The proposed program (including the Los Gatos Creek Watershed Maintenance Program Manual and this EIR) is intended to cover a 10-year planning period from 2016 through 2026.

Your comments regarding the significant environmental effects of this project and the adequacy of the DEIR are welcome. Written comments, submitted to the Santa Clara County Planning Office by 5:00 p.m., May 12, 2017, will be included in the Final EIR. Please address comments to:

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Sincerely,

Manira Sandhir, Principal Planner, AICP
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CEQA REQUIREMENTS

CEQA Guidelines section 15123 requires an EIR to contain a brief summary of a proposed project and its consequences. The summary identifies each significant effect and the proposed mitigation measures and alternatives to reduce or avoid that effect; areas of controversy known to the lead agency; and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

PROPOSED PROJECT

Location and Setting

The proposed program area is the upper Los Gatos Creek Watershed from the confluence of Trout Creek and Los Gatos Creek (elevation 560 feet above sea level) north of the Lexington Reservoir dam, to the headwaters of Los Gatos Creek to the southeast. The proposed program area includes the specific SJWC facilities on tributaries to Los Gatos Creek that require maintenance.

The primary tributary creeks of the upper watershed join the main stem of Los Gatos Creek at various locations across the watershed. The Lexington Reservoir is positioned in the main lower valley of the upper watershed, with a north-south orientation. This reservoir is the receiving water body for Beardsley Creek (also known as Lyndon Canyon Creek), Briggs Creek, and Aldercroft Creek on the west side of the lake and Limekiln, Cavanee (also known as Soda Springs Canyon), and Hendry's creeks on the east side of the lake. Hooker Gulch joins Los Gatos Creek upstream of the Lexington Reservoir.
**Program Description**

The County of Santa Clara (County) has prepared this draft environmental impact report (DEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the San Jose Water Company (SJWC) proposed Los Gatos Creek Watershed Maintenance Program (proposed maintenance program or the program). The SJWC has submitted a County Planning Development Application for Grading Approval for maintenance activities at the Hooker Gulch Intake Facility, a component of the larger Los Gatos Creek Watershed Maintenance Program. This DEIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and CEQA Guidelines (California Code of Regulations Title 14, § 15000 et seq.). The Los Gatos Creek Watershed Maintenance Program is the project for this CEQA analysis.

The proposed program has been prepared to provide guiding policies, specific direction on approach, and regulatory authorization for routine reservoir, stream, and intake facility maintenance activities. The proposed program (including the Los Gatos Creek Watershed Maintenance Program Manual and this EIR) is intended to cover a 10-year planning period from 2016 through 2026. The manual and EIR are meant to be read as companion volumes. The EIR references or summarizes information presented in the manual when appropriate to avoid repeating information. The reader is encouraged to review the Manual, included in this document as Appendix A, while reviewing the EIR. Specifically, program specific Best Management Practices (BMPs) are referred to often in Section 3.0 Environmental Setting, Impacts, and Mitigation Measures.

**Summary of Impacts and Mitigation Measures**

This draft EIR identifies significant or potentially significant environmental impacts in several areas as identified below. The impacts are presented in a summarized format in Table S-1, Significant Impacts and Mitigation Measure Summary, with summarized text of the mitigation measures. The full text of the environmental setting, project analysis, and impacts and the mitigation measures can be found in Section 3.0 Environmental Setting, Impacts, and Mitigation Measures.

**Significant Project Impacts**

Program-level significant impacts are anticipated in the following areas:

- Biological Resources (impacts to special-status species, habitats).
### Table S-1  Significant Impacts and Mitigation Measure Summary

<table>
<thead>
<tr>
<th>Area of Concern</th>
<th>Significant Impact</th>
<th>Mitigation #</th>
<th>Mitigation Measure Summary</th>
<th>Residual Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Potential Impacts on California Red-Legged Frogs</td>
<td>MM-BIO-1</td>
<td>Implement avoidance and minimization measures from the USFWS Programmatic Biological Opinion.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological</td>
<td>Potential impacts to California Red-Legged Frogs or western pond turtle.</td>
<td>MM-BIO-2</td>
<td>Conduct one daytime survey for these species no more than 48 hours before the onset of maintenance activities.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological</td>
<td>Potential Impacts on California Red-Legged Frogs</td>
<td>MM-BIO-3</td>
<td>Compensate for impacts on the California red-legged frog resulting from the proposed program.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological</td>
<td>Potential impacts to western pond turtle.</td>
<td>MM-BIO-4</td>
<td>When work in flowing streams is unavoidable, streamflow will be diverted around the work area by construction of a temporary dam or bypass.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological</td>
<td>Potential impacts to western pond turtle.</td>
<td>MM-BIO-5</td>
<td>Before a work area is dewatered, fish and other aquatic vertebrates will be captured and relocated to avoid injury and mortality and to minimize disturbance.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological</td>
<td>Potential impacts to riparian habitat.</td>
<td>MM-BIO-6</td>
<td>Reseed exposed soil following specific procedures.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Area of Concern</td>
<td>Significant Impact</td>
<td>Mitigation #</td>
<td>Mitigation Measure Summary</td>
<td>Residual Impact</td>
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</tr>
<tr>
<td>Biological Resources</td>
<td>Potential impacts to wetlands.</td>
<td>MM-BIO-7</td>
<td>Create or restore impacts on wetlands.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>Potential impacts to nesting birds.</td>
<td>MM-BIO-8</td>
<td>Conduct activities outside of nesting season or conduct focused surveys and follow measures to limit potential impacts.</td>
<td>Less than Significant</td>
</tr>
</tbody>
</table>

*Source: EMC Planning Group 2017*
**Significant Cumulative Effects**

Program-level significant cumulative impacts are anticipated in the following areas:

- Biological Resources (impacts to special-status species, habitats).

**Significant Unavoidable Impacts**

No significant and unavoidable impacts would result from the proposed program.

**Growth Inducing Effects**

The proposed program would not involve new development that could directly induce population growth, and it would not involve the extension of infrastructure that could indirectly induce population growth. The program would not involve construction of new housing or create a demand for additional housing, such as through commercial development. Therefore, the program would not have growth inducing effects.

**Areas of Controversy**

CEQA Guidelines section 15123(b)(2) requires an EIR summary to identify areas of controversy known to the lead agency including issues raised by agencies and the public. Although the lead agency is not aware of any controversial issues, potential issues were raised by other agencies and members of the public during the project’s NOP process. Letters are included in Appendix B, Notice of Preparation and Responses.

**Summary of Alternatives**

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the proposed program that could feasibly attain most of the objectives of the proposed program while reducing or eliminating one or more of the proposed program’s significant effects. The range of alternatives considered must include those that offer substantial environmental advantages over the proposed program and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.
The following alternative has been evaluated for its feasibility and ability to achieve most of the proposed program objectives while avoiding, reducing, or minimizing significant impacts identified for the proposed program:

1. No Project Alternative

2. Water Supply Facility Maintenance Alternative

**Alternative 1 - No Project Alternative**

Under this alternative, SJWC would not implement an integrated and comprehensive maintenance program to guide and direct maintenance activities for its intake facilities, impoundments, access roads, culverts, and other facilities under its maintenance authority. Rather, maintenance practices would be implemented on a project-by-project and as-needed basis. Routine maintenance that currently occurs, including vegetation management activities at SJWC dams and reservoirs, access road maintenance, minor fence repairs, and fire fuel reduction, may occur on an as-needed basis. However, maintenance activities involving ground disturbance (e.g., culvert repair and new culvert installation) would not be implemented.

While some activities under the No Project Alternative would be similar to those under the proposed program, the construction-related impacts (e.g., emissions and vehicle traffic) associated with the No Project Alternative would be substantially less severe than the proposed program. The SJWC maintenance activities conducted under the No Project Alternative would, however, not benefit from the use of a consistent set of BMPs or mitigation approaches. In addition, other impacts considered more severe than the proposed program may occur. For instance, sediment and debris would accumulate behind the weirs and the intake gates, which would restrict operation of SJWC’s water supply system and potentially create flood hazards and safety risks for areas downstream of the intakes.

**Alternative 2: Water Supply Facility Maintenance Alternative**

**Characteristics of this Alternative**

Alternative 2, Water Supply Facility Maintenance Alternative, would involve conducting routine maintenance activities at SJWC water supply facilities only. Maintenance activities along access roads, including culvert repair and replacement, and fire fuel load reduction activities would not occur under this alternative. This alternative would meet several, but not all, of the proposed program objectives related to water supply, flood control, and habitat protection in creek systems. It would not meet proposed program objectives related to preventing roadway flooding, providing fire safety, and restricting wildfire movement in the watershed.
Routine maintenance at water supply facilities, including sediment removal, burrow management, vegetation management within a 200-foot radius of water supply facilities, and flashboard and outlet gate maintenance, would occur as described for the proposed program.

This alternative would not include the culvert repair and replacement activities along any of the private access roads in the watershed, including the John Nicholas Trail, Cathermola Road, Sears Road, Ellege Road, and Hooker Bypass Road. Existing erosion at culvert inlets, outlets, and road gullies would continue to contribute sediment to downstream waters. Road washouts and flooding would continue to restrict access to maintain water supply facilities during the winter season.

By not conducting maintenance activities along access and service roads, Alternative 2 could also eventually reduce SJWC’s ability to conduct maintenance at its water supply facilities because access may be constrained or limited over time without road and culvert maintenance.

The proposed program includes fire fuel maintenance activities within a 50-foot area around watershed access roads maintained by SJWC. These activities include removal of dead, decaying woody debris, fallen trees, and hazard trees; thinning, pruning, and removal of snags and ladder fuels; cutting of firebreaks; and weed abatement. Alternative 2 would not include these maintenance activities and, therefore, would not include the fire protection and management benefits of these activities.

**Environmentally Superior Alternative**

The proposed program is considered to be the environmentally superior alternative. Compared to the other alternatives, it provides the most appropriate balance among protecting the quality of SJWC’s water supplies, protecting the functional and structural integrity of SJWC’s facilities, protecting the safety and reliability of roadways used to access SJWC’s facilities, and addressing other short- and long-term impacts associated with the proposed maintenance activities.

The Water Supply Facility Maintenance Alternative was not selected as the environmentally superior alternative because, although this alternative would substantially reduce potential construction-related impacts on biological and cultural resources by avoiding access road maintenance, this alternative would potentially increase occurrences of flooding, erosion, and fire hazards throughout the watershed. By not repairing roadside culverts, roadside drainage issues could worsen and cause flooding and erosion in the watershed. Without vegetation and fuel management activities along access roads, fire hazard risks would also continue to worsen. These conditions would reduce SJWC’s access to water supply facilities and threaten the continued reliability and quality of water supply for the service area.
The No Project Alternative was not selected as the environmentally superior alternative because, although this alternative would provide a substantial reduction in the maintenance of SJWC facilities and structures and thereby reduce construction-related impacts (e.g., traffic, noise and emissions), maintenance would not necessarily be conducted in a timely manner. Sediment would continue to accumulate behind SJWC’s intake facilities, which could potentially increase flood hazards and safety risks. By not timely repairing roadside culverts, roadside drainage issues could worsen and cause flooding and erosion. Without vegetation and fuel management activities, fire hazard risks would also continue to worsen. Lastly, maintenance activities might not be implemented along with a comprehensive mitigation approach and consistent set of BMPs and mitigation measures as identified in this EIR.
1.1 Introduction

The County of Santa Clara (hereinafter “County”) has prepared this draft environmental impact report (DEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the San Jose Water Company (SJWC) proposed Los Gatos Creek Watershed Maintenance Program (proposed maintenance program or the program). The SJWC has submitted a County Planning Department Application for Grading Approval for maintenance activities at the Hooker Gulch Intake Facility, a component of the larger Los Gatos Creek Watershed Maintenance Program. This DEIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and CEQA Guidelines (California Code of Regulations Title 14, § 15000 et seq.). The Los Gatos Creek Watershed Maintenance Program is the project for this CEQA analysis.

San Jose Water Company

Founded in 1866, the SJWC provides high-quality potable water to more than one million people in Santa Clara County, including the communities of San Jose, Los Gatos, Monte Sereno, Saratoga, Campbell, and Cupertino. SJWC also provides services to other water utilities, including operations and maintenance support, billing, and backflow testing. SJWC's water supply comprises a combination of surface water from the Los Gatos Watershed and Saratoga Creek Watershed, groundwater from aquifers in the Santa Clara Valley, and treated imported surface water purchased from the Santa Clara Valley Water District (SCVWD). SJWC's operating goal is to provide high-quality water to its customers.
1.0 Introduction

**Proposed Program Background**

To support its surface supply sources, SJWC operates and maintains several facilities and manages several thousand acres of watershed lands within the Los Gatos Creek Watershed. SJWC manages five reservoirs (impoundments), seven water intake structures, several access roads, several roadside culverts, and approximately 6,000 acres of land. SJWC developed the Los Gatos Creek Watershed Maintenance Program Manual in 2015 to describe various routine maintenance activities conducted in the Los Gatos Creek Watershed. This manual is included in Appendix A and includes descriptions of SJWC facilities, natural resources at SJWC facilities and in the watershed, and programmatic guidance to avoid and minimize potential environmental impacts when conducting routine maintenance work.

1.2 Organization of the Report

This environmental impact report (EIR) is organized into the following sections:

**Summary**

The summary, presented earlier, provides a brief summary of the proposed program actions, significant environmental effects with proposed mitigation measures and alternatives, areas of controversy known to the lead agency, and issues to be resolved including the choice among alternatives and whether or how to mitigate significant effects.

1.0 Introduction

The introduction presents the organization of this EIR, purpose of preparing the report, standards used in the environmental analysis, an overview of the EIR’s notice of preparation, and terminology used in the EIR.

2.0 Project Description

The project description chapter presents the location of the program area, a statement of objectives sought by the program proponent, a general description of the maintenance program’s environmental characteristics, and a description of the intended uses of the EIR.


3.0 Environmental Effects

The environmental effects chapter presents the local and regional setting as applicable to each environmental topic area addressed, analysis of the environmental effects of the proposed program, and mitigation measures to avoid or reduce environmental effects. Topics addressed in detail in this EIR are aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, public services and utilities, recreation, and traffic. Effects for agricultural resources, land use and planning, population, housing, and mineral resources were not found to be significant, and are addressed briefly in a separate section.

4.0 Other CEQA

This section of the EIR discusses additional environmental implications of the proposed project as required by CEQA. The topics discussed in this section include the proposed program’s consistency with applicable plans, growth-inducing impacts, and significant unavoidable environmental effects.

5.0 Cumulative Impacts

This section presents the cumulative scenario and evaluates whether the proposed program’s contribution to cumulative impacts is considerable.

6.0 Alternatives

The alternatives section presents the environmental effects of variations of the proposed program or alternatives to the proposed program.

7.0 References

This final section provides the sources referenced in the EIR, a list of persons contacted, and a list of report preparers.

1.3 Purpose and Standards

Authorization and Purpose

EIRs are authorized by Public Resources Code Section 21000 et seq., which establishes CEQA. CEQA was passed by the California legislature in 1970 to establish protocols for environmental review of proposed projects, and has been amended numerous times since. The Office of Planning and Research developed the CEQA Guidelines to assist in implementing CEQA. The County of Santa Clara (County) is the lead agency for this EIR.
In accordance with CEQA Guidelines Section 15050, if a project is to be carried out or approved by more than one public agency, one public agency shall be responsible for preparing an EIR, and is referred to as the lead agency. The lead agency is typically the agency that will carry out the project or that has the greatest responsibility for supervising or approving the project.

**Preparation Standards and Methods**

An EIR is an informational document that will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR has been prepared by EMC Planning Group (hereinafter "consultant") under contract to the lead agency in accordance with CEQA and its implementing guidelines, as those were in effect at the time the EIR was released for public review. This EIR has been prepared using available information from private and public sources noted herein, as well as information generated by the consultant through field investigation. This EIR will be used to inform public decision-makers and their constituents of the environmental impacts of the proposed project.

This EIR describes and evaluates the existing environmental setting of the program area and surrounding areas, discusses the characteristics of the proposed program, identifies environmental impacts associated with the proposed program, and provides feasible mitigation measures that can be implemented to reduce or avoid identified adverse environmental impacts. This EIR also evaluates reasonable alternatives to the proposed program.

If an EIR identifies a significant adverse impact, the lead agency may approve a project only if it finds that mitigation measures have been required to reduce the impact's significance, or that such mitigation is infeasible for specified social, economic, and/or other reasons (Public Resources Code section 21081). The lead agency may not omit from the project conditions a mitigation measure associated with a project impact identified in the EIR as significant, unless it makes specific findings regarding the omission.

This EIR is an objective public disclosure document that takes no position on the merits of a proposed project. Therefore, the findings of this EIR do not advocate a position "for" or "against" a proposed project. Instead, this EIR provides information on which decisions about the proposed program can be based. The EIR has been prepared according to the professional standards and practices of the EIR participants' individual disciplines and in conformance with the legal requirements and informational expectations of CEQA and its implementing guidelines.
An initial project description and environmental impact analysis for the proposed program was prepared by Horizon Water and Environment (2015) on behalf of SJWC. This documentation was submitted to the County as an application component. This EIR has been conducted as a peer review for adequacy of the proposed program’s initial environmental impact analysis.

1.4 CEQA Process

Notice of Preparation

CEQA Guidelines section 15375 requires the lead agency to prepare a notice of preparation (NOP) to solicit agencies’ input on the scope of the EIR. An NOP is described as:

...a brief notice sent by the lead agency to notify the responsible agencies, trustee agencies, and involved federal agencies that the lead agency plans to prepare an EIR for the project. The purpose of the notice is to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR.

The lead agency has determined that the proposed program may result in significant adverse environmental effects, as defined by CEQA Guidelines section 15064. Therefore, the lead agency has had this EIR prepared to evaluate the potentially significant adverse environmental impacts of the proposed program.

Based upon the decision to prepare an EIR, the lead agency prepared and distributed an NOP for a 30-day comment period from March 29, 2016 to April 27, 2016 in accordance with CEQA Guidelines section 15082.

The NOP and responses to the NOP received from responsible agencies and members of the public are contained in Appendix B. As part of the early consultation process and pursuant to CEQA Guidelines section 15082(c)(1) regarding projects of statewide importance and section 15083 regarding early public consultation, a scoping meeting was held at the United Methodist Church of Los Gatos on April 20th from 6 pm to 8 pm. Several members of the public attended the meeting and questions and discussion focused on defining characteristics of the proposed program.

Public Review and Project Consideration

The DEIR will be available for public comment during a 30-day review period. Once the public review period is closed, a Final EIR (FEIR) will be prepared. The FEIR will incorporate this DEIR by reference. It will contain all comments submitted on this DEIR (including those made at public meetings), responses to those comments, and any revisions to the text of this DEIR.
Written and oral comments received in response to the DEIR will be addressed in the Responses to Comments section of the FEIR. Together with the DEIR and any related changes to the substantive discussion in the DEIR, these responses will constitute the FEIR. The FEIR, in turn, will inform the County’s exercise of its discretion as a lead agency under CEQA in deciding whether or how to approve the proposed program.

1.5 Terminology

Characterization of Impacts

This EIR uses the following terminology to denote the significance of environmental impacts:

- “No impact” means that no change from existing conditions is expected to occur;
- A “less-than-significant impact” is an adverse impact, but would not cause a substantial adverse change in the physical environment, and no mitigation is required;
- A “significant impact” or “potentially significant impact” would, or would potentially, cause a substantial adverse change in the physical environment, and mitigation is required;
- A “less-than-significant impact with implementation of mitigation measures” means that the impact would cause no substantial adverse change in the physical environment if identified mitigation measures are implemented;
- A “significant and unavoidable impact” would cause a substantial change in the physical environment and cannot be avoided if the project is implemented; mitigation may be required, but will not reduce the impact to less than significant levels; and
- A “beneficial impact” is an impact that would result in a decrease in existing adverse conditions in the physical environment if the project is implemented.

Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>Assembly Bill</td>
</tr>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
</tr>
<tr>
<td>AFY</td>
<td>Acre Feet per Year</td>
</tr>
<tr>
<td>APN</td>
<td>Assessor’s Parcel Number</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>AQMP</td>
<td>Air Quality Management Plan</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Bay Area Air Quality Management District</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>C₂F₆</td>
<td>Hexafluoroethane</td>
</tr>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
</tr>
<tr>
<td>CalEEMod</td>
<td>California Emissions Estimator Model</td>
</tr>
<tr>
<td>Cal EPA</td>
<td>California Environmental Protection Agency</td>
</tr>
<tr>
<td>CalFire</td>
<td>California Department of Forestry and Fire Protection</td>
</tr>
<tr>
<td>CDFW</td>
<td>California Department of Fish and Wildlife</td>
</tr>
<tr>
<td>CARB</td>
<td>California Air Resources Board</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CF₄</td>
<td>Tetrafluoromethane</td>
</tr>
<tr>
<td>CFC</td>
<td>Chlorofluorocarbon</td>
</tr>
<tr>
<td>cfs</td>
<td>Cubic Foot Per Second</td>
</tr>
<tr>
<td>CH₄</td>
<td>Methane</td>
</tr>
<tr>
<td>CIP</td>
<td>Capital Improvement Plan</td>
</tr>
<tr>
<td>CNPS</td>
<td>California Native Plant Society</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>CO₂e</td>
<td>Carbon Dioxide Equivalent</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
<tr>
<td>CRHR</td>
<td>California Register of Historical Resources</td>
</tr>
<tr>
<td>dbh</td>
<td>Diameter at Breast Height</td>
</tr>
<tr>
<td>DSOD</td>
<td>Division of Safety of Dams</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PG&amp;E</td>
<td>Pacific Gas &amp; Electric Company</td>
</tr>
<tr>
<td>PM</td>
<td>Particulate Matter</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>Fine Particulate Matter 2.5 micrometers or less</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>Particulate Matter 10 microns or less</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per Million</td>
</tr>
<tr>
<td>ROG</td>
<td>Reactive Organic Gases</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>SFBAAB</td>
<td>San Francisco Bay Area Air Basin</td>
</tr>
<tr>
<td>SB</td>
<td>Senate Bill</td>
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<tr>
<td>SCCFD</td>
<td>Santa Clara County Fire Department</td>
</tr>
<tr>
<td>SCVWD</td>
<td>Santa Clara County Water District</td>
</tr>
<tr>
<td>SF$_6$</td>
<td>Sulfur hexafluoride</td>
</tr>
<tr>
<td>SJWC</td>
<td>San Jose Water Company</td>
</tr>
<tr>
<td>SO$_2$</td>
<td>Sulfur Dioxide</td>
</tr>
<tr>
<td>SOI</td>
<td>Sphere of Influence</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Storm Water Pollution Prevention Plan</td>
</tr>
<tr>
<td>SWRCB</td>
<td>State Water Resources Control Board</td>
</tr>
<tr>
<td>TAC</td>
<td>Toxic Air Contaminant</td>
</tr>
<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>USFWS</td>
<td>United States Fish and Wildlife Service</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geologic Survey</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
</tbody>
</table>
1.6 EIR Overview

Sections 3.1 through 3.13 of Chapter 3 describe the environmental resources and potential environmental impacts of the proposed program. Each section describes the existing environmental setting and background information for a particular resource topic to help the reader understand the conditions that could be affected by the program. In addition, each section in Chapter 3 includes a discussion of the criteria used to determine the significance levels of the proposed program’s environmental impacts. If appropriate, mitigation measures are identified to reduce, where possible, the adverse effects of significant impacts.

Significance of Environmental Impacts

According to the CEQA statutes and guidelines, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. For each environmental resource topic, significance criteria are identified to determine whether implementation of the project would result in a significant environmental impact when evaluated against the baseline condition, as described in the environmental setting. The significance criteria vary depending on the environmental resource topic. In general, effects can be either significant or potentially significant (exceed the threshold) or less than significant (do not exceed the threshold). In some cases, a significant impact will be identified as significant and unavoidable if no feasible mitigation measures are available that would reduce the impact to a less-than-significant level. If a project is subsequently approved despite identified significant impacts that would result from the project, CEQA requires the lead agency to prepare and adopt a statement of overriding considerations describing the social, economic, and other reasons for moving forward with the project despite its significant impacts.

Baseline Conditions

Under CEQA, the environmental setting or “baseline” serves as a gauge to assess changes to existing physical conditions that would occur as a result of a proposed project. According to State CEQA Guidelines, for purposes of an EIR, the environmental setting is generally the existing physical conditions at the project site or in the project area at the time the NOP is published.

It is important to note that certain activities that are part of the proposed program have been undertaken on an ongoing basis for some time. As such, these activities are considered a part of the baseline condition. The impact analysis in this DEIR focuses on new or different activities from the past activities that represent the baseline condition. Thus, the DEIR focuses on the incremental change or effects to baseline conditions resulting from the proposed program.
2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

San Jose Water Company is a private water purveyor providing potable water to more than one million people in Santa Clara County, including the communities of San Jose, Los Gatos, Monte Sereno, Saratoga, Campbell, and Cupertino. SJWC's water supply comprises a combination of surface water from the Los Gatos Creek Watershed and Saratoga Creek Watershed, groundwater from aquifers in the Santa Clara Valley, and treated imported surface water from the Santa Clara Valley Water District.

To support its surface water supply sources, the SJWC operates and maintains several facilities and manages several thousand acres of watershed lands within the upper Los Gatos Creek Watershed (watershed). SJWC manages five reservoirs, seven water intake structures, multiple access roads, roughly 100 roadside culverts, and approximately 6,000 acres of land in the watershed. The Los Gatos Creek Watershed Maintenance Program (maintenance program or program) was developed by SJWC to identify and improve long-term and ongoing facility maintenance and land management activities under SJWC direction in the watershed. The maintenance program is outlined in the Los Gatos Creek Water Maintenance Program Manual (SJWC and Horizon Water and Environment 2015), which describes the various routine maintenance activities conducted by SJWC in the watershed. The County of Santa Clara is acting as the Lead Agency under CEQA because SJWC has submitted to the Department of Planning Development an application for Grading Approval for maintenance activities at the Hooker Gulch Intake Facility, a component of the larger Los Gatos Creek Watershed Maintenance Program.

The maintenance program does not include maintenance for large construction projects contained in the SJWC's Capital Improvement Plan (such as improvements to the SJWC's Montevina Water Treatment Plant), maintenance work that would increase the water supply capacity of a facility beyond the designed capacity, maintenance activities that would alter the
designed flood conveyance capacity of a channel, emergency repair work, maintenance work conducted on non-SJWC private property in the watershed by other land owners, and maintenance work performed by other agencies in the watershed (such as Pacific Gas & Electric maintenance of their own facilities).

2.2 Program Location, Setting, Land Use

Location

The location of the program area is the upper Los Gatos Creek Watershed (herein after “the watershed” as defined in this project description and EIR) from the confluence of Trout Creek and Los Gatos Creek north of the Lexington Reservoir Dam to the headwaters of Los Gatos Creek to the southeast. However, more specifically, the program area where program activities would occur is the areas of specific SJWC facilities within the watershed that require periodic maintenance.

The Town of Los Gatos is located to the immediate north of the watershed, but there are no other major residential areas located adjacent to the watershed. State Route 17 passes through the watershed and is the only major roadway in the watershed. The watershed is entirely located in unincorporated Santa Clara County. Within the approximate 6,000 acre area watershed, SJWC owns ninety-five parcels and three other parcels are owned by Santa Clara County, where program activities may occur.

Figure 1, Los Gatos Creek Watershed, displays the entire Los Gatos Creek Watershed with the upper watershed highlighted. Figure 2, Upper Los Gatos Creek Watershed, is a larger scale map of the upper Los Gatos Creek Watershed, highlighting SJWC facilities included in the program area. Figures 3-7, SJWC Facility Locations A-E, provide more detail on SJWC facility locations.

Setting

The upper Los Gatos Creek Watershed is located in the northern portion of the central Santa Cruz Mountains, a range that extends from east of the Watsonville area to the northern end of the San Francisco Peninsula. The headwaters of the Los Gatos Creek Watershed extend approximately 11 miles southeast of the Town of Los Gatos. The upper Los Gatos Creek Watershed has a prominent, northwest-southeast trending ridgeline marking its southern boundary. This boundary and orientation are aligned with the regional tectonic structure, governed by the path of the San Andreas Fault, which cuts through the upper watershed. The southeastern watershed boundary comprises a ridge that links Mount Thayer (3,479 feet), Mount Umunhum (3,489 feet), and Loma Prieta Mountain (3,797 feet).
Figure 1

Los Gatos Creek Watershed

Los Gatos Creek Watershed Maintenance Program EIR
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Upper Los Gatos Creek Watershed

Los Gatos Creek Watershed Maintenance Program EIR

Figure 2

Source: Horizon Water and Environment 2016
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2.0 Project Description

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Figure 6

SJWC Facility Locations D

Los Gatos Creek Watershed Maintenance Program EIR

Source: Horizon Water and Environment 2016
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The primary tributary creeks of the upper watershed join the main stem of upper Los Gatos Creek, which drains to the Lexington Reservoir. The Lexington Reservoir is positioned in the lower valley of the upper Los Gatos Creek Watershed, with a north-south orientation. This reservoir is the receiving water body for Beardsley Creek (also known as Lyndon Canyon Creek), Briggs Creek, and Aldercroft Creek on the west side of the lake and Limekiln and Cavanee Creeks (also known as Soda Springs Canyon), and Hendry’s Creek on the east side of the lake. Hooker Gulch joins Los Gatos Creek upstream of the Lexington Reservoir.

**Land Use**

SJWC owns approximately 35 percent of the entire upper Los Gatos Creek Watershed lands (approximately 5,900 acres). Approximately 62 percent of watershed area is designated open space (approximately 10,679 acres) owned largely by the Midpeninsula Regional Open Space District, SCVWD, and Santa Clara County. The remaining three percent (approximately 500 acres) of the watershed area is owned privately. Figure 8, Upper Los Gatos Creek Watershed Land Ownership, displays land uses and ownership in the watershed.

Five small residential communities are present in the upper Los Gatos Creek Watershed: Aldercroft Heights, Holy City, Chemeketa Park, Lake Canyon, and Redwood Estates. Aldercroft Heights is a residential area with isolated homes on large lots. Nearby Chemeketa Park and Redwood Estates (on opposite sides of State Route 17) have higher density residences. Chemeketa Park includes about 150 homes and is accessed by State Route 17. Redwood Estates includes about 200 homes and is also accessed from State Route 17. Holy City is mostly abandoned and unoccupied, with only a few remaining buildings. Lake Canyon has 52 residences. The roads within this area are narrow and winding. Most residential parcels are not landscaped but retain the redwood forest land cover.

The watershed area is zoned for hillside and open space land uses (Santa Clara County 1994). Hillside land use is defined in the Santa Clara County General Plan (Policy LU-18) as follows:

> [M]ountainous lands unplanned or unsuitable for city development shall be preserved in an open space condition with uses which support and enhance a rural character, which protect and promote wise use of natural resources, and which avoid the risks imposed by natural hazards found in these areas.

Recreational land use is identified for a large portion of the watershed. As mentioned previously, 62 percent (approximately 10,679 acres) of the upper Los Gatos Creek Watershed is open space land owned by the Midpeninsula Regional Open Space District, SCVWD, and Santa Clara County, and a large portion of this area is available for recreational opportunities. Open space and park areas (shown in Figure 8, Upper Los Gatos Creek Watershed Land Ownership) include Lexington Reservoir, which is owned and operated by SCVWD; four open space
preserves operated by Midpeninsula Regional Open Space District (Bear Creek Redwoods Open Space Preserve, Felton Station Open Space Preserve, El Sereno Open Space Preserve, and the Sierra Azul Open Space Preserve); and Sanborn County Park, which is operated by the Santa Clara County Parks Department.

**Lexington Reservoir** is located east of State Route 17. Recreational activities at the reservoir are managed by the Santa Clara County Parks Department. Recreational activities include non-power or electric motor boating, picnicking, fishing, bicycling, jogging, and hiking. Gasoline-powered boats, swimming, and wading are not allowed in Lexington Reservoir because of its use for potable water supply.

**Bear Creek Redwoods Open Space Preserve** is located west of Lexington Reservoir along State Route 17. The preserve covers 1,432 acres and contains 10.3 miles of trails. Recreational activities include hiking and horseback riding (currently by permit only).

**Felton Station Open Space Preserve**, also located west of Lexington Reservoir, is owned and operated by Midpeninsula Regional Open Space District. Currently, this preserve is closed to the public.

**El Sereno Open Space Preserve** is located northwest of Lexington Reservoir. The preserve covers 1,415 acres and contains 7.4 miles of trails. Recreational activities include hiking, horseback riding, and bicycling. Portions of the preserve are open to dogs on leashes.

**Sierra Azul Open Space Preserve** is located east of Lexington Reservoir. This is the largest preserve owned and operated by Midpeninsula Regional Open Space District, covering 18,446 acres and containing 24.4 miles of trails. Recreational activities include hiking, horseback riding, bicycling, and dog walking.

**Sanborn County Park**, located northwest of Lexington Reservoir, is owned and operated by the Santa Clara County Parks Department. The park covers approximately 3,688 acres and contains more than 15 miles of trails. Recreational activities at Sanborn County Park include hiking, picnicking, camping, and fishing. The park contains an outdoor amphitheater, family campsites, and RV water and electricity hook-ups.

### 2.3 Program Goals and Objectives

**Program Goals**

The primary program goals are to:

- Protect the quality of SJWC’s source water supplies;
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- Maintain the structural and functional integrity of SJWC facilities; and
- Reduce reliance on imported water supplies.

**Program Objectives**

The following objectives are to be implemented to achieve the program goals:

- Maintain existing water impoundment, water supply intake, flood control, and roadway facilities in the watershed to perform their operational functions;
- Prevent roadway flooding, reduce safety hazards, and minimize potential threats to the structural integrity of roadways and facilities within the watershed by maintaining numerous culverts and clearing debris blockages at roadside culverts;
- Remove sediment at SJWC facilities in the watershed where sediment accumulation reduces functional capacity, reduces flow conveyance, or increases the flood hazard and safety risk;
- Consider, maintain, and where possible enhance and improve the habitat functions of creek systems near SJWC facilities in the watershed;
- Manage vegetation at SJWC facilities in the watershed to keep these facilities clear of debris and vegetation so that they can be operated in a manner that is consistent with the preservation of habitat functions of the creeks and channels;
- Manage vegetation at SJWC facilities to reduce fuel loads, protect facilities and structures, and disrupt the future movement of wildfires;
- Avoid and minimize potential impacts to the environment by using defined criteria and thresholds to guide when maintenance work is necessary; and
- Avoid and minimize potential impacts to habitats and special-status species by incorporating detailed appraisals of habitat, species, and resource conditions while developing maintenance plans.

### 2.4 Summary of Maintenance Program Activities

Table 1, Summary of Maintenance Program Activities, provides a summary of maintenance activities considered as components of the program.
Table 1  Summary of Maintenance Program Activities

<table>
<thead>
<tr>
<th>Program Facility</th>
<th>Maintenance Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoirs / Impoundments</td>
<td>Dam maintenance:</td>
</tr>
<tr>
<td></td>
<td>▪ Vegetation removal, weed cutting, herbicide spraying</td>
</tr>
<tr>
<td></td>
<td>▪ Repair damage from burrowing animals</td>
</tr>
<tr>
<td></td>
<td>▪ Repair dam hardware (pipes, valves, etc.)</td>
</tr>
<tr>
<td></td>
<td>Sediment and debris removal at the spillway, intakes, and outfalls</td>
</tr>
<tr>
<td></td>
<td>Access road maintenance</td>
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<tr>
<td>Water Supply Intakes</td>
<td>Sediment removal</td>
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<td></td>
<td>Debris removal</td>
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<tr>
<td></td>
<td>Flashboard repair</td>
</tr>
<tr>
<td></td>
<td>Intake gate repair</td>
</tr>
<tr>
<td></td>
<td>Vegetation maintenance (trimming, downed tree removal)</td>
</tr>
<tr>
<td>Roads, Culverts, Crossings</td>
<td>Sediment removal</td>
</tr>
<tr>
<td></td>
<td>Debris removal</td>
</tr>
<tr>
<td></td>
<td>Culvert repair</td>
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<tr>
<td></td>
<td>Vegetation maintenance (trimming, downed tree removal)</td>
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<td></td>
<td>Road maintenance (grading, gravel, paving)</td>
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<tr>
<td>Watershed Management</td>
<td>Providing fire-defensible space around facilities and structures</td>
</tr>
<tr>
<td></td>
<td>Cutting firebreaks</td>
</tr>
<tr>
<td></td>
<td>Fire fuel management</td>
</tr>
<tr>
<td>Minor Activities</td>
<td>Fence repairs</td>
</tr>
</tbody>
</table>

Source: Horizon Water and Environment 2016

2.5 PROGRAM FACILITIES

SJWC facilities within the watershed include five reservoirs (impoundments), seven water supply intake structures, a system of water distribution pipelines, multiple access roads, nearly 100 roadside culverts, and approximately 6,000 acres of land. Specific facilities that require routine and anticipated maintenance as part of the maintenance program are described below and their locations are identified in Figures 3-7, SJWC Facility Locations A-E, presented earlier. Figures 9-11, Facility Photos A-C, include photographs of SJWC impoundments, intakes, and culverts in the program area. Maintenance Manual Chapter 4, Resource Characterizations at Maintenance Facilities (Appendix A), provides a more complete description of the program facilities, including their physical setting and biological/habitat conditions.
Photo 1. Lake Williams (Nov. 2013).

Photo 2. Lake Elsman (Oct. 2013).


Source: Horizon Water and Environment 2013
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Photo 2. Hooker Intake Facility, looking downstream (May 2013).

Photo 3. Hendy Intake Facility, looking downstream with the flashboard dam removed (Dec. 2013).

Photo 4. Lower Cavanee Intake Facility, looking upstream with the sluice gate weir open (Dec. 2013).


Source: Horizon Water and Environment 2013

Figure 10

Facility Photos B

Los Gatos Creek Watershed Maintenance Program EIR
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Photo 2. Buried inlet at Culvert C10, north of Cathermola Road (May 2014).


Photo 4. Downslope erosion occurring at the outfall of Culvert M12, on the John Nicholas Trail (Dec. 2013).


Source: Horizon Water and Environment 2013
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**Impoundments**

SJWC owns five reservoirs within the watershed, as described below. All five of these impoundments are regulated by the California Department of Water Resources, Division of Safety of Dams (DSOD).

**Lake Williams**

Lake Williams is a three-acre reservoir immediately upstream of Lake Elsman that drains into the lake through a stream channel. SJWC owns Lake Williams and has a storage license for this water source. Lake Williams has a storage capacity of 51.5 million gallons (mg). As a result of a large fire in the watershed in 1961, Lake Williams mostly filled with sediment and has not provided substantial water storage since that time. No public access to this reservoir is allowed.

**Lake Elsman**

SJWC owns Lake Elsman and has a use and diversion license for this water source; no public access is allowed to this water storage reservoir. Lake Elsman is created by an earthen dam (Austrian Dam) and has a maximum storage capacity of 6,153 acre feet (2,005 mg). When full, Lake Elsman has a surface area of 109 acres and a maximum depth of 149 feet. Water quality at Lake Elsman is considered to be excellent. Typically, the lake fills during the wet winter months due to runoff from the watershed land above the lake. During the summer season, releases from Lake Elsman are made to Los Gatos Creek downstream, where water is then diverted from the Ostwald Intake Facility by a pipeline to the Montevina Water Treatment Plant (Montevina plant). In accordance with SJWC’s Diversion and Use of Water License and the State Water Resources Control Board (SWRCB), Austrian Dam is required to release a minimum flow of one cubic foot per second (cfs) to Los Gatos Creek if and whenever there is water in storage at Austrian Dam (Horizon Water and Environment 2015).

**Lake Cozzens**

Lake Cozzens is an approximately 5.8-acre reservoir located in the Briggs Creek subwatershed west of the Lexington Reservoir and State Route 17. Lake Cozzens is immediately adjacent to (and downslope of) Lake Kittredge (described below). Lake Cozzens was built in the late 19th century for local water supply purposes. The lake is a historic source of supply and is not accessible to the public. The lake is used as a venue for SJWC events and a recreational amenity for SJWC employees and landowners immediately around the lake. No wading or swimming is allowed in the lake to protect water quality.
2.0 Project Description

Lake Kittredge

Lake Kittredge is an approximately 8.7-acre reservoir located in the Briggs Creek subwatershed west of the Lexington Reservoir and State Route 17. Lake Kittredge is immediately adjacent to (and upslope of) Lake Cozzens. Lake Kittredge was built in the late 19th century for local water supply purposes. Currently, the lake functions as an approved water supply and is not accessible to the public. The lake is used as a venue for SJWC events and a recreational amenity for SJWC employees and landowners immediately around the lake. No wading or swimming is allowed in the lake to protect water quality.

Lake Ranch Reservoir

The Lake Ranch Reservoir has a storage capacity of 215 acre-feet (70 mg) and is SJWC’s second largest raw water storage reservoir, after Lake Elsman. The reservoir has a surface area of about 23 acres when full. The Lake Ranch Reservoir occupies a linear valley formed by the San Andreas Fault Zone. This upper watershed valley forms a topographic saddle that straddles the Saratoga Creek subwatershed to the northwest and the Lyndon Canyon subwatershed to the southeast, which drains to the Lexington Reservoir. The Lake Ranch Reservoir has outlets on its northwest and southeast sides. This structure enables SJWC to release water to either the Saratoga Creek Water Treatment Plant (Saratoga plant) to the northwest or Montevina plant to the southeast by means of the Beardsley Creek Intake Facility. Water is primarily released to the Montevina plant, but SJWC does retain flexibility to release to Saratoga Creek and ultimately to the Saratoga plant as conditions require. When the reservoir is full, the water depth is 14 feet at the Lyndon Canyon end and 12 feet at the Saratoga Creek outlet side of the reservoir. The reservoir is accessible to the public through trails in Sanborn County Park. Recreational activities at the reservoir include picnicking and fishing, but no wading or swimming is allowed.

Intake Facilities

Ostwald Intake Facility

The Ostwald Intake Facility is located on Los Gatos Creek downstream of Lake Elsman. The facility includes an inflatable rubber dam, concrete dam base, wooden intake manifold, intake gates, leaf screening mechanism, and discharge pipe. The purpose of the facility is to capture flows along Los Gatos Creek and divert them to the Montevina plant through the Los Gatos Creek 30-inch-diameter conveyance pipe. This pipe also conveys raw water from other tributaries and watershed sources. The intake facility was built in 1964 and is the largest source of raw water for the Montevina plant. Typically, the intake facility provides about 55 percent of the Montevina plant’s source water in dry years (e.g., 2008) and about 70 percent in wet years.
In general, the intake gate is operated remotely, but it can be operated manually. The intake facility has a capacity of 17.9 million gallons per day (mgd). SJWC must maintain a minimum flow of two cfs, or 896 gallons per minute (gpm), downstream from the intake facility if and whenever there is storage at Austrian Dam, as required in the diversion and use of water license issued by SWRCB (1976). This minimum flow requirement is facilitated through a bypass pipe that discharges to the creek downstream of the dam.

**Hooker Intake Facility**

The Hooker Intake Facility is located at the downstream end of Hooker Gulch. The facility includes a concrete dam, an intake gate, and leaf screening house. The purpose of the facility is to capture flows along Hooker Gulch and divert them to an intake pipe. The diversion pipe travels downstream and joins the main Los Gatos Creek 30-inch-diameter conveyance pipe that provides raw water to the Montevina plant. The facility was built in 1953 and typically provides about 10-12 percent of SJWC’s surface water supply from the watershed system. Turbidity is continuously monitored and a pneumatic ram-operated butterfly valve located on the downstream piping is operated remotely to bring the intake in or out of service. The intake facility has a capacity of 14.7 mgd. The length of the reverse arc dam is 50 feet. The elevation of the crest of the dam is 790 feet, the intake pipe orifice is about five feet below the dam crest, and the dam is about 15 feet high from base to crest.

**Hendry Intake Facility**

The Hendry Intake Facility includes a small concrete weir, intake gate, leaf and debris screening filters, and downstream pipeline. During winter months when there is flow in Hendry's Creek, flashboards are inserted into the slotted weir. These flashboards create a small pool that supplies flows to the intake gate. Captured flows pass the debris and leaf screens and enter a 12-inch-diameter pipe that flows downstream adjacent to Hendry’s Creek. These flows join the main Los Gatos Creek 30-inch-diameter conveyance pipe near the confluence of Hendry’s Creek with Los Gatos Creek and are conveyed to Montevina plant. The intake facility was built in 1954 and typically provides water only during wetter years. In the wet year of 2010, the facility provided about 2.3 percent of SJWC's surface water supply from the Los Gatos Creek Watershed system. During dry years, no water is diverted. The flashboards and intake gate are operated manually. When the flashboards are installed and a pool of water is available for diversion, the intake facility has a capacity of 2.4 mgd.

**Upper and Lower Cavanee Intake Facilities**

The upper and lower Cavanee intake facilities are located on the east side of the watershed on Cavanee Creek, which drains directly to the Lexington Reservoir. The Lower Cavanee Intake
Facility is the primary intake facility, accounting for about 90 percent of the diverted flows from the two intakes in normal and wet years. It includes a multi-paneled sluice gate dam and concrete base, intake gate, leaf and debris screening mechanism, access boardwalk, and equalization basin. The Upper Cavanee Intake Facility includes only a concrete weir. A debris rack is located upstream of the Lower Cavanee Intake Facility. As necessary, the sluice gates are lowered during winter months at the lower facility to provide a shallow pool to supply the intake pipes. At the lower facility, captured flows pass the debris and leaf screens and enter a 12-inch-diameter pipe that flows to an equalization basin. Cavanee Creek water ultimately joins the main Los Gatos Creek 30-inch-diameter conveyance pipe downstream near the Lexington Reservoir and is conveyed to the Montevina plant. The lower and upper intake facilities were built in 1955 and have a capacity of 1.1 mgd and 4.8 mgd, respectively. Together, the intake facilities supply about 10 percent of SJWC’s surface water supply from the watershed.

Beardsley Creek Intake Facility

The Beardsley Creek Intake Facility includes a small concrete weir, flashboard notch, intake gate, leaf and debris screening filters, holding pool, and downstream pipeline. During winter months when there is flow in Beardsley Creek (also known as Lyndon Canyon Creek), a flashboard is manually inserted into the slotted weir to create a water depth that can supply flow to the intake gate. Captured flows are held in the storage pool and then pass the debris and leaf screens before entering a conveyance pipe down Lyndon Canyon Creek to the Montevina plant. The intake facility was built in approximately 1960. In the wet year of 2010, the facility provided about 5.1 percent of SJWC’s surface water supply from the watershed. During the dry year of 2008, this intake was used more because other sources were unavailable, and this facility provided 14.9 percent of SJWC’s surface water supply from the watershed. The intake facility has a capacity of 6.9 mgd if water is available for diversion.

Trout Creek Intake Facility

The Trout Creek Intake Facility includes a small concrete weir, flashboard notch, intake gate, leaf and debris screening filters, pump house, and downstream pipeline. During winter months when there is flow in Trout Creek, flashboards can be manually inserted into the slotted weir to create a water depth that can supply flow to the intake gate. Diverted flows are piped to Montevina plant. Because Trout Creek sits at a lower elevation than the Montevina plant, pumping is required to lift the water to the treatment plant. The current intake facility was built in 1957. In the wet year of 2010, the facility provided about 5.1 percent of SJWC’s surface water supply from the watershed. The intake facility is a relatively small source of surface water for SJWC, normally contributing less than three percent among the various Los Gatos Creek Watershed sources. The intake facility has a capacity of 2.5 mgd if water is available for diversion. In average or wet years, flows in Trout Creek are perennial, but in very dry years, flows may be more seasonal or intermittent.
Culverts and Road Crossings

SJWC owns and maintains multiple access roads in the watershed, with both paved and unpaved lengths. Drainage is typically conveyed across and beneath these access roads through culverts. The focus of program maintenance activities would be 51 culvert and road crossing sites along five primary access roads: the John Nicholas Trail (25 sites); Cathermola Road (six sites); Sears Road (11 sites); Ellege Road (eight sites); and Hooker Bypass Road (one site). The locations of these maintenance sites are shown in Figures 12-14, Culvert and Road Crossings Locations A-C. The John Nicholas Trail is a public trail within Sanborn County Park; no vehicle access is permitted. Cathermola Road, Sears Road, and Hooker Bypass Road are private roads that are gated and not open for public access. Ellege Road is a private road that provides vehicle access to six residences in the vicinity of Lake Cozzens and Lake Kittredge. Road maintenance activities would be implemented to meet “secondary access road” standards of the Santa Clara County Fire Department (SCCFD 2009).

2.6 Proposed Program Activities

Maintenance program activities would include the following general types of activities:

- Dam maintenance, such as repairing damage from burrowing animals, repairing dam hardware, and removing sediment from spillway and dam intakes;

- Vegetation management, including weed removal, removing vegetation along dam faces, cutting fire breaks, targeted fuel management at SJWC facilities, and limited herbicide spraying at SJWC facilities;

- Access road maintenance, including culvert repair, drainage ditch maintenance, and grading for erosion control;

- Intake maintenance, including flashboard repair, gate repair, and sediment removal at intakes; and

- General facility maintenance including fence repairs and general debris removal.

More detailed descriptions of proposed program maintenance activities at specific SJWC facilities are given in Table 2, Proposed SJWC Facility Maintenance Activities.
<table>
<thead>
<tr>
<th>Facility</th>
<th>Maintenance Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Williams</td>
<td>SJWC would not conduct any routine maintenance activities at Lake Williams. The dam is one of five SJWC facilities regulated by DSOD; however, no DSOD-required maintenance activities have been identified for this facility.</td>
</tr>
<tr>
<td></td>
<td>Maintenance activities at Lake Elsman would include managing vegetation along the dam face, maintaining the roads along the dam face, filling burrows along the dam face, periodically removing sediment from the base of the spillway (approximately 500 cubic yards initially) and at the emergency culvert outfalls (approximately 660 cubic yards initially), periodically clearing sediment and debris from the reservoir intake valve to maintain operation, maintaining dam facility hardware, and maintaining the roads and culverts that surround the lake.</td>
</tr>
<tr>
<td></td>
<td>Austrian Dam is regulated by DSOD, and vegetation management activities are prescribed by DSOD. Dam-face vegetation management would mostly involve weed control, typically using a weed-cutter to remove growth on the dam face and applying herbicides. If small shrubs are found on the dam face, they would be removed. Other than clearing the reservoir intakes, SJWC would not remove sediment from Lake Elsman. Sediment removal activities would be conducted to preserve intake functionality. Sediment removal would occur periodically (as needed for dam safety) at the base of the spillway and at the emergency culvert outfall area. Sediment that collects at the base of the spillway is generally not derived from Lake Elsman itself, but is transported from the tributary creek that discharges to the base of the spillway. When removal is necessary, an access road that leads to the pool at the base of the spillway would be used and sediment would be loaded on a haul truck and removed. Since 2009, sediment has been removed from the base of the spillway on one occasion. The sediment was beneficially reused within the watershed for road grading and construction staging. A similar procedure will be employed to remove sediment accumulated at the outfalls of the emergency culverts leading from the spillway to Los Gatos Creek. Maintenance of dam facility hardware would include the periodic inspection and repair of various pipes, valves, and other equipment that is used at the reservoir.</td>
</tr>
</tbody>
</table>
SJWC would also repair three gullies that have formed on Austrian Dam and modify an existing culvert that directs flow across an access road and down into the reservoir. The gullies are on the lake side, on the right dam groin (north side of dam), and south of Cathermola Road. Specifically, these gullies will be filled with rock rip rap to prevent additional erosion and alleviate threats to stability of the dam. This repair work would involve grading of up to 330 cubic yards to create v-ditch drainage forms in the gullies and installation of approximately 552 cubic yards of rock riprap to repair the gullies. In addition, an existing culvert would be wrapped with filter fabric or some equivalent fabric for protection, and would be anchored in place at several locations. The total disturbance area for the gully repair work is approximately 0.7 acre. Two staging areas would be used for temporary staging and stockpiling: one staging area (0.128 acre) would be located on the dam crest and the other staging area (0.825 acre) would be on the downstream flank of the dam. The existing paved dam access road would provide access to the site, an unpaved access route, would provide access to the staging areas and work site.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Maintenance Activity</th>
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<tbody>
<tr>
<td>Lake Cozzens</td>
<td>Maintenance activities at Lake Cozzens would be limited to vegetation management along the dam face (mostly involving weed and grass removal), tree pruning around the dam, and filling burrows along the dam face. To reduce strain and pressure on the earthen dam, the maximum allowable water level at Lake Cozzens is 5 feet below the overflow elevation. SJWC would also maintain the dam access road for proper grading and drainage. SJWC would not remove sediment from Lake Cozzens. Lake Cozzens is regulated by DSOD, and vegetation maintenance activities are prescribed by DSOD.</td>
</tr>
<tr>
<td>Lake Kittredge</td>
<td>Maintenance activities at Lake Kittredge would be limited to vegetation management along the dam face (mostly involving weed and grass removal), tree pruning around the dam, and filling burrows along the dam face. SJWC would also maintain the dam access road for proper grading and drainage. Additionally, a spring diversion box located near the lake, along Ellege Road, would be maintained periodically to remove sediment and debris. A maximum of one cubic yard of accumulated sediment and debris would be removed from the diversion box manually, primarily during the winter months. SJWC would not remove sediment from Lake Kittredge. Lake Kittredge is regulated by DSOD, and vegetation maintenance activities are prescribed by DSOD.</td>
</tr>
</tbody>
</table>
### 2.0 Project Description

#### Facility Maintenance Activity

<table>
<thead>
<tr>
<th>Facility</th>
<th>Maintenance Activity</th>
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</thead>
<tbody>
<tr>
<td>Lake Ranch Reservoir</td>
<td>Principal maintenance activities at Lake Ranch Reservoir would include vegetation management along the dam faces at both ends of the reservoir (mostly involving weed and grass removal); tree pruning around the dam; filling burrows along the dam faces; debris and vegetation management at the splitter gate upstream of the reservoir; and maintaining the reservoir outlet gates in good working order. At the splitter gate, SJWC would shovel accumulated debris by hand and place in the stream channel downstream of the diversion. SJWC would not remove sediment from Lake Ranch Reservoir. Lake Ranch Reservoir is regulated by DSOD, and vegetation maintenance activities are prescribed by DSOD.</td>
</tr>
</tbody>
</table>

#### Intake Facilities

<table>
<thead>
<tr>
<th>Intake Facilities</th>
<th>Maintenance Activity</th>
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</thead>
<tbody>
<tr>
<td>Ostwald Intake</td>
<td>Routine maintenance activities at the Ostwald Intake Facility would include periodic clearing of debris from the intake gates. Additionally, a spring diversion box located near the intake facility is maintained periodically to remove sediment and debris. A maximum of one cubic yard of accumulated sediment and debris would be removed from the diversion box manually, primarily during the winter months. The wooden boards that protect the base of the intake gate area are rotting and need repair and replacement. To facilitate replacement of these wooden boards, SJWC would remove approximately 5-10 cy of sediment that has accumulated at the upstream end of the wooden boards and then place the sediment downstream of the rubber dam in the channel. This work would occur during the dry season and involve use of hand tools. Since there would still be flow in the channel, dewatering activities would be needed and either a cofferdam or sand bag would be installed.</td>
</tr>
<tr>
<td>Hooker Intake</td>
<td>Maintenance activities at the Hooker Intake Facility would include sediment removal upstream of the facility, light pruning of branches around the facility, and periodic clearing of debris from the intake gates. Other minor maintenance activities include in-kind replacement of hardware such as a ladder, railing, and sluice gates at the intake facility. Sediment has not been removed from the facility since the 1990s. Sediment has accumulated behind the dam, and approximately 661 cubic yards of sediment currently needs to be removed. The frequency of future sediment removal would depend on the magnitude and frequency of winter storm events. It is anticipated that sediment removal at the Hooker Intake Facility would take place no more than four times during the 10-year program period. Following the initial sediment removal of 661 cubic yards, future sediment removal events would be restricted to a 500-cubic-yard limit. A threshold of 250 cubic yards of reduced storage capacity would be required to initiate any subsequent sediment removal work.</td>
</tr>
</tbody>
</table>
Facility | Maintenance Activity
--- | ---
Because of settling and aging, a portion of the right base of the concrete dam has cracked. This facility may require long-term repair and retrofit to address this structural issue. SJWC is monitoring the dam’s condition. Long-term repairs of the facility dam are not proposed as part of the proposed program.

**Hendry Intake**
- Sediment relocation
- Debris management

The Hendry Intake Facility would require a small amount of seasonal sediment relocation. Flashboards would be installed during winter months to capture surface flow to be diverted to the intake. If any sediment is deposited behind the flashboard dams, then following the seasonal removal of the flashboards toward the end of the winter flow season, the sediment would be allowed to flow downstream under natural flow conditions. If, at the conclusion of the winter flow season, sediment deposits remain at the intake weir, hand tools, such as shovels, would be used to manually move the sediment past the weir. All sediment would be kept in the creek. Deposited sediment is estimated to be less than two cubic yards annually and is typically moved by shovel less than 10 feet, just downstream of the weir. Relocated sediment would be allowed to flow downstream naturally.

Other routine maintenance at the intake facility would include annual inspection of the intake gate, leaf/debris screens, and hardware to ensure that the facility is operating properly.

**Upper and Lower Cavanee Intake (lower intake only)**
- Sediment relocation
- Debris management

At the Lower Cavanee Intake Facility, routine maintenance would be focused on annual inspection of the sluice gate weirs and confirming the proper functioning of the intake gate, leaf/debris screens, and other hardware to ensure that the facility is operating properly. Any sediment that is deposited behind the sluice gate weirs would be allowed to be transported downstream under natural flow conditions at the end of the winter flow season when the weir is raised. If necessary, any sediment relocation downstream would be conducted with hand tools, such as shovels, and is estimated to be less than two cubic yards annually. Sediment would only be moved immediately downstream, less than 10 feet, and all sediment would be kept in the stream.

No sediment removal or other maintenance activities would occur at the Upper Cavanee Facility.

**Beardsley Creek Intake**
- Sediment relocation
- Debris management

Water would be diverted into the Beardsley Creek Intake Facility only during the winter months. Flashboards would be used to seasonally divert flows into the intake facility. If any sediment is deposited behind the flashboards, then following the seasonal removal of the flashboards, toward the end of the winter season, the sediment would be allowed to flow downstream under natural flow conditions. If sediment remains at the weir at the end of the season, then hand tools, such as shovels, would be used to move the sediment manually past the weir. Deposited sediment is estimated to be less than two cubic yards annually and would be moved less than 10 feet downstream. All sediment would be kept
## 2.0 Project Description

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<tr>
<th>Facility</th>
<th>Maintenance Activity</th>
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<tr>
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<td>in the stream channel. In most years, the pool upstream of the weir remains clear and open. Other routine maintenance would include annual inspection of the intake gate, leaf/debris screens, and intake gate hardware to ensure that the facility is operating properly.</td>
</tr>
<tr>
<td>Trout Creek Intake</td>
<td>Water would be diverted into the Trout Intake Facility only during the winter months. Flashboards would be used to seasonally divert flows into the intake facility. If any sediment is deposited behind the flashboard dam, then following the seasonal removal of the flashboards, toward the end of the winter season, the sediment would be allowed to flow downstream under natural flow conditions. If sediment remains at the weir at the end of the season, then hand tools, such as shovels, would be used to manually move the sediment past the weir. Relocated sediment is estimated to be less than two cubic yards annually and would be moved less than 10 feet downstream. All sediment would be kept in the stream channel. In most years, the pool upstream of the weir remains clear and open. Other routine maintenance at the intake would include annual inspection of the intake gate, leaf/debris screens, and intake gate hardware to ensure that the facility is operating properly.</td>
</tr>
<tr>
<td>Culverts and Road Crossings</td>
<td>Maintenance activities at the 25 identified work sites at road crossings on the John Nicholas Trail include:</td>
</tr>
<tr>
<td>John Nicholas Trail</td>
<td>- Installing erosion protection treatments, such as grading, backfilled earth, and rock-toe protection to slow continued erosion of inlet and outfall areas;</td>
</tr>
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<td>- Repositioning of inlets to improve drainage and reduce sedimentation onto the road;</td>
</tr>
<tr>
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<td>- Removing debris from inlet and outfall areas;</td>
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<td>- Removing old, abandoned culvert pipes and replacing existing culverts that have been crushed, damaged, or extensively corroded;</td>
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<td>- Upgrading hydraulically insufficient culverts to reduce road flooding and pooling;</td>
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<td>- Replacing parallel culverts with single culverts to reduce outfall erosional widths; and</td>
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<tr>
<td></td>
<td>- Installing a new culvert to provide adequate drainage to prevent further road erosion and destabilization.</td>
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<tr>
<td>Facility</td>
<td>Maintenance Activity</td>
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<td>------------------</td>
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<tr>
<td>Cathermola Road</td>
<td>The anticipated maintenance activities at six work sites along Cathermola Road include:</td>
</tr>
<tr>
<td></td>
<td>- Repairing three sites that experience regular flooding and erosion due to inadequate drainage, installing culverts to improve roadside drainage and reduce ongoing flooding and erosion of the existing road, and installing appropriate inlet/outlet erosion protection;</td>
</tr>
<tr>
<td></td>
<td>- Replacing the existing culvert at site C10 because the pipe has failed and reinforcing the inlet area north of Cathermola Road to prevent further hillside erosion;</td>
</tr>
<tr>
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<td>- Extending the culvert outfall at site C20 and reinforcing the inlet due to visible erosion around the 18-inch-diameter inlet pipe; and</td>
</tr>
<tr>
<td></td>
<td>- Clearing the upslope side of the road of accumulated debris and sediment at site C24 to improve drainage and reduce ongoing clogging of a 12-inch-diameter culvert inlet, and extending the existing outfall.</td>
</tr>
<tr>
<td>Sears Road</td>
<td>Anticipated maintenance activities along Sears Road, northwest of Lake Elsman, include:</td>
</tr>
<tr>
<td></td>
<td>- Installing culverts at four sites (sites LE1, LE8, W2, and W15) that experience regular road flooding from adjacent hillslope runoff, to improve roadside drainage and reduce routine flooding of the existing road, and installing appropriate inlet/outlet erosion protection;</td>
</tr>
<tr>
<td></td>
<td>- Replacing six culverts with rock slope protection (LE2, LE3, LE8, LE5, LE6, LE7); and</td>
</tr>
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<td>- Installing an upgraded culvert at a fourth location (site W9) to help alleviate road flooding.</td>
</tr>
<tr>
<td>Ellege Road</td>
<td>Anticipated maintenance activities at Ellege Road near Lake Kittredge include:</td>
</tr>
<tr>
<td></td>
<td>- Installing inlet protection for two existing culverts (sites E7 and sites E9) to protect against further erosion, and excavating and clearing one of the culvert outfalls that is buried;</td>
</tr>
<tr>
<td></td>
<td>- Upgrading to a larger diameter culvert at site E7, if needed, to convey runoff beneath Ellege Road, where the site currently floods due to roadside drainage buildup;</td>
</tr>
<tr>
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<td>- Removing one damaged culvert (E1);</td>
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<td></td>
<td>- Replacing four culverts (E2, E4, E5, E6) to improve roadside drainage; and</td>
</tr>
<tr>
<td></td>
<td>- Installing a new culvert at site E3 to pass runoff delivered from an upslope hillside to beneath Ellege Road.</td>
</tr>
</tbody>
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2.0 Project Description

<table>
<thead>
<tr>
<th>Facility</th>
<th>Maintenance Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hooker Bypass Road</td>
<td>One site on Hooker Bypass Road is subject to severe culvert clogging with debris from the steep hillside above. The slope above the inlet would be reinforced to prevent debris from entering and filling the culvert. The addition of a grate cover would be evaluated to further reduce clogging.</td>
</tr>
<tr>
<td>Inlet protection</td>
<td></td>
</tr>
<tr>
<td>Debris management</td>
<td></td>
</tr>
</tbody>
</table>

Watershed Vegetation and Fuel Management

| At program facilities/structures | Principal activities for all SJWC-maintained facilities and structures would include:                                                                                                                                                                                                 |
|                                | - Removal of dead, decaying woody debris, or fallen trees (200-foot radius around a facility);                                                                                                                   |
|                                | - Removal of hazard trees, where sick, decaying, or otherwise potentially hazardous trees are at higher risk for falling (200-foot radius);                                                                      |
|                                | - Thinning and pruning of vegetation (100-foot radius);                                                                                                                                                    |
|                                | - Removal of snags and ladder fuels (100-foot radius), which increase the fire hazard by increasing the risk of ignition and connectivity from the understory to the mid-canopy and upper canopy forest levels; and |
|                                | - Vegetation thinning and pruning activities, focused on highly flammable material greater than 1 inch and less than 8 inches diameter at breast height (dbh).                                                      |
| At access roads               |                                                                                                                                                      |
|                                | Along SJWC-maintained roadways, maintenance activities would include:                                                                                                                                       |
|                                | - Removal of dead, decaying woody debris, fallen trees, and hazard trees (50-foot radius on both sides of roadways);                                                                                            |
|                                | - Thinning, pruning, and removal of snags and ladder fuels (50-foot radius); and                                                                           |
|                                | - Establishing firebreaks through weed removal and herbicide control.                                                                                                                                          |
|                                |                                                                                                                                                      |

Source: Horizon Water and Environment 2016
Figure 12
Culvert and Road Crossings Locations A
Los Gatos Creek Watershed Maintenance Program EIR

Source: Horizon Water and Environment 2016
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Figure 13

Culvert and Road Crossings Locations B

Los Gatos Creek Watershed Maintenance Program EIR

Source: Horizon Water and Environment 2016
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2.7 Activities Not Covered Under the Maintenance Program

The maintenance program would not include the following activities:

- Emergency repair work;
- Maintenance work for construction projects or projects identified in SJWC’s Capital Improvement Plan (CIP);
- Maintenance work that would increase the water supply capacity of a facility beyond the designed capacity (as-built design);
- Maintenance work conducted on non-SJWC private property by land owners; or
- Maintenance work performed by other agencies.

Routine watershed maintenance would not include projects that would alter the designed flood conveyance capacity of a channel. CIP improvements are not considered routine maintenance and are not included in the proposed program.

A situation is considered an “emergency” if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code § 21060.3).

Maintenance activities or upgrades for the Montevina or Saratoga treatment plants are not included in the proposed watershed maintenance program. Maintenance activities in the lower Los Gatos Creek Watershed are covered by SCVWD’s 2014-2023 Stream Maintenance Program.

Future activities may be added to the maintenance program in the future; however, adding additional activities into the maintenance plan not described in this maintenance project description may be subject to additional CEQA review and may require subsequent CEQA documentation in some form, such as an addendum to the program’s EIR or a subsequent or supplemental EIR to evaluate potential new impacts not previously identified.

While the proposed maintenance program is as specific to areas of the watershed to the extent feasible, it is recognized that some maintenance activities described in this maintenance program may be implemented anywhere within the watershed on SJWC property where the described maintenance activity is not necessarily site specific. Examples of non-site specific maintenance activities are road maintenance and vegetation fuel management activities, which may occur as need arises. However, the broad and general nature of these activities allows best management
practices (BMPs) to be proposed which would reduce potential impacts to a minimum level. Furthermore, site specific BMPs can be required for these activities when in relation to a specific facility site.

**Other On-Going SJWC Projects**

In addition to on-going efforts by the SJWC mentioned above, one additional SJWC project is underway: the Ostwald Water Line Replacement.

**Ostwald Water Line Replacement**

The Ostwald Water Line Replacement effort is to replace the existing 30-inch wrapped steel pipeline, which extends from the Ostwald Dam impoundment along Los Gatos Creek to an existing pipeline approximately 1,700 feet to the north of the dam, with a new 30-inch ductile iron pipeline with polyethylene encasement (for corrosion protection). The replacement pipeline will be installed within the same alignment as the existing water transmission line. This effort is not included within the proposed maintenance program and is subject to its own CEQA review. As of the time of preparation of this EIR, the Ostwald Water Line Replacement project has been undergoing its own CEQA review since before the beginning of the proposed program’s CEQA review.

**2.8 Program Implementation**

**Maintenance Work Timing**

Proposed maintenance activities would be conducted on an annual cycle; the timing for implementing activities would vary depending on whether they are non-ground-disturbing activities or ground-disturbing activities. Maintenance timing would also depend on specific site locations.

**Non-ground-disturbing Activities**

Non-ground-disturbing maintenance activities that would be conducted in uplands or along roads may occur year round, although the emphasis of maintenance is in the spring season. For these types of activities, including maintenance along access roads, fire fuel reduction, and tree pruning and brush clearing around the perimeter of SJWC facilities in upland areas, a reconnaissance-level evaluation would typically be conducted annually in the winter months. Vegetation thinning and removal of dead branches or understory are best conducted in spring,
once the wet months are over and before the drier conditions begin in summer, when the fire risk increases. Non-ground-disturbing upland vegetation management is generally scheduled to begin in April and would be completed by June 30.

**Ground-disturbing Activities**

For maintenance activities that involve ground disturbance, such as sediment clearing at intake facilities and culvert replacement, SJWC would conduct a maintenance evaluation at each facility during February or March. The history of past maintenance activities and specific resource conditions at the facilities would be reviewed as maintenance tasks are identified and prioritized. During March and April, an annual maintenance work plan would be developed for ground-disturbing activities based on the assessment and prioritization process. The number of projects prioritized for the annual work plan would dependent on factors such as the climatic and hydrologic conditions of the preceding year. Projects designated as low priority and not included in the current year’s work plan would be noted for inspection and reassessment during the next annual work cycle. As appropriate, regulatory agencies would be notified of the planned ground-disturbing maintenance activities in May and June. Ground-disturbing maintenance work would be implemented between June 15th and October 1st.

For ground-disturbing activities near creeks and wetlands in particular, potential constraints would be identified that could complicate maintenance activities. For example, narrow access, the presence of infrastructure such as pipelines or road crossings, the presence of special-status species, or structural facility issues could all influence the maintenance approach. The annual maintenance work plan for ground-disturbing activities would identify necessary impact avoidance measures. Following the identification of the treatment approach, activity-specific BMPs would be applied and the maintenance work would be conducted accordingly. Appendix C identifies the BMPs that support the maintenance program.

**Equipment**

The specific pieces of equipment used for the maintenance program activities would vary depending on the facility and type of maintenance activity required, but may include the following:

- Weed cutters;
- Hand tools (i.e., shovels, rakes, loppers, and hand saws);
- Chainsaws and power pruners;
- Excavator;
2.0 Project Description

- Bulldozer;
- Tractor; and
- Herbicide spray application equipment.

SJWC stores maintenance equipment in storage facilities and sheds along an access road leading to Lake Elsman. In conducting the maintenance work, SJWC typically uses a three-person crew and a single four-wheel-drive truck. During the summer peak maintenance season, the standard workforce may increase to five to six workers, sometimes working in up to two to three crews, and using up to three trucks.

**Maintenance Site Access**

State Route 17 provides primary regional access to the proposed program area. Black Road provides primary access to maintenance sites in the vicinity of the Lake Ranch Reservoir, Lake Kittredge, and Lake Cozzens. Beardsley Road provides access to the Beardsley Intake Facility. Old Santa Cruz Highway, Alma Bridge Road, and Aldercroft Heights Road provide primary access to the Hendry Creek Intake Facility. Alma Bridge Road provides access to the Upper and Lower Cavanee Intake Facilities. Aldercroft Heights Road also provides primary access to the Hooker and Ostwald Intake Facilities.

From these public roads, most of the maintenance sites are accessible on private, gated roads that are owned and maintained by SJWC. Proposed culvert and road crossing maintenance sites are located on Cathermola Road, Sears Road, Ellege Road, and Hooker Bypass Road, all of which are owned by SJWC. Additionally, culverts would be maintained along the John Nicholas Trail, which is owned by the County and is accessible on Black Road.

**Construction Staging**

Equipment and vehicle staging areas would vary by maintenance activity type and location. In general, staging would occur on SJWC property immediately adjacent to the maintenance site. Where feasible, construction equipment and vehicles would be staged for no more than one day at a time.

For vegetation and fuel management activities occurring along access roads or intake facilities, equipment and vehicle staging would likely occur on SJWC’s access roads or within 100 feet of the maintenance area.

Similarly, for culvert and road crossing facility maintenance, the roads undergoing maintenance would likely be used for staging equipment and worker vehicles. Staging areas for culvert
maintenance sites would depend on the extent or number of culvert maintenance sites being addressed at a given time. For example, when conducting culvert maintenance on the John Nicholas Trail, SJWC would coordinate with the County to determine an appropriate staging area. If up to 10 culvert sites are being repaired, equipment staging may last up to three weeks.

Equipment and vehicle staging for sediment removal at the Hooker Intake Facility would occur in the immediate vicinity of the facility on SJWC property and on a turnout on an existing gravel access road west of the facility. This staging area would be used for approximately 15 days during each sediment removal event.

At all other intake facilities and impoundments, staging would occur on SJWC-owned property and within 100 feet of each maintenance area, for no more than one day.

**Dewatering and Creek Flow Management**

Nearly all of the maintenance activities outlined in Table 2, Proposed SJWC Facility Maintenance Activities, can be completed without any diversions or dewatering of creeks. Necessary repairs and sediment removal at some intake facilities may require temporary flow diversions and channel dewatering during normal or wet years. When necessary, flow diversion and channel dewatering activities would be conducted according to BMPs GEN-14 through GEN-16 (see Appendix C).

**Annual Reporting and Agency Notification**

By May 1st of each year, SJWC would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight as further described in this section) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance project activities, locations, natural resource conditions, and any other key resource issues. If requested, SJWC would host a tour of the identified maintenance sites following regulatory agency notification. Following regulatory review and coordination, ground-disturbing projects would be implemented between June 15th and October 1st. Before the end of the maintenance calendar year, SJWC would send the relevant regulatory agencies a summary report describing the status of the maintenance program and confirming which activities from the maintenance program were completed.

**Maintenance Program Manager**

As a component of the proposed maintenance program, SJWC will designate a Maintenance Program Manager responsible for oversight of the maintenance program. This designated program manager will be SJWC’s primary contact for any and all maintenance program activities and functions.
2.0 Project Description

**Maintenance Program Schedule**

SJWC is in the process of submitting permit applications for the maintenance program and hopes to receive necessary permits from the U.S. Army Corps of Engineers (USACE), San Francisco Bay Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) by the end of 2016. SJWC is applying for a 5-year Regional General Permit per Clean Water Act (CWA) Section 404 from USACE and a CWA Section 401 Water Quality Certification for a 5-year period from RWQCB, both with a 5-year renewal option. In addition, SJWC is applying for a 10-year Routine Maintenance Agreement from CDFW for the proposed maintenance program. It is anticipated that with approval of the maintenance program and certification of this EIR, the majority of permits received by SJWC would have a coverage period of 2017-2026, assuming that USACE and RWQCB find the 5-year renewal options acceptable. Therefore, for purposes of this EIR, the proposed maintenance program is anticipated to be valid until 2026. At this time, SJWC will be responsible for preparing an update to the existing proposed maintenance program and submitting the updated program to the County for review and approval. It is anticipated that subsequent CEQA review will apply; however, to what extent CEQA review will be required is not known at this time.

2.9 Impact Avoidance and Maintenance Triggers

The impact avoidance and maintenance triggers described below, by facility type, would be implemented to avoid and reduce program impacts.

**Impoundments (Reservoirs)**

**Sediment Removal**

SJWC would not remove sediment from reservoirs to increase or maintain reservoir capacity as part of the routine maintenance program. If accumulated sediment or debris prevents the proper functioning of a dam or reservoir emergency spillway, emergency culverts, or impairs the safe operation of the dam facility, however, then sediment may be removed.

**Vegetation Management**

Vegetation management activities at SJWC dams and reservoirs are required by DSOD safety regulations. As an impact avoidance process, the following maintenance criteria would be applied to screen and evaluate when vegetation management activities are required at SJWC dams and reservoirs:
Vegetation (other than grass) would be removed when it is observed growing on the dam face;

Vegetation would be removed when it is observed growing in any concrete cracks, weep holes, or expansion joints or along any dam access roads;

Vegetation would be removed when it is observed growing along dam abutments and dam contacts with adjacent native material;

Grass would be cut to a height that enables clear visibility of the dam surface; and

Any observable damage caused by burrowing animals along the dam face would be repaired.

Vegetation management activities would be implemented at SJWC facilities according to BMPs, which are discussed in detail in Section 1.10, Best Management Practices.

**Intake Facilities**

At the Ostwald Intake Facility, no sediment would be removed from the Los Gatos Creek Watershed system. Sediment deposited behind the rubber dam would be allowed to migrate downstream under natural streamflow when the dam is periodically lowered. Rotted wooden boards shielding the intake from the creek would be repaired and replaced only under dry conditions. This maintenance would occur when the dam is deflated. A protective barrier would be established to keep the intake facility dewatered and dry during the repair process.

At the Hooker Intake Facility, sediment removal would be limited to an initial removal of 661 cubic yards. After the initial sediment removal, up to four additional sediment removal actions may occur during the 10-year maintenance program period, with each additional removal activity limited to 500 cubic yards. A threshold of 250 cubic yards of reduced storage capacity would be required to initiate any subsequent sediment removal work. Sediment removal work at the Hooker Intake Facility would occur only in late summer and early fall, typically September and October, during the driest period in the creek. Sediment removed from the Hooker Intake Facility would be beneficially reused within the Hooker Gulch subwatershed.

At the Beardsley, Trout, Lower Cavanee, and Hendry intake facilities, any sediment relocation to the channel immediately downstream of the weir would be conducted only using hand tools, such as shovels, and would only involve moving sediment past the weir structure. Typically, this amounts to less than two cubic yards annually, with sediment being moved less than 10 feet downstream past the weir. All sediment would be kept in the stream system. No sediment removal or instream work would be conducted at the Upper Cavanee Intake Facility.
Logs or downed trees less than 10 feet long that are caught or trapped at intake facilities would be relocated directly downstream of the intake facility and kept in the stream channel. For logs or downed trees that are more than 10 feet long, the logs shall be cut into pieces shorter than 10 feet and then relocated downstream of the intake facility. The intention is to maintain woody debris in the stream channel as much as possible. Before any downstream placement of woody debris, however, SJWC would confirm that downstream facilities, if present (such as road crossings or culvert outfalls), would not be impaired by the placement of woody debris in the channel. If downstream facilities are present that could be affected by the placement of woody debris, then SJWC would identify an alternative upland disposal site for the woody debris, typically on lands within the riparian corridor near the stream channel (BMP VEG-5).

The following maintenance triggers would be applied to screen and evaluate when maintenance activities are required at SJWC intakes:

- Intake facilities would be inspected routinely during the wet season and before the beginning of the wet season. For most facilities, the major inspection would occur before their first use during the late fall and winter season. Intake gates, leaf/debris screens, weirs, debris racks, and other hardware would be inspected and tested to ensure that the facility is operating properly. Any identified need for maintenance and repair would be completed as soon as possible.

- As with impoundment facilities, if vegetation growth is affecting the proper operation of an intake facility, then the vegetation would be pruned or removed so that it does not interfere with proper facility operation.

- At the Beardsley, Hendry, and Trout intake facilities, flashboards would be inserted and removed as needed throughout the season to keep debris clear of the intake, as well as manage available water supply. Similarly, at the Lower Cavanee Intake Facility, the sluice gates would be opened as needed to keep the openings clear. If sediment is deposited behind the flashboard dams or sluice gates (at Cavanee) toward the end of the rainy season, then following the seasonal removal of the flashboards, the sediment would be allowed to migrate downstream under natural flow conditions; alternatively, hand tools, such as shovels, could be used to physically move two cubic yards of sediment annually to just below the weir. All sediment would be kept in the creek.

- At the Ostwald Intake Facility, the rubber dam along Los Gatos Creek would be lowered during winter storms, allowing any sediment that has collected behind the rubber dam to migrate downstream under natural streamflow conditions. If any sediment has accumulated near the intake entrance, then that sediment would be cleared and moved away from the intake facility but kept in the creek. Sediment would not be removed from Los Gatos Creek at the Ostwald Intake Facility.
At the Hooker Intake Facility, sediment accumulation since the last removal in the 1990s has reduced the pool capacity and ability for the intake facility to operate. After the initial sediment removal, up to four additional sediment removal actions may occur during the 10-year maintenance program period. Sediment would be removed from the Hooker Intake Facility when operational capacity is reduced by more than 250 cubic yards of lost capacity in the intake pool. Removed sediment would be limited to 500 cubic yards per maintenance activity.

**Culverts and Road Crossings**

**Maintenance Triggers**

The following maintenance triggers would be applied to screen and evaluate when maintenance activities are required for culverts and road crossings:

- When roadside drainage is insufficient or malfunctioning due to blockage by debris, sediment, or vegetation then the roadside ditches would be cleared of the blocking material.

- When a culvert inlet on the upslope side of the road does not adequately capture runoff from either a contributing roadside ditch or direct hillslope runoff adjacent to the road and culvert entrance, then erosion control measures would be implemented to reduce any active hillslope erosion that is clogging or burying the culvert inlet with debris or sediment. Possible erosion control measures might include grading the hillslope to a more stable inclination, terracing the hillslope, applying erosion control fabrics/treatments, and using a grate cover at the culvert inlet.

- When a culvert is incorrectly positioned, crushed, or damaged or otherwise cannot function properly, the culvert would be cleared, repaired, or replaced.

- When a culvert is undersized such that it cannot convey the necessary drainage resulting in overflow, flooding, or erosive conditions, the culvert would be replaced.

- New road culverts would be installed in areas where no culvert exists and storm water runs across the roadway or is causing severe erosion.

- Outfall maintenance, repair, and erosion control would be implemented when culvert outfalls are blocked with debris or sediment, or when a culvert discharges to a steep hillside and additional, or new, erosion protection is needed to protect the slope below the culvert outfall. Erosion control treatments might include slight grading at the culvert outfall, placement of erosion control/protection materials at the outfall slope, placement of
energy dissipation materials at the culvert outfall slope, or extension of the culvert into flexible plastic pipe to discharge flows in a location farther downstream that is not as steep or eroding.

- When erosion of earthen roadways has occurred or ruts and rivulets have formed that restrict vehicular passage or result in additional erosion, then maintenance activities, such as backfilling the rills or ruts and regrading the road top surface, would be implemented by SJWC.

### Applicability of BMPs

Implementation of BMPs are applicable to maintenance work at culvert and road crossings. Implementation of BMPs may be applicable of channel dewatering. BMPs prescribe avoidance and minimization measures for special-status species and habitat from road and culvert maintenance activities. BMPs prescribe revegetation or planting requirements after ground-disturbing activities are conducted. Maintenance program BMPs are presented in Appendix C.

### Watershed Vegetation and Fuel Management

SJWC inspects land surrounding its facilities, structures, and roads annually to assess the forest fuel condition and evaluate whether vegetation management is necessary. Based on the annual vegetation and fuel assessment, SJWC would develop a fuel management plan to implement during the following maintenance season. The fuel management plan would prioritize sites based on the degree of overgrowth and fire risk.

A qualified fire scientist, registered professional forester, certified arborist, or Ph.D.-qualified forest ecologist would conduct a forest fuel management assessment and identify potential fuel hazards and the condition of trees to be removed as either dead, decaying, fallen, hazard or otherwise subject to thinning and pruning. The findings of this assessment would be incorporated into the fuel management plan. Vegetation management and actions to reduce potential fire fuel would be conducted within specific 100- or 200-foot-radius distances of SJWC facilities, as described in the Watershed Vegetation and Fuel Management section of Table 2, Proposed SJWC Facility Maintenance Activities. Along SJWC-maintained roads and trails the maintenance buffer distance is 50 feet.

Appendix C lists maintenance program BMPs and identifies which BMPs are potentially applied at facility sites. As described in BMP VEG-1, vegetation thinning and pruning would follow appropriate standards according to the American National Standards Institute (ANSI) A300 (Part 1) 2008 Pruning, ANSI Z133.1 – 2000 Safety Requirements and International Society of Arboriculture (ISA) Best Management Practices for Tree Pruning (2008, or the most current
BMP VEG-4 includes restrictions on herbicide use in and around SJWC facilities. BMP VEG-5 describes management of downed trees and logs to maximize habitat provided by large wood in stream channels, while protecting SJWC facilities. BMPs BIO-1 through BIO-6 prescribes avoidance and minimization measures to protect special-status species and habitat during watershed fuel management activities. BMPs BIO-7 through BIO-9 prescribe revegetation or planting requirements after vegetation management activities are conducted.

### 2.10 Best Management Practices

The SJWC facility maintenance activities in the watershed would incorporate a range of measures to minimize undesired effects on the environment. BMPs specifically created for the proposed program encompass the range of proposed maintenance activities and the environmental conditions of the program area. The BMPs for the maintenance program are listed in Appendix C. These BMPs include general BMPs that would apply to all work, as well as activity and site-specific BMPs designed to address anticipated effects of certain maintenance activities or particular types of resources at specific facility locations, when appropriate.

### 2.11 Permits and Approvals

In addition to the County, the CEQA documentation for the proposed maintenance program will be used by various regulatory agencies issuing permits, as well as other approvals and consultations for the proposed program. Specifically, information about the maintenance program and the environmental analysis will be used by several agencies as part of their decision-making process regarding regulations applicable to the proposed program.

SJWC has submitted to the Department of Planning Development an application for Grading Approval for maintenance activities at the Hooker Gulch Intake Facility, a component of the larger Los Gatos Creek Watershed Maintenance Program. The grading approval procedure is intended to evaluate and condition earth-moving activity in accordance with General Plan policies and requirements of the County Grading Ordinance. It is intended to ensure that ground clearing, excavation, earthwork, and any resulting changes in drainage do not detrimentally impact people, property or the environment. After a project has received Grading Approval from the Planning Office, the applicant is authorized to apply for a Grading Permit.

**Table 3, Regulatory Considerations**, provides a list of agencies and the applicable permits, approvals, and consultations that are expected to be required for the proposed maintenance program.
Table 3  Regulatory Considerations

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit / Approval / Consultation</th>
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<tbody>
<tr>
<td><strong>Federal Agencies</strong></td>
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<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Section 404 of the Clean Water Act – Regional General Permit</td>
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<td></td>
<td>National Environmental Policy Act – potential issuance of a Finding of No Significant Impact (FONSI)</td>
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<td></td>
<td>National Historic Preservation Act compliance:</td>
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<tr>
<td></td>
<td>a. Section 106 cultural and historic structures/sites</td>
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<td></td>
<td>b. National Register of Historic Places (NRHP) compliance, if applicable</td>
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<tr>
<td>U.S. Fish and Wildlife Service</td>
<td>Federal Endangered Species Act – issuance and authorization under incidental take provision of a Biological Opinion</td>
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<td></td>
<td>Migratory Bird Treaty Act compliance</td>
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<td>Bald and Golden Eagle Protection Act compliance</td>
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<tr>
<td><strong>State Agencies</strong></td>
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<tr>
<td>California Department of Fish and Wildlife</td>
<td>Section 1600 et seq. of the California Fish and Game Code – Routine Maintenance Agreement</td>
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<td>Native Plant Protection Act compliance</td>
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<td>San Francisco Bay Regional Water Quality Control Board (Region 2)</td>
<td>Section 401 of the Clean Water Act – water quality certification</td>
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<td>Porter-Cologne Water Quality Control Act – waste discharge requirements</td>
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<td></td>
<td>Section 303(d) of the Clean Water Act – compliance with applicable total maximum daily load requirements or 303(d) listed waters</td>
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<tr>
<td><strong>Local Agency</strong></td>
<td></td>
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<tr>
<td>County of Santa Clara</td>
<td>Grading Approval</td>
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<tr>
<td></td>
<td>Tree removal permit for removal of any protected trees or heritage trees as defined in Section C16 of the County Ordinance Code.</td>
</tr>
</tbody>
</table>

*Source:* Horizon Water and Environment 2016
3.0 ENVIRONMENTAL EFFECTS

3.1 AESTHETICS

This section addresses the existing visual resources within the program area and potential impacts to aesthetic and visual resources from the proposed program, including potential effects to views from designated scenic highways, scenic areas, and public view corridors, including recreational areas. Sources used for this evaluation include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

A comment was received from the county parks and recreation department during the NOP process requesting that EIR include an evaluation of the potential degradation of views and to include measures to minimize any potential impacts. These potential impacts and minimization measures have been incorporated in the analysis of this EIR section.

Environmental Setting

Regional Visual Character

The program area is largely undeveloped and comprised of forested and mountainous areas, resulting in a generally high visual quality for the program area. Major topographic features of the program include the northwest-southeast trending ridge that is the southern boundary of the watershed and the northeastern ridge which generally marks the watershed’s northern boundary. Prominent mountain peaks within this ridgelines include the peaks of Mount Thayer, Mount Umunhum, and Loma Prieta Mountain. Lexington Reservoir, Lake Ranch Reservoir, Lake Cozzens, Lake Kittredge, Lake Elsman, and Williams Reservoir are also prominent visual features in the program area.
3.0 Environmental Effects

**Scenic Highways and Corridors**

State Route 9 within the vicinity of the program area is an officially designated state scenic highway. Two stretches of highway within Santa Clara County have been identified as eligible for designation as State Scenic Highways: State Route 35 from State Route 92 to the Santa Cruz County line, and State Route 17 from State Route 9 to the Santa Clara County line.

In addition, the *Santa Clara County General Plan* identifies the following roads within the program area as scenic rural roads: Skyline Boulevard, Alma Bridge Road, and Old Santa Cruz Highway. The county's general plan also identifies the following roads as being in need of scenic protection: Montevina Road, Black Road, Bear Creek Road, Soda Springs Road, and Aldercroft Heights Road. Although these roads are categorized as scenic, they are considered to be inappropriate for recreational driving because they have no proposed public facilities, are of poor quality, or are in remote areas with high fire hazards (Santa Clara County 1994).

Roadways designated as scenic or eligible for scenic status designation are displayed in Figure 15, Scenic Roadways in the Program Area Vicinity.

**Viewer Groups and Sensitivity**

Viewer groups within the program area and their potential sensitivity to visual changes in the program area are described below. Viewer groups are divided into three categories: recreational users, residents, and motorists.

**Recreational Users.** Recreational activities in the program area include activities such as walking, jogging, biking, dog walking, and bird watching. Numerous trails in Sanborn County Park, Lexington Reservoir County Park, El Sereno Open Space Preserve, and Sierra Azul Open Space Preserve provide views of the surrounding mountain ridgelines and peaks. Viewer sensitivity of recreational users on the John Nicholas Trail is considered moderately high because these users would be expected to be sensitive to changes in views.

**Residents.** There are some private residences near SJWC-maintained facilities in the program area and a few residences would most likely have views of planned maintenance activities. Viewer sensitivity for individuals in these residences is considered moderately high as these individuals would be expected to be sensitive to changes in views. However, it is noted that views from private residences are not public viewing locations.

**Motorists.** Views of motorists are typically of short duration, except on straight stretches where views last slightly longer. Motorists are considered to have a moderate visual sensitivity. However, due to a combination of distance from roadways, topography, and the presence of dense vegetation, the maintenance sites are primarily out of view from public roads.
Figure 15
Scenic Roadways in Program Area Vicinity
Hayes Housing Initial Study
Regulatory Setting

State

California Scenic Highway Program. In 1963, the state legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California. The State Highway System includes designated scenic highways and those that are eligible for designation as scenic highways.

In Santa Clara County, State Route 9 is considered an officially designated state scenic highway and Interstate 280, State Route 17, State Route 35, and State Route 152 are considered eligible for designation as state scenic highways. State Route 17 runs through the program area. State Route 35 generally forms the watershed’s southern boundary as it follows the watershed’s ridgeline.

Local

Santa Clara County General Plan. The Santa Clara County General Plan includes guidelines for the scenic highways and roads system of the county. The general plan describes the functions of scenic highways as follows:

- They provide access from the urban area to parks and public open space lands in the foothills and mountains, and thus contribute to the quality of the recreation experience of urban dwellers seeking escape to the beauty and tranquility of the county’s natural areas;
- Some serve as major transportation corridors into the county;
- Some are major commute routes and thus provide scenic relief to commuters; and
- Some are minor roads that serve as the access to rural areas.

The following policies contained in the general plan are relevant to the proposed program:

Policy R-PR 39  The natural scenery, which exists along many of Santa Clara County’s highways, should be protected from land uses and other activities, which would diminish its aesthetic qualities.

Policy R-PR 47  Activities along scenic highways that are of a substantially unsightly nature, such as equipment storage or maintenance, fuel tanks, refuse storage, or processing and service yards, should be screened from view.
Policy R-RC 95  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 R-RC 96  The general approach to scenic resource preservation for the rural unincorporated areas consists of the following strategies:

- Minimize scenic impacts in rural areas through control of allowable development densities.
- Limit development impacts on highly significant resources, such as ridgelines, prominent hillsides, streams, transportation corridors and county entranceways.

Policy R-RC 98  Hillsides, ridgelines, scenic transportation corridors, major county entryways, stream environments, and other areas designated as being of special scenic significance should receive utmost consideration and protection due to their prominence, visibility, and overall contribution to the quality of life in Santa Clara County.

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 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.

Policy C-PR 45  Activities along scenic highways that are of a substantially unsightly nature, such as equipment storage or maintenance, fuel tanks, refuse storage or processing and service yards, should be screened from view.
Standards of Significance

CEQA Guidelines appendix G indicates that a project may have a significant effect on the environment 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 with a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impact Analysis

Methodology

This section evaluates whether the proposed program would result in significant impacts on aesthetic resources. The significance criteria above were used to evaluate the proposed program’s effects on aesthetic resources in comparison to the existing baseline condition. The visual analysis is based on evaluations of aerial and ground-based photographs of the proposed program sites, as included in Figures 9-11 including in Chapter 2, Project Description.

Visual effects were assessed based on the proposed program’s potential to substantially damage scenic resources (e.g., scenic roads, trees, and rock outcroppings) or to degrade the visual character of sites. The evaluation of temporary or short-term visual impacts considers whether construction activities could substantially degrade the existing visual character or quality of the site or surrounding area, as well as the duration over which any such changes would occur. Because of their short-term nature, construction activities are typically considered to have a less-than-significant effect on visual quality.

Actions with long-term visual effects, such as constructing new or altered structures, grading roads, removing trees, and introducing new sources of nighttime light and daytime glare, can permanently alter the landscape in a manner that could affect existing scenic resources and the visual character or quality of an area, depending on the perspective of the viewer and the visual sensitivity of an area.
Environmental Topics Eliminated from Further Analysis

**Scenic Vistas.** Scenic viewpoints within the program area are generally located at relatively high elevations along ridgelines within public open space areas and are typically viewed by recreational hikers, bicyclists, and motorists. Proposed maintenance activities would occur mostly within creek corridors, along and across SJWC access roads, and in the immediate vicinity of SJWC-maintained facilities (including dam structures and intake facilities). Most of these activities would occur in areas that are not open to the public or viewable from public space.

State Route 35 follows the closest ridgeline to proposed maintenance sites. The distance from this roadway to proposed culvert maintenance sites is approximately 0.5 miles. Because of the viewing distance and because views looking toward the culvert maintenance sites from this roadway are obscured by trees and vegetation, none of these sites would be noticeable from scenic vistas. For these same reasons, proposed maintenance activities would not alter existing ridgeline views. Therefore, no impact on scenic vistas would occur.

**Scenic Resources.** There are no state-designated scenic highways within the program area. State Route 17 and a portion of State Route 35 are eligible for designation by Caltrans as scenic highways. Additionally, the county has recommended several scenic rural roads and local roads for scenic protection.

None of the program maintenance sites would be visible from scenic highways or eligible scenic highways, county-designated scenic roads, or local roads that are recommended for scenic protection. The Trout Creek intake site, the closest maintenance site to State Route 17, is accessible from a SJWC maintenance road accessed from State Route 17; however, the intake facility and creek are not visible from State Route 17 due to the narrow canyon setting and the presence of trees and thick vegetation that obscure views of the site from the roadway. None of the maintenance sites are visible from State Route 35 due to distance and the thick vegetation and trees located along the roadway.

Vegetation management and fuel management activities would be conducted in the immediate vicinity of SJWC facilities and along SJWC-maintained access roads. These activities would involve limited removal of dead vegetation, removal of fallen and hazardous trees, and vegetation pruning. These vegetation management activities would not be noticeable from areas open to the public or viewable from public space. Most vegetation and fuel management activities, with the exception of sites located along John Nicholas Trail in Sanborn County Park, would take place on lands that are not open to the public and would not be noticeable from public roadways. Visual impacts to the John Nicholas Trail are discussed in the impacts section below.

For these reasons, the program would have no impacts to scenic resources.
**Light or Glare.** Proposed program maintenance activities would be conducted during daylight hours only. No nighttime lighting would be utilized for maintenance activities. The proposed program would not involve construction of new facilities or modifications to existing facilities that would result in new reflective surfaces or installation of lighting. Therefore, no light or glare impacts would occur.

**Environmental Impacts**

**IMPACT: THE PROGRAM WOULD RESULT IN DEGRADATION TO THE EXISTING VISUAL CHARACTER OF MAINTENANCE SITES (LESS THAN SIGNIFICANT)**

Recreational trails such as the John Nicholas Trail and some SJWC-maintained access roads within the program area are used by recreationists and a few residents. Short-term maintenance activities, including culvert maintenance work, vegetation management, and fuel management, could result in temporary degradation of visual quality of maintenance sites. However, it is noteworthy that most of the maintenance sites (e.g., intake facilities, SJWC access roads, and some culvert maintenance sites) would be in areas that are not open to the public.

**Culvert Maintenance and Construction.** A total of 25 maintenance sites have been identified at trail crossings on the John Nicholas Trail and three culvert maintenance sites have been identified at Ellege Road. Proposed maintenance activities at these sites include installation of erosion protection at inlets and beneath outfalls, repositioning of inlets, culvert replacement and upgrades, new culvert installation, and debris removal.

A few residents that live near Lake Cozzens and Lake Kittredge may have views of construction activities occurring at the three culvert maintenance sites along Ellege Road. These residents would likely have short-term views of a few pieces of construction equipment, construction materials, and a few workers, which would temporarily alter the visual character and quality of the area. Work at these three sites is expected to occur over a two-week period. Implementation of BMP GEN-5, as identified in the Los Gatos Creek Watershed Maintenance Manual (Appendix A), would ensure that all equipment and materials are contained in predetermined staging areas that are located as far as possible from major roadways. Once culvert construction activities are completed, these structures would appear similar to other culverts and the John Nicholas Trail and Ellege Road would be restored to pre-construction conditions. Thus, given the temporary duration of proposed culvert maintenance activities and with implementation of BMP GEN-5, the effect on visual character and quality would be less than significant.
3.0 Environmental Effects

Maintenance Activities in the Vicinity of Lake Cozzens and Lake Kittredge. Some residents would also likely have views of maintenance activities proposed at Lake Cozzens and Lake Kittredge. Activities that may be visible to these residents include limited vegetation management along the dam face of both lakes, tree pruning around the dam, filling burrows along the dam face, maintenance of the access road, and maintenance of the spring diversion box along Ellege Road. Because these activities are currently conducted regularly by SJWC staff, the residents are already accustomed to viewing these particular activities. Implementation of BMP GEN-4, requiring dust management controls, would also reduce the temporary effect on the visual character and quality of this area. For these reasons, ongoing maintenance activities at these lakes would be less than significant.

Vegetation and Fuel Management. Vegetation management activities would entail removing downed, dead, or hazard trees, clearing vegetation snags in channels at facilities, and pruning/thinning vegetation at facilities to maintain a fire-defensible area around the facility. Vegetation management activities would be limited to a 50- to 200-foot radius from SJWC-maintained facilities and structures.

In the short term, these activities could alter the visual character of a maintenance site because targeted vegetation would be removed. Vegetation management would occur in stages over an extended period of time, from one to three seasons in some locations; all vegetation management activities would not occur in all locations at once. Because most of these maintenance activities would not be visible from any areas open to the public or viewable from public space, impacts on the visual character and quality of these sites would not be substantial.

Vegetation management activities that would take place near the culvert maintenance sites along John Nicholas Trail and any SJWC-maintained roads may be noticeable to recreational users. While the removal of vegetation could be perceived as an adverse visual effect, in the long term, clearing of downed/dead vegetation and trees would result in an aesthetically beneficial effect by providing improved access and sightlines along both the trail and SJWC-maintained access roads. For these reasons, and with the inclusion of measures described in BMP GEN-5, vegetation and fuel management activities would not substantially degrade the visual character or quality of the program area, and the impact would be less than significant.

3.2 Air Quality

This section describes the existing air quality conditions for the program area which is located within the San Francisco Bay Area Air Basin (SFBAAB). This section also describes the relevant air quality regulations. Impacts to air quality are described, including air quality significance criteria, methodology used to evaluate significance, and the proposed program’s resulting air
quality impacts. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning air quality impacts were received during the NOP process.

**Environmental Setting**

The study area for air quality impacts is evaluated at both local and regional scales. Air quality at the local scale involves evaluation of the potential for local “hot spots” to result in the program area adjacent to the maintenance sites because of emissions of pollutants of local concern, including carbon monoxide, particulate matter, and toxic air contaminants. Air quality at the regional scale involves evaluation of air pollutants of regional concern such as ozone, ozone precursors, and particulate matter.

**Program Area**

The program area consists of the locations where physical maintenance activities associated with the program would take place. Maintenance activities would occur at SJWC facilities in the upper Los Gatos Creek Watershed as identified in Chapter 2, Project Description. This area is located within the SFBAAB, which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

**San Francisco Bay Air Basin**

The California Air Resources Board has divided California into regional air basins according to topographic air drainage features. The SFBAAB comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, as well as portions of Solano and Yolo counties. Air quality is determined by natural factors such as climate, topography, and meteorology, in addition to the presence of air pollution sources and ambient conditions.

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, all of which distort normal wind flow patterns. BAAQMD divides the SFBAAB into sub-regions with distinct climate and topographic features. The program area is located in the Santa Clara Valley sub-region of the SFBAAB.

**Santa Clara Valley**

The Santa Clara Valley is bounded by San Francisco Bay to the north, mountain ranges to the west and east, and a gradual narrowing of the valley toward the south as it transitions to the
Coyote Valley. Temperatures are typically warm on summer days and cool on summer nights, and winter temperatures are generally fairly mild. Mean maximum temperatures are in the low 80s (in degrees Fahrenheit) during the summer and the high 50s during the winter, and mean minimum temperatures range from the high 50s in the summer to the low 40s in the winter.

Annual precipitation in Santa Clara County averages 18 inches per year for the entire county. Annual precipitation specifically in the Los Gatos Creek Watershed is estimated at between 26 and 46 inches per year, depending on the specific elevation, with higher elevations receiving more precipitation.

Winds in the valley are strongly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. In general, a north-northwesterly breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly breeze flows during the late evening and early morning. In summer, the southern end of the valley sometimes becomes a “convergence zone,” in which air flowing from the Monterey Bay is channeled northward into the southern end of the Santa Clara Valley and converges with the prevailing north-northwesterly winds.

Wind speeds are greatest in spring and summer and weakest in fall and winter. Nighttime and early morning hours are frequently calm in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with occasional winter storms.

The air pollution potential of the Santa Clara Valley is considered to be high. High summer temperatures, stable air, and mountains surrounding the valley combine to promote ozone formation. In addition to the many local sources of pollution, ozone precursors from San Francisco, San Mateo, and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low-level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterly winds in the afternoon. A similar recirculation pattern occurs in winter, affecting levels of carbon monoxide and particulate matter. This movement of air up and down the valley increases the distribution of pollutants substantially.

There are numerous pollution sources in the county. The northern end of the Santa Clara Valley has a high concentration of industry. Some of these industries are sources of airborne toxic emissions as well as criteria air pollutants. In addition, the Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any sub-region in the SFBAAB.
Air Pollutants

The following air pollutants have the potential to occur in the Santa Clara Valley sub-region of the SFBAAB.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distribution of vehicular traffic. CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions (when a low layer of warm air, along with its pollutants, is held in place by a higher layer of cool air), CO concentrations may be distributed more uniformly over an area to some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and thereby reduces the blood’s capacity for carrying oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, impair mental abilities, and cause death.

Ozone. Ozone (O3) is a reactive gas that, in the troposphere (the lowest region of the atmosphere), is a product of the photochemical process involving the sun’s energy. It is a secondary pollutant that is formed when nitrogen oxides (NOX) and volatile organic compounds (VOC) react in the presence of sunlight. Ozone at ground level causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground-level ozone, however, can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some human-made materials such as rubber, paint, and plastics.

Nitrogen Oxides. Nitrogen Oxides (NOX) is a family of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter. The major component of NOX, nitrogen dioxide (NO2), is a reddish-brown gas that is toxic at high concentrations. NOX results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Volatile Organic Compounds. Volatile Organic Compounds (VOCs) are hydrocarbon compounds that are present in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOC emissions are a major precursor to the formation of ozone.

Particulate Matter. Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of various components, including acids, organic chemicals,
metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter, called PM$_{10}$, are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM$_{10}$ particles are typically found near roadways and industrial operations that generate dust. PM$_{40}$ particles are deposited in the thoracic region of the lungs. Fine particles, called PM$_{2.5}$, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. PM$_{2.5}$ particles penetrate deeply into the thoracic and alveolar regions of the lungs.

**Sulfur Dioxide.** Sulfur dioxide (SO$_2$) is a colorless, irritating gas with a “rotten egg” smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO$_2$ particles contribute to poor visibility in the SFBAAB and are a component of PM$_{10}$.

**Lead.** Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is extremely inert (nonreactive) in the environment, so it essentially persists forever. As such, lead is extremely toxic to humans. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract.

Until recent decades, gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, which has resulted in dramatic drops in ambient concentrations of lead.

**Hydrogen Sulfide.** Hydrogen sulfide is associated with geothermal activity, oil and gas production, refining, sewage treatment plant operations, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations and can cause death.

**Sulfates.** Sulfates are the fully oxidized, ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds result primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO$_2$ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO$_2$ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

CARB’s sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.
**Vinyl Chloride.** Vinyl chloride is a colorless gas that does not occur naturally. It is formed when other substances, such as trichloroethane, trichloroethylene, and tetrachloroethylene, are broken down. Vinyl chloride is used to make polyvinyl chloride for a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

**Toxic Air Contaminants.** Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Hundreds of different types of TACs exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage.

Sources of TACs are classified as stationary, area wide, and mobile sources. USEPA maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are included on CARB’s list of TACs (CARB 2013a). According to the California Almanac of Emissions and Air Quality (CARB 2013b), many researchers consider diesel PM to be a primary contributor to health risk from TACs because particles in diesel exhaust carry multiple harmful organic compounds and metals, rather than being a single substance as are other TACs. Unlike many TACs, outdoor diesel PM is not monitored by CARB because no routine measurement method exists. Using the CARB emission inventory’s PM$_{10}$ database, ambient PM$_{10}$ monitoring data, and results from several studies, however, CARB has made preliminary estimates of diesel PM concentrations throughout the state (Office of Environmental Health Hazard Assessment 2001).

**Naturally Occurring Asbestos.** Asbestos is the common name for a group of naturally occurring, fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the ground surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentine. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil. Asbestos that occurs naturally in the environment (NOA) was identified as a TAC in 1986 by CARB. NOA is located in many parts of California and is commonly associated with ultramafic rocks, according to the California Geological Survey’s 2002 special publication, *Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California.*

Some small areas in the southeastern and eastern parts of the upper Los Gatos Creek Watershed may contain NOA (Horizon Water and Environment 2015); however, no ground-disturbing maintenance activities are anticipated to take place in these areas.
Air Quality Attainment and Local Conditions

CARB and USEPA have established ambient air quality standards to protect human health and welfare. Geographic areas are deemed to be in “attainment” if these standards are met or “nonattainment” if they are not met. Nonattainment status is classified by the severity of the nonattainment problem. Marginal, moderate, serious, severe, and extreme nonattainment classifications have been established. Table 4, San Francisco Bay Area Air Basin Attainment Status, shows the attainment status for the SFBAAB.

### Table 4  San Francisco Bay Area Air Basin Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation/Classification</th>
<th>Federal Standards</th>
<th>State Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (1-hour)</td>
<td>No Federal Standard</td>
<td>Nonattainment/</td>
<td>Serious</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ozone (8-hour)</td>
<td>Nonattainment/Marginal</td>
<td>Nonattainment</td>
<td></td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>Attainment</td>
<td>Nonattainment</td>
<td></td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>Nonattainment</td>
<td>Nonattainment</td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>Unclassified/Attainment</td>
<td>Attainment</td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>Unclassified/Attainment</td>
<td>Attainment</td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>Attainment</td>
<td>Attainment</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>Attainment</td>
<td>Attainment</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>No Designation/Classification</td>
<td>Unclassified</td>
<td></td>
</tr>
<tr>
<td>Sulfates</td>
<td>No Federal Standard</td>
<td>Attainment</td>
<td></td>
</tr>
<tr>
<td>Visibility Reducing Particles</td>
<td>No Federal Standard</td>
<td></td>
<td>Unclassified</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>No Federal Standard</td>
<td>Attainment</td>
<td></td>
</tr>
</tbody>
</table>

Source: USEPA 2014; CARB 2014; BAAQMD 2014a

Air Monitoring Data. BAAQMD, CARB, and USEPA operate an extensive air monitoring network to measure progress toward attainment of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The closest air monitoring stations to the program area are the Los Gatos, San Jose Tully, and San Jose Fourth monitoring stations. Table 5, Air Monitoring Data for 2011-2013, shows the most recent three years of available data.
Table 5  Air Monitoring Data for 2011-2013

<table>
<thead>
<tr>
<th>Monitoring Station</th>
<th>Pollutant</th>
<th>Standard</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Exceedances</td>
<td>Maximum Concentration</td>
<td>Exceedances</td>
<td>Maximum Concentration</td>
</tr>
<tr>
<td>Los Gatos</td>
<td>Ozone</td>
<td>1-hour</td>
<td>0</td>
<td>87 ppb</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>Ozone</td>
<td>8-hour</td>
<td>0</td>
<td>75 ppb</td>
<td>0/1²</td>
</tr>
<tr>
<td>Los Gatos</td>
<td>Ozone</td>
<td>1-hour</td>
<td>0</td>
<td>93 ppb</td>
<td>1</td>
</tr>
<tr>
<td>San Jose</td>
<td>CO</td>
<td>1-hour</td>
<td>0</td>
<td>3.1 ppm</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>CO</td>
<td>8-hour</td>
<td>0</td>
<td>2.5 ppm</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>NO₂</td>
<td>1-hour</td>
<td>0</td>
<td>59 ppb</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>NO₂</td>
<td>Annual</td>
<td>0</td>
<td>15 ppb</td>
<td>15 ppb</td>
</tr>
<tr>
<td>San Jose</td>
<td>SO₂</td>
<td>1-hour</td>
<td>0</td>
<td>2.5 ppb</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>SO₂</td>
<td>24-hour</td>
<td>0</td>
<td>1.4 ppb</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>PM₁₀</td>
<td>24-hour</td>
<td>0/5²</td>
<td>58 μg/m³</td>
<td>0/1²</td>
</tr>
<tr>
<td>San Jose</td>
<td>PM₁₀</td>
<td>Annual</td>
<td>0</td>
<td>22.3 μg/m³</td>
<td>18.8 μg/m³</td>
</tr>
<tr>
<td>San Jose</td>
<td>PM₂.₅</td>
<td>24-hour</td>
<td>6</td>
<td>57.7 μg/m³</td>
<td>2</td>
</tr>
<tr>
<td>San Jose</td>
<td>PM₂.₅</td>
<td>Annual</td>
<td>0</td>
<td>12.4 μg/m³</td>
<td>9.1 μg/m³</td>
</tr>
</tbody>
</table>

Source: BAAQMD 2014b

Notes: ppb = parts per billion; pm = parts per million; μg/m³ = micrograms per cubic meter; "The first value represents the number of days on which the federal standard was exceeded. The second number is the number of days on which the state standard was exceeded.

**TACs in SFBAAB.** In 2006, BAAQMD undertook the creation of a regional emissions inventory for TACs from major sources of emissions in the Bay Area, including nearly 200 toxic gases or particles. Emissions inventories for 2005 and 2015 were input to a regional air quality model to predict concentrations of key toxic compounds and the associated cancer risk. Some of the key findings from this work were that diesel PM contributed more than 85 percent of the total inventoried cancer risk and that simulated potential cancer risk from TACs is highest near major diesel PM sources. Another key finding is that cancer risk from TACs is dropping: when emissions inputs accounted for state diesel regulations and other reductions, modeled risk values were projected to drop by more than 50 percent between 2005 and 2015. Measurement-based assessments of cancer risk from air pollution show similar reductions. According to the most recent analysis (for 2012), the average regional cancer risk was about 300 per million. That is, for every million residents exposed for 70 years to current levels of TACs, 300 would be expected to develop cancer as a result of the exposure. According to the analysis, more than 70 percent of the
cancer risk related to air pollution in the Bay Area is attributable to diesel PM, and 90 percent of the total risk is attributable to three compounds: diesel PM, benzene, and 1,3-butadiene. All three of these compounds are produced through fuel combustion (BAAQMD 2014c).

**Sensitive Receptors.** Sensitive receptors are those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with pre-existing serious health problems affected by air quality (e.g., asthma) (CARB 2005). Examples of locations that contain sensitive receptors are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences include houses, apartments, and senior living complexes. Medical facilities can include hospitals, convalescent homes, and health clinics. Playgrounds include play areas associated with parks or community centers.

Based on the program area’s remote setting, nearby sensitive receptors are scattered residences, elementary schools, daycare facilities, and potential recreational users.

**Regulatory Setting**

This sub-section discusses the federal, state, and local laws, regulations, and policies that pertain to air quality in the program area.

**Federal Laws, Regulations, and Policies**

USEPA is responsible for establishing the National Ambient Air Quality Standards (NAAQS), enforcing the federal Clean Air Act (CAA), and regulating transportation-related emission sources, such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. USEPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet stricter emission standards established by CARB, as described below.

**Clean Air Act.** The CAA required USEPA to establish NAAQS, which are shown in Table 6, State and Federal Ambient Air Quality Standards. The CAA also required each state to prepare an air quality control plan.

**Corporate Average Fuel Economy Standards.** The Corporate Average Fuel Economy standards, first enacted by Congress in 1975, require vehicle manufacturers to comply with gas mileage or fuel economy standards. These standards are set and regulated by the National Highway Traffic Safety Administration, with testing and data support from USEPA.

The issued rules include fuel economy standards for both light- and heavy-duty vehicles. On September 15, 2011, USEPA and National Highway Traffic Safety Administration issued a final rule on greenhouse gas (GHG) standards and fuel efficiency standards for medium- and heavy-

Table 6  
State and Federal Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards ¹</th>
<th>National Standards ²</th>
<th>Method ⁴</th>
<th>Secondary ³,⁵</th>
<th>Method ⁷</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O₃)</td>
<td>1-Hour</td>
<td>0.09 ppm (180 µg/m³)</td>
<td>—</td>
<td>Ultraviolet Photonometry</td>
<td>—</td>
<td>Ultraviolet Photonometry</td>
</tr>
<tr>
<td></td>
<td>8-Hour</td>
<td>0.070 ppm (137 µg/m³)</td>
<td>0.075 ppm (147 µg/m³)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM₁₀)⁶</td>
<td>24 Hour</td>
<td>50 µg/m³</td>
<td>150 µg/m³</td>
<td>Same as Primary Standard</td>
<td>Inertial Separation and Gravimetric Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>20 µg/m³</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)⁶</td>
<td>24 Hour</td>
<td>—</td>
<td>—</td>
<td>35 µg/m³</td>
<td>Same as Primary Standard</td>
<td>Inertial Separation and Gravimetric Analysis</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>12 µg/m³</td>
<td>12 µg/m³</td>
<td>15 µg/m³</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 Hour</td>
<td>20 ppm (23 mg/m³)</td>
<td>35 ppm (40 mg/m³)</td>
<td>—</td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
<td></td>
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<tr>
<td></td>
<td>8 Hour</td>
<td>9.0 ppm (10 mg/m³)</td>
<td>9 ppm (10 mg/m³)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>8 Hour (Lake Tahoe)</td>
<td>6 ppm (7 mg/m³)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Pollutant</td>
<td>Averaging Time</td>
<td>California Standards</td>
<td>National Standards</td>
<td>Secondary Standard</td>
<td>Method</td>
<td></td>
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<tr>
<td>---------------------------------</td>
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<td>---------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)°</td>
<td>1 Hour</td>
<td>0.18 ppm (339 µg/m³)</td>
<td>100 ppb (188 µg/m³)</td>
<td>—</td>
<td>Gas Phase Chemiluminescence</td>
<td></td>
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<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>0.030 ppm (57 µg/m³)</td>
<td>0.053 ppm (100 µg/m³)</td>
<td>Same as Primary Standard</td>
<td>—</td>
<td></td>
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<tr>
<td>Sulfur Dioxide (SO₂)°</td>
<td>1-hour</td>
<td>0.25 ppm (655 µg/m³)</td>
<td>75 ppb (196 µg/m³)</td>
<td>—</td>
<td>Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3-hour</td>
<td>—</td>
<td>—</td>
<td>0.5 ppm (1300 µg/m³)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24-hour</td>
<td>0.04 ppm (105 µg/m³)</td>
<td>0.14 ppm (for certain areas)°</td>
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<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>—</td>
<td>0.030 ppm (for certain areas)°</td>
<td>—</td>
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<td></td>
</tr>
<tr>
<td>Lead°</td>
<td>30-day average</td>
<td>1.5 µg/m³</td>
<td>—</td>
<td>—</td>
<td>High Volume Sampler and Atomic Absorption</td>
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</tr>
<tr>
<td></td>
<td>Calendar quarter</td>
<td>—</td>
<td>1.5 µg/m³ (for certain areas)°</td>
<td>Same as Primary Standard</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rolling 3-month average</td>
<td>—</td>
<td>0.15 µg/m³</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Visibility Reducing Particles°</td>
<td>8-hour</td>
<td>See footnote 13</td>
<td>Beta Attenuation and Transmittance through Filter Tape</td>
<td>No National Standards</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

Footnotes:
1. California Standards
2. National Standards
3. Concentration
4. Method
5. Primary Standard
7. Method
8. Nitrogen Dioxide (NO₂)°
9. Sulfur Dioxide (SO₂)°
10. Lead°
11. Visibility Reducing Particles°
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards ¹</th>
<th>National Standards ²</th>
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<tr>
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<td>Concentration³</td>
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<td></td>
<td>Method⁴</td>
<td>Secondary³,6</td>
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<td>Method⁷</td>
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<tr>
<td>Sulfates</td>
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<td>25 µg/m³</td>
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<td>Hydrogen Sulfide</td>
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<td>Fluorescence</td>
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<tr>
<td>Vinyl Chloride²⁰</td>
<td>24-hour</td>
<td>0.01 ppm (26 µg/m³)</td>
<td>Gas Chromatography</td>
</tr>
</tbody>
</table>

**Source:** CARB 2013a

**Note:**

1. ppm = parts per million; ppb = parts per billion; mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter; California standards for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM₂.₅, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Title 17 CCR Section 70200.

2. National standards (other than O₃, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM₂.₅, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. See USEPA for further clarification and current national policies; Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°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.

3. Any equivalent measurement method that can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health; National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

5. Reference method as described by USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by USEPA.

6. On December 14, 2012, the national annual PM₂.₅ primary standard was lowered from 15.0 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM₂.₅ standards (primary and secondary) were retained at 35 µg /m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

7. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb); California standards are in parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is equal to 0.100 ppm; On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-
hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated in nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

8. Note that the 1-hour national standard is in ppb; California standards are in ppm. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is equal to 0.075 ppm; CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level 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.

9. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated in nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

10. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents: “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Non-road Emission Regulations. USEPA has adopted emissions standards for different types of non-road engines, equipment, and vehicles. For non-road diesel engines, USEPA has adopted multiple tiers of emission standards.

USEPA signed a final rule on May 11, 2004, introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 CFR 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of PM and NOx be further reduced by about 90 percent. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, such as catalytic particulate filters and NOx absorbers, USEPA also mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California, which has only limited authority to set emission standards for new non-road engines. The CAA preempts California’s authority to control emissions from new farm and construction equipment less than 175 horsepower (CAA Section 209[e][1][A]) and requires California to receive authorization from USEPA for controls over other off-road sources (CAA Section 209[e][2][A]).

State Laws, Regulations, and Policies

The California Environmental Protection Agency (Cal EPA) is a state agency that includes CARB, the State Water Resources Control Board, nine Regional Water Quality Control Boards, the Integrated Waste Management Board, the California Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment, and the California Department of Pesticide Regulation. The mission of Cal EPA is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.
California Clean Air Act. The California Clean Air Act requires nonattainment areas to achieve and maintain the health-based CAAQS by the earliest practicable date. The California Clean Air Act is administered by CARB at the state level. At the regional level, local air quality management districts are required to develop plans and control programs for attaining the state standards.

CARB is responsible for ensuring implementation of the California Clean Air Act, meeting state requirements of the federal CAA, and establishing the CAAQS. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

In-Use Off-Road Diesel Vehicle Regulation. In 2007, CARB adopted a regulation to reduce DPM and NO\textsubscript{X} emissions from in-use off-road heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines.

Truck and Bus Regulation. On December 12, 2008, CARB approved a new regulation to substantially reduce emissions of diesel PM, NO\textsubscript{X}, and other pollutants from existing on-road diesel-fueled vehicles operating in California. The regulation requires affected trucks and buses to meet performance standards and requirements between 2011 and 2023. Affected vehicles included on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The regulation was updated in 2014, with revisions that provide more compliance flexibility, expansion of the low-use vehicle exemption, new flexibility options for heavy cranes, and extended use of retrofit PM filters. Therefore, heavy-duty trucks used in proposed program activities would be required to comply with this regulation.

Heavy-Duty On-Board Diagnostic System Regulations. In 2004, CARB adopted a regulation requiring on-board diagnostic systems on all 2007 and later model year heavy-duty engines and vehicles (gross vehicle weight rating greater than 14,000 pounds) in California. CARB subsequently adopted a comprehensive on-board diagnostic systems regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty on-board diagnostic systems regulation was updated in 2010 and 2013, with revisions to enforcement requirements, testing requirements, and implementation schedules. Therefore, heavy-duty trucks used for proposed program activities would be required to comply with the heavy-duty on-board diagnostic regulatory requirements.

Heavy-Duty Vehicle Inspection Program. This program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and engine certification label compliance. Any heavy-duty vehicle (gross vehicle weight rating greater than 6,000 pounds) traveling in California, including vehicles registered in other states and foreign countries, may be tested.
Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found in violation are subject to penalties starting at $300 per violation. Heavy-duty trucks used for proposed program activities would be subject to the inspection program.

California Standards for Diesel Fuel Regulations. These regulations require diesel fuel with sulfur content of 15 parts per million (ppm) or less (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

Airborne Toxic Control Measures. CARB regulates TACs by implementing various airborne toxic control measures aimed at reducing emissions associated with toxic substances.

Naturally Occurring Asbestos ATCMs. These regulations ensure that activities in areas containing NOA must implement asbestos dust mitigation measures, and they restrict the use of asbestos-containing material on road surfacing to less than 0.25 percent. Projects that disturb more than 1 acre in areas containing NOA must submit and obtain local air district approval of an asbestos dust mitigation plan. The plan must specify how the operation will minimize emissions and must address specific emission sources.

ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling. On October 20, 2005, CARB approved an airborne toxic control measure to limit diesel-fuel commercial motor vehicle idling. This regulation was a follow-up to previous idling airborne toxic control measures, and it consists of new engine and in-use truck requirements, as well as idling emission performance standards. The regulation requires 2008 and newer model year heavy-duty diesel-fueled engines to be equipped with a nonprogrammable engine shutdown system that automatically shuts down the engine after five minutes of idling or, optionally, meets a stringent NOX idling emission standard (i.e., 30 grams per hour). The regulation also applies to the operation of in-use trucks, requiring operators of both in-state and out-of-state registered, sleeper berth-equipped trucks to manually shut down their engines when idling more than five minutes at any location within California, beginning in 2008. Affected vehicles included diesel-fueled commercial vehicles with a gross vehicle weight rating greater than 10,000 pounds. The regulation contains exceptions for equipment that requires the engine to remain on in order to operate, such as ready-mix concrete trucks. Therefore, trucks used for vendor delivery of materials for proposed program activities would be required to comply with the commercial vehicle idling regulatory requirements.

Portable Engine Air Toxic Control Measure. The Portable Engine Air Toxic Control Measure is designed to reduce the PM emissions from portable diesel-fueled engines rated at 50 brake horsepower or larger. This regulations requires that a fleet of portable engines must meet emission standards that reduce the amount of PM emissions over time.
Portable Equipment Registration Program. The statewide Portable Equipment Registration Program establishes a system to uniformly regulate portable engines and portable engine-driven equipment units. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain individual permits from air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program to operate their equipment anywhere in the state. Operation of registered portable engines may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower are exempt from this program; therefore, some of the engines used for the proposed program would be exempt, while others would be required to comply with this regulation.

Regional Laws, Regulations, and Policies

BAAQMD is responsible for implementing air quality regulations on a regional level, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS. BAAQMD also implements permit programs for the construction, modification, and operation of air pollution sources and enforces air pollution statutes and regulations governing stationary sources. With CARB oversight, BAAQMD also administers local regulations. BAAQMD has implemented several regulations and rules that are relevant to the proposed program. BAAQMD Regulation 2, Rule 1 – General Requirements prohibits any source from causing a public nuisance, defines what equipment is subject to permitting/new source review requirements, and exempts portable stationary equipment (e.g., generators or soil screeners) from permitting if they comply with all applicable requirements of the state Portable Equipment Registration Program. Other general rules, such as Regulation 6 – Particulate Matter and Visible Emissions (for dust control) would also apply to all proposed program activities.

BAAQMD has adopted several air quality improvement plans, as required by state and federal regulations, to ensure progress in attaining and maintaining the NAAQS and CAAQS. These plans are described below.

BAAQMD 2010 Clean Air Plan. BAAQMD adopted the Bay Area 2010 Clean Air Plan (or Bay Area CAP; BAAQMD 2010a) to improve Bay Area air quality and meet public health goals. More specifically, the control strategy described in the Bay Area 2010 Clean Air Plan is designed to reduce emissions and decrease ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

The Bay Area 2010 Clean Air Plan addresses four categories of pollutants: (1) ground-level ozone and its key precursors, reactive organic gases (ROG) and NOX; (2) particulate matter, primarily PM2.5, as well as precursors to secondary PM2.5; (3) air toxics; and (4) GHGs. The control
strategy in the *Bay Area 2010 Clean Air Plan* describes stationary-source measures, transportation control measures, mobile-source measures, land use and local impact measures, energy and climate measures, and further study measures to reduce air pollutants (BAAQMD 2010a).

**Particulate Matter Plan.** To fulfill federal air quality planning requirements, BAAQMD adopted a PM$_{2.5}$ emissions inventory for 2010 at a public hearing on November 7, 2012. This was transmitted to CARB for inclusion in the California State Implementation Plan. An informational report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area* was also produced to help guide BAAQMD’s ongoing efforts to analyze and reduce PM in the Bay Area (BAAQMD 2012a). Several measures for reducing PM emissions in the Bay Area were detailed in the multi-pollutant approach contained in the Bay Area CAP.

On January 9, 2013, USEPA issued a final rule determining that the San Francisco Bay Area has attained the 24-hour PM$_{2.5}$ NAAQS; this action suspended federal State Implementation Plan planning requirements for the Bay Area (BAAQMD 2013).

**Bay Area 2005 Ozone Strategy.** BAAQMD prepared the *Bay Area 2005 Ozone Strategy* in cooperation with the Metropolitan Transportation Commission and the Association of Bay Area Governments (BAAQMD 2006). The strategy is a roadmap showing how the San Francisco Bay Area will achieve compliance with the CAAQS 1-hour standard for ozone as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with MTC, local governments, and transit agencies (BAAQMD 2012b).

**BAAQMD 2001 Ozone Attainment Plan.** BAAQMD adopted the *San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard* in 2001 in response to US EPA’s finding that the Bay Area was in nonattainment for the NAAQS for ozone. The plan includes a control strategy for ozone and its precursors to ensure reduction in emissions from stationary sources, mobile sources, and the transportation sector (BAAQMD 2001).

**BAAQMD CEQA Significance Thresholds.** The State CEQA Guidelines recommend that criteria established by the local air district should be relied upon to make determinations of significance regarding air quality impacts. BAAQMD has developed CEQA guidelines to assist local jurisdictions in evaluating potentially adverse impacts on air quality. The most recent CEQA guidelines were updated in 2012 (BAAQMD 2012c). BAAQMD developed quantitative thresholds of significance for its CEQA guidelines in 2010 (2010 Thresholds). BAAQMD’s adoption of the 2010 Thresholds was challenged in court (*California Building Industry Association v. Bay Area Air Quality Management District*, Superior Court Alameda County, March 5, 2012, No.
RG10-548693), but a First District Court of Appeal ruling in 2013 affirmed the agency’s adoption of the thresholds (218 Cal. App. 4th 1171, August 13, 2013), finding that they were adopted based on substantial evidence and their adoption is not subject to CEQA review. The Court of Appeal’s decision was appealed to the California Supreme Court, which granted limited review. The Supreme Court limited the scope of review to determining under what circumstances, if any, CEQA requires an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project, and determined that in general, CEQA does not require this analysis. Since the decision in December 2015, BAAQMD has not acted to modify or re-instate the challenged thresholds, and recommends that lead agencies determine appropriate air quality thresholds of significance based on substantial evidence in the record.

For the air quality analysis in this EIR, the 2010 thresholds were used because, in the process to prepare the thresholds and the 2010 CEQA Guidelines, the BAAQMD provided substantial evidence demonstrating how the thresholds were developed, and the City has determined that the evidence indicates the thresholds are valid.

BAAQMD released “Proposed Thresholds of Significance” in 2009, which listed the proposed thresholds for criteria pollutants, GHGs, community risk and hazards, and odors. BAAQMD researched existing and projected sources of air quality contaminants and designed the 2010 thresholds to comply with state and federal standards. The report “provides the substantial evidence in support of the thresholds of significance…” (BAAQMD 2009). The thresholds for criteria pollutants were developed through a quantitative examination of the efficacy of fugitive dust mitigation measures and a quantitative examination of statewide nonattainment emissions. This use of the 2010 thresholds is consistent with BAAQMD’s direction that thresholds should be based on substantial evidence.

**Local Laws, Regulations, and Policies**

**Santa Clara County General Plan.** The following policies contained in the *Santa Clara County General Plan* (SCC 1994) are relevant to the proposed program:

**Policy HS 1** Ambient air quality for Santa Clara County should comply with standards set by state and federal law.

**Policy C-HS 3** Countywide or multi-jurisdictional planning by the cities and County should promote efforts to improve air quality and maximize the effectiveness of implementation efforts. Guidance and assistance from the BAAQMD shall be sought in the preparation of coordinated, multi-jurisdictional plans as well as in environmental review of projects that have potential for regionally-significant air quality impacts.
Policy C-HS 12 Measures to reduce particulate matter pollution originating from quarrying, road and building construction, industrial processes, unpaved parking lots, and other sources should be encouraged.

Santa Clara County recently updated the Health Element of its General Plan. In August 2015, the County Board of Supervisors adopted the Health Element (SCC 2016). Relevant policies related to air quality are as follows:

Policy HE-G.1 Air Quality Environmental Review. Comply with the BAAQMD project- and plan-level thresholds of significance for air pollutants and GHG emissions.

Policy HE-G.2 Coordination with Regional Agencies. Coordinate with BAAQMD to implement stationary and area source emission measures.

Policy HE-G.3 Fleet Upgrades. Promote BAAQMD mobile source measures that reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.

Policy HE-G.4 Off-road Sources. 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.

Policy HE-G.5 VMT Reduction. Support efforts to reduce vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion to reduce emissions from mobile sources. These efforts may include improved transit service, better roadway system efficiency, transportation demand management, parking and roadway pricing strategies, and growth management measures.

Policy HE-G.10 Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and GHG emissions.


Policy HE-G.16 Heat Island Mitigation. Support urban greening and the use of green infrastructure to minimize the urban heat island effect.
Policy HE-G.19 Vector Control Coordination. Continue coordination between the Department of Environmental Health, Public Health Department, and other State and local agencies to ensure that vector populations are managed to protect public health and maintain ecological integrity.

Policy HE-G.20 Monitor for Vectors and Infectious Diseases. Continue to monitor specific vector-borne and infectious diseases, such as West Nile Virus, Dengue, and Lyme Disease, to better understand emerging public health threats due to climate change.

Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) (refer to the BAAQMD air quality thresholds of significance presented in Table 9 later in this section);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

Impact Analysis

Methodology

This section describes the methods used to evaluate whether the maintenance activities of the program would result in significant impacts related to air quality and odors. Emissions associated with maintenance activities, including off-road equipment such as chainsaws, bulldozers, tractors, excavators, pumps, and generators, material hauling vehicles, and worker commuting, have been quantified. Emissions were estimated using 2015 emission factors from CARB’s In-Use Off-road Equipment 2011 Inventory Model, OFFROAD 2007 and EMFAC2011. Sulfur oxide emissions were not quantified because these are generally controlled in mobile sources through low-sulfur fuel requirements.
The proposed program would involve maintenance activities conducted on an annual basis. To make conservative emission estimates, this analysis assumes that one piece of each off-road equipment type may be operating for 8 hours per day, except for pumps that would operate 24 hours per day. The analysis assumes three worker round trips and 18 material hauling round trips per day with a total trip length of 40 miles per round trip. The work schedule was conservatively assumes to be 260 working days per year.

Based on these assumptions, shows the maximum daily emissions of criteria pollutants that could occur with maintenance program activities. Table 7, Maximum Daily Criteria Pollutant Emissions, shows the maximum daily emissions of criteria pollutants that could occur with maintenance program activities. Further details regarding the emission calculations can be found in Appendix D.

### Table 7 Maximum Daily Criteria Pollutant Emissions

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Activity</th>
<th>Horsepower</th>
<th>Maximum Daily Emissions (pounds/day)</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
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<tbody>
<tr>
<td>Chainsaw</td>
<td>8 hours</td>
<td>2.49</td>
<td></td>
<td>1.93</td>
<td>3.49</td>
<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
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<tr>
<td>Excavator</td>
<td>8 hours</td>
<td>163</td>
<td></td>
<td>0.44</td>
<td>2.80</td>
<td>4.92</td>
<td>0.24</td>
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<tr>
<td>Rubber Tired Dozer</td>
<td>8 hours</td>
<td>255</td>
<td></td>
<td>1.32</td>
<td>4.42</td>
<td>14.22</td>
<td>0.66</td>
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<tr>
<td>Tractor</td>
<td>8 hours</td>
<td>96</td>
<td></td>
<td>0.37</td>
<td>1.55</td>
<td>3.38</td>
<td>0.26</td>
<td>0.26</td>
</tr>
<tr>
<td>Pumps</td>
<td>24 hours</td>
<td>53</td>
<td></td>
<td>1.41</td>
<td>7.37</td>
<td>10.03</td>
<td>0.75</td>
<td>0.75</td>
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<tr>
<td>Generator</td>
<td>8 hours</td>
<td>66</td>
<td></td>
<td>0.56</td>
<td>3.01</td>
<td>4.10</td>
<td>0.30</td>
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<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Activity</th>
<th>Trip Length</th>
<th>Maximum Daily Emissions (pounds/day)</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker Trips</td>
<td>3 trips</td>
<td>40 miles</td>
<td></td>
<td>0.05</td>
<td>0.58</td>
<td>0.06</td>
<td>0.01</td>
<td>0.01</td>
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<tr>
<td>Hauling Trips</td>
<td>18 trips</td>
<td>40 miles</td>
<td></td>
<td>0.39</td>
<td>1.71</td>
<td>14.83</td>
<td>0.35</td>
<td>0.24</td>
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<tr>
<td><strong>Total Daily Emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td>6.46</td>
<td>24.92</td>
<td>51.58</td>
<td>2.59</td>
<td>2.47</td>
</tr>
</tbody>
</table>

**Source:** BAAQMD 2010b

**Note:** BMPs = best management practices

Fugitive dust emissions were not quantified but were evaluated qualitatively, assuming implementation of BAAQMD’s Basic Construction Mitigation Measures. Exposure of sensitive receptors to TACs was evaluated qualitatively based on the duration and location of potential maintenance activities near sensitive receptors. Odors were evaluated qualitatively based on the...
lack of a significant odor source that requires a screening distance evaluation being associated with the proposed program. Table 8, Proposed Program Maximum Daily Criteria Pollutant Emissions, shows the annual emissions of criteria pollutants that could occur with maintenance program activities. Further details regarding the emission calculations can be found in Appendix D.

Table 8 Proposed Program Annual Criteria Pollutant Emissions

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Activity</th>
<th>Horsepower</th>
<th>Horsepower</th>
<th>Annual Emissions (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ROG</td>
</tr>
<tr>
<td>Chainsaw</td>
<td>8 hours</td>
<td>2.49</td>
<td></td>
<td>0.25</td>
</tr>
<tr>
<td>Excavator</td>
<td>8 hours</td>
<td>163</td>
<td></td>
<td>0.06</td>
</tr>
<tr>
<td>Rubber Tired Dozer</td>
<td>8 hours</td>
<td>255</td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td>Tractor</td>
<td>8 hours</td>
<td>96</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Pumps</td>
<td>24 hours</td>
<td>53</td>
<td></td>
<td>0.18</td>
</tr>
<tr>
<td>Generator</td>
<td>8 hours</td>
<td>66</td>
<td></td>
<td>0.07</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Activity</th>
<th>Trip Length</th>
<th>Trip Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worker Trips</td>
<td>3 trips</td>
<td>40 miles</td>
<td></td>
</tr>
<tr>
<td>Hauling Trips</td>
<td>18 trips</td>
<td>40 miles</td>
<td></td>
</tr>
<tr>
<td><strong>Total Annual Emissions</strong></td>
<td></td>
<td>0.84</td>
<td>3.24</td>
</tr>
</tbody>
</table>

|                       |          | 6.71        | 0.34        |
|                       |          | 0.32        |             |

Source: BAAQMD 2010b

Note: BMPs = best management practices

BAAQMD has established mass emission thresholds of significance to determine if air pollutant emissions would contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase of criteria pollutant such that the air basin would be designated in nonattainment for AAQS. These mass emissions thresholds are shown in Table 9, BAAQMD Air Quality Thresholds of Significance.

BAAQMD recommends implementing BMPs for all projects to reduce fugitive dust emissions. With implementation of fugitive dust BMPs, as required by mitigation measures identified in this EIR, impact of fugitive dust emissions to be less than significant.

BAAQMD established screening criteria that specify an acceptable distance between sensitive receptors and common sources of odors, such as landfills and wastewater treatment plants. BAAQMD also specifies that an odor source with five or more confirmed complaints per year
averaged over three years would be considered to have a significant impact on receptors within the screening distance. BAAQMD acknowledges that a lead agency has discretion under CEQA to use other established odor detection thresholds or other significance thresholds for CEQA review. Because the proposed program does not involve any odor sources found in BAAQMD’s screening criteria, a qualitative assessment of potential odor sources and their impact is used.

### Table 9  BAAQMD Air Quality Thresholds of Significance

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Average Daily Emissions (pounds per day)</th>
<th>Annual Emissions (tons per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROG</td>
<td>54</td>
<td>10</td>
</tr>
<tr>
<td>NOx</td>
<td>54</td>
<td>10</td>
</tr>
<tr>
<td>PM₁₀ (Exhaust)</td>
<td>82</td>
<td>15</td>
</tr>
<tr>
<td>PM₂.₅ (Exhaust)</td>
<td>54</td>
<td>10</td>
</tr>
<tr>
<td>PM₁₀/PM₂.₅ (Fugitive Dust)</td>
<td>Best Management Practices (BMPs)</td>
<td>None</td>
</tr>
<tr>
<td>Local CO</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Source: BAAQMD 2010b

Note: BMPs = best management practices

### Environmental Impacts

**IMPACT: THE PROGRAM HAS LESS THAN SIGNIFICANT POTENTIAL TO CONFLICT WITH IMPLEMENTATION OF POLICIES REGARDING AIR QUALITY (LESS THAN SIGNIFICANT)**

The program would have a significant impact if it would conflict with or impair implementation of applicable air quality plans. Applicable air quality plans include the *Bay Area 2005 Ozone Strategy*, the *Bay Area 2010 Clean Air Plan*, and specific *Santa Clara County General Plan* policies.

The *Bay Area 2005 Ozone Strategy* includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented
through transportation programs in cooperation with the Metropolitan Transportation Commission, local governments, and transit agencies. The *Bay Area 2010 Clean Air Plan* includes a control strategy that addresses stationary sources, mobile sources, transportation control, land use and local impact, and energy and climate, and includes additional measures to control ozone and its precursors (ROG and NOX), PM10, PM2.5, and TACs. The *Santa Clara County General Plan* has similar policies that aim to improve the county’s air quality through emission source reduction strategies.

The proposed maintenance program would involve temporary air pollutant emissions generated by various maintenance activities, but would not result in induced growth that would then result in a permanent new source of emissions. The maintenance activities would be consistent with strategies that aim to avoid excess emissions, including limiting vehicle idling. The proposed program does not include any specific source activities covered in the *Bay Area 2010 Clean Air Plan* or *Bay Area 2005 Ozone Strategy*. Proposed program maintenance activities would involve land uses that are consistent with those anticipated in the *Santa Clara County General Plan* for long-range air quality planning, and would not facilitate further growth.

As maintenance activities associated with the proposed program would result in new emissions of air pollutants, there is potential to conflict with applicant air quality plans. However, potential impacts would be less than significant.

**IMPACT: PROGRAM ACTIVITIES HAVE THE POTENTIAL TO VIOLATE ROG, NOX, PM10, PM2.5, CO, OR SOX SIGNIFICANCE THRESHOLDS (LESS THAN SIGNIFICANT)**

The SFBAAB is a state and federal nonattainment area for ozone and PM2.5, and a state nonattainment area for PM10. A project would have a significant impact if it would contribute substantially to these air quality violations. A substantial contribution is defined as a contribution above BAAQMD’s CEQA thresholds of significance for criteria pollutants, including ozone precursors ROG and NOX.

The estimated maximum daily emissions associated with the proposed program are shown in Table 7, *Maximum Daily Criteria Pollutant Emissions*. As shown in the table, the maximum daily emissions for all criteria pollutants are below the BAAQMD mass emission significance thresholds (*Table 9, BAAQMD Air Quality Thresholds of Significance*). Based on a conservative assumption that work activity would occur for 260 days per year, the proposed program’s annual emissions are shown in *Table 8, Annual Criteria Pollutant Emissions*.

Although potential impacts would be less than significant, in order to further ensure that emissions of all criteria pollutants from program activities remain unsubstantial, the BMP GEN-4 would apply, requiring Bay Area Air Quality Management District’s (BAAQMD’s) Basic Dust Control Measures at maintenance sites.
IMPACT: PROGRAM ACTIVITIES HAVE A POTENTIAL TO EXPOSE SENSITIVE RECEPTORS TO POLLUTANT CONCENTRATIONS (LESS THAN SIGNIFICANT)

Maintenance activities could result in the generation of TACs, specifically diesel PM, from off-road equipment exhaust emissions. Because of the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operated near sensitive receptors. Furthermore, proposed program potential impacts would be most substantial adjacent to the maintenance sites, and impacts would decrease rapidly with distance. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). Most proposed maintenance sites are not near any of the sensitive receptors within the proposed program area. In addition, most maintenance activities would not occur in the same area from year to year. As such, potential impacts related to exposing sensitive receptors to TACs would be less than significant.

The proposed maintenance program includes limited application of herbicides along dam faces (e.g., at Lake Elsman) and along access roads to establish firebreaks. Herbicides may contain TACs that have the potential to become airborne during application. These herbicides would be applied according to BMP VEG-4, which requires herbicides to be applied consistent with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) label instructions and use conditions issued by USEPA, CDPR, and the Santa Clara County Agricultural Commissioner that are designed to protect both the applicator and downwind bystanders. Through implementation of BMP VEG-4, potential impacts related to exposure of sensitive receptors to TACs in herbicides would be less than significant.

Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function. Any activity in that raises dust (e.g., gardening, hiking, off-road vehicle use, or construction work) in an area with NOA may cause exposure to airborne asbestos. No health threat would result if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, however, these thin fibers irritate tissues and resist the body's natural defenses. The proposed program area includes locations that may contain NOA. Although the current list of ground-disturbing maintenance sites does not include areas known to contain NOA, NOA is present in areas southeast and east of the upper Los Gatos Creek Watershed (Horizon Water and Environment 2015).

The health risk attributable to NOA is difficult to quantify and has not been estimated by BAAQMD for this region. Disturbances of NOA could occur during excavation and other ground-disturbing activities, including road and culvert improvements. Currently, no access road improvements or other maintenance activities are proposed in areas known to contain asbestos.
Proposed program maintenance activities would be required to implement BMP GEN-21 to ensure that maintenance activities avoid areas containing NOA. In the event that maintenance activities in areas containing NOA are necessary, BMP GEN-21 requires SJWC to comply with the Asbestos ATCM for Construction, Grading, Quarrying and Surface Mining Operations (17 CCR 93105). Compliance with the Asbestos ATCM as required by BMP GEN-21 would ensure that health impacts from potential asbestos exposure would be less than significant.

Implementation of BMP VEG-4 and BMP GEN-21, would ensure protection of human health, including maintenance workers and nearby sensitive receptors, and would ensure that TACs such as herbicides, DPM, and asbestos would not expose sensitive receptors to substantial levels of air pollution. These measures would reduce the amount and likelihood of these TACs being dispersed in the air. Therefore, with implementation of multiple BMPs, potential impacts on sensitive receptors would be reduced to a less-than-significant level.

**IMPACT: PROGRAM ACTIVITIES HAVE POTENTIAL TO CREATE OBJECTIONABLE ODORS (LESS THAN SIGNIFICANT)**

Proposed program maintenance activities would not create substantial objectionable odors. Odors associated with the intermittent operation of gasoline- and diesel-powered equipment may be detected by nearby sensitive receptors, but these odors would be of short duration and would not affect a substantial number of people. Excavated soil or sediment may contain organic material that is decaying, which may create an objectionable odor. The intensity of the odor perceived by a receptor would depend on the distance of the receptor from the maintenance activities and the amount and quality of the exposed soil material. The locations of proposed maintenance activities would be limited and would be conducted in a rural area and not located near a large number of receptors.

However, the proposed program would not create permanent or long-term objectionable odors during maintenance activities. Therefore, any odors that could be produced would be short term and temporary, and potential impacts would be less than significant.

### 3.3 Biological Resources

This section presents the environmental setting, regulatory setting, and potential impacts of the proposed program related to biological resources. The impact analysis describes the methodology used to evaluate significance and then presents the impact evaluation.

No comments concerning biological resources impacts were received during the NOP process. Note that the program area is located close to but entirely outside the boundary/permit area of the Santa Clara Valley Habitat Plan, a regional combined habitat conservation plan and natural community conservation plan.


**Environmental Setting**

To identify existing biological conditions in the program area, the following information sources were reviewed, including a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015).

- Documents prepared for other San Jose Water Company (SJWC) projects in the Los Gatos Creek Watershed, including:
  - The Watershed Sanitary Survey: December 2011 (SJWC 2011);
  - Draft Botanical and Wildlife Assessment of San Jose Water Company’s Roadside Vegetation Management Areas (EcoSystems West Consulting Group 2010a);
  - California Red-legged Frog Habitat Assessment for the San Jose Water Company Lexington Reservoir Raw Water Pipeline Replacement Project, Santa Clara County, California (EcoSystems West Consulting Group 2006);
  - Preconstruction Wildlife Survey Results Summary for the San Jose Water Company Beardsley Intake Facility Maintenance Project, Santa Clara County, California (EcoSystems West Consulting Group 2003); and
  - Results of Special-status Amphibian and Aquatic Reptile Surveys at San Jose Water Company’s Lake Kittredge and Lake Couzzens Properties, Near the Community of Lakeside in Santa Clara County, California (EcoSystems West Consulting Group 2010b).


- Data on special-status plant species occurrences and California Rare Plant Ranks (CRPR, formerly known as California Native Plant Society [CNPS] lists), including applicable species information (CNPS 2015).


- Jurisdictional Wetland and Other Waters Impact Area Assumptions (Horizon Water and Environment 2015a) (Appendix F).
Surveys and Monitoring Performed in the Program Area

Surveys for biological resources, including special-status species, have been conducted in the program area as part of various SJWC projects and planning efforts. This discussion summarizes previous surveys and monitoring efforts that were consulted in developing the environmental setting for the proposed program.

Amphibian and Reptile Surveys. In 2003, focused surveys for the California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), and western pond turtle (*Actinemys marmorata*) were conducted at the Beardsley Intake Facility Maintenance Project site by EcoSystems West Consulting Group (EcoSystems West Consulting Group 2003). In 2006, EcoSystems West Consulting Group conducted a habitat assessment for the California red-legged frog at the SJWC Lexington Reservoir Raw Water Pipeline Replacement Project site (EcoSystems West Consulting Group 2006), and in 2010, special-status amphibian and reptile surveys were conducted by EcoSystems West Consulting Group at Lake Kittredge and Lake Couzzens (EcoSystems West Consulting Group 2010b).

Focused daytime and nighttime surveys for California red-legged frog, foothill yellow-legged frog, and western pond turtle were conducted by H. T. Harvey & Associates herpetologists in spring and summer 2014 along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam (H. T. Harvey & Associates 2015 – Appendix E).

Mammal Surveys. In 2003, bat specialists from the Central Coast Bat Research Group conducted surveys to determine whether bats utilized the Beardsley Intake maintenance site. Survey methods included a daytime visual assessment of the surrounding habitat and area to be disturbed, and nighttime acoustic sampling and mist netting (EcoSystems West Consulting Group 2003).

Climate and Soils

The program area is located in the Los Gatos, Laurel, and Castle Rock Ridge California U.S. Geological Survey (USGS) 7.5-minute quadrangles. Elevations range from 560 feet above mean sea level at the Trout Creek/Los Gatos Creek confluence (downstream of the Lexington Reservoir) to 3,791 feet above mean sea level at Loma Prieta Mountain. The program area is characterized by a Mediterranean-like climate of mild, wet winters and hot, dry summers. Precipitation is almost always in the form of rain. Historic rainfall conditions indicate a large variation in the mean annual rainfall across the program area.

According to the Natural Resources Conservation Service (2014), there are six designated soil associations in Santa Clara County that may be present in the program area. The Montara (15 to 50 percent slopes) and the Maymen-Los Gatos-Gaviota (30 to 75 percent slopes, severely
eroded) associations are the two major soil associations found in the program area, and are comprised of upland soils developed on sedimentary, basic igneous, and serpentine rock. Other soil types include the Sunnyvale-Castro-Clear Lake association, which includes deep, level, somewhat poor to poorly drained soils; the Zamora-Pleasanton association and Arbuckle-Pleasanton association, which include moderately well to somewhat excessively drained, medium to fine textured soils of the alluvial plains and fans; and the Keefers-Hillgate association (2 to 9 percent slopes) dominated by soils with slow to very slowly permeable sub-soils of the older alluvial fans and terraces.

**Existing Land Uses, Natural Communities, and Habitats**

Vegetation communities and habitats within the program area are shaped by the ecological forces in the region. Topography, soil, climate, the frequency of natural disturbance, and human management are all factors that affect the type and pattern of communities present. Riparian areas along creeks and stream channels are typically dominated by California bay (*Umbellularia californica*) forest, coast redwood (*Sequoia sempervirens*) forest, or red alder (*Alnus rubra*) forest. Mixed evergreen forest extends up the mesic, north-facing slopes, while chaparral and northern coastal scrub occurs on the more xeric south- and southwest-facing slopes. Small areas of oak woodland and grassland are also present. Northern coastal scrub and chaparral together cover approximately 38 percent of the program area, mixed evergreen forest approximately 24 percent, and redwood forest approximately 21 percent. The remaining communities each cover approximately five percent or less of the program area (Horizon Water and Environment 2015). No natural lakes occur within the watershed, but several reservoirs are present.

Because the program area is large and contains natural communities that may not be subject to disturbance by maintenance activities, this section addresses only the community types that have the potential to be affected by proposed maintenance activities. Based on dominant plant species, these communities have been divided into five general categories: aquatic/wetland, forest/woodland, riparian, scrub/shrubland, and grassland. The dominant and characteristic plant and wildlife species for each of these habitats are described in detail in Chapters 3 and 4 of the Los Gatos Creek Watershed Maintenance Manual (Appendix A).

**Special-Status Plant and Wildlife Species**

The California Environmental Quality Act (CEQA) requires assessment of the effects of a project on species that are “threatened, rare, or endangered;” such species are typically described as “special-status species.” For planning purposes and for assessment of impacts of the program, special-status species are defined as described below. Impacts on these species are regulated by federal and state laws and ordinances, as described under “Regulatory Setting” below.
**Special-Status Plants.** For purposes of this report, special-status plants are plant species that are:

- Listed under the federal Endangered Species Act (ESA) as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under the California Endangered Species Act (CESA) as threatened, endangered, rare, or a candidate species;
- Included in the CNPS CRPR designations as rare or endangered with ranks of 1A, 1B, 2A or 2B; or
- Included in the CRPR with ranks 3 (more information needed/review list) or 4 (limited distribution/watch list).

A list of 57 special-status plants thought to have some potential for occurrence in the program area was compiled using the CNPS Rare Plant Inventory and CDFW CNDDB records (CNPS 2015, CNDDB 2016). CNDDB occurrence records in and near the program area are displayed in Figure 16, **Special-Status Plant Species in Program Area**. The database searches included the three USGS 7.5-minute quadrangles in which the program area occurs (i.e., Los Gatos, Laurel, and Castle Rock Ridge), as well as the Mindego Hill, Cupertino, and Loma Prieta quadrangles. These quadrangles were included because they are adjacent to, and share similar physical and ecological properties with, the program area.

Adjacent quadrangles that are primarily on the western slope of the Santa Cruz Mountains or within the Santa Clara Valley were excluded from the analysis because they have dramatically different habitat types (e.g., coastal salt marsh, vernal pools, alkaline soils, and sandhills) and support many species that are unlikely to occur in the program area.

Analysis of the documented habitat requirements and occurrence records associated with all of the species considered allowed biologists to reject 40 of these plant species as not having a reasonable potential to occur at program maintenance sites or fuel management areas. The remaining 17 species were further considered for potential occurrence at maintenance sites or fuel management areas based on their general habitat requirements and known distribution. Based on observations during site visits and focused surveys, none of these 17 special-status plant species were determined to be present at any of the maintenance sites; however, all 17 species may occur in fuel management areas. These species’ distribution, legal status, general habitat requirements, and known occurrences near fuel management areas are provided in Table 10, **Special-Status Plant Species with Potential to Occur at Fuel Management Areas**, and expanded descriptions are included in Appendix G.
### Table 10  Special-Status Plant Species with Potential to Occur at Fuel Management Areas

<table>
<thead>
<tr>
<th>Common Name (Scientific Name)</th>
<th>Status</th>
<th>Habitat Association</th>
<th>Potential to Occur at Fuel Management Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federally Listed or State-Listed Endangered and Threatened Plant Species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santa Clara Valley dudleya (Dudleya abramsii ssp. setchellii)</td>
<td>FE, CRPR 1B.1</td>
<td>Cismontane woodland, valley and foothill grassland/serpentinite, rocky</td>
<td><strong>May Be Present.</strong> The closest known population is located at Almaden Quicksilver County Park, approximately 5 miles northeast of Lake Elsman (CNDDB 2015). Serpentine chaparral near the access road on the north side of Lake Elsman may provide suitable habitat.</td>
</tr>
<tr>
<td><strong>CNPS-Listed Plant Species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bent-flowered fiddleneck (Amsinckia lunaris)</td>
<td>CRPR 1B.2</td>
<td>Coastal bluff scrub, cismontane woodland, valley and foothill grassland</td>
<td><strong>May Be Present.</strong> The closest known population is located in Scotts Valley, approximately 5.7 miles southwest of Lake Elsman (CNDDB 2015). Woodland openings and grassland habitats in fuel management areas may provide suitable habitat.</td>
</tr>
<tr>
<td>Brewer’s calandrinia (Calandrinia breweri)</td>
<td>CRPR 4.2</td>
<td>Chaparral, coastal scrub/sandy or loamy, disturbed sites and burns</td>
<td><strong>May Be Present.</strong> Chaparral habitats in fuel management areas (e.g., near the access road on the north side of Lake Elsman) provide suitable habitat for this annual species that is adapted to disturbance. The species is considered very unlikely to occur, however, due to its limited distribution throughout its geographic range and the marginal quality of the habitat present in the fuel management areas, which has been degraded by ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Santa Cruz Mountains pussypaws (Calyptridium parryi var. hesseae)</td>
<td>CRPR 1B.1</td>
<td>Chaparral, cismontane woodland/sandy or gravelly, openings</td>
<td><strong>May Be Present.</strong> Chaparral habitats in the fuel management areas (e.g., near the access road on the north side of Lake Elsman) provide suitable habitat.</td>
</tr>
<tr>
<td>Mt. Hamilton fountain thistle (Cirsium fontinale var. campylon)</td>
<td>CRPR 1B.2</td>
<td>Chaparral, cismontane woodland, valley and foothill grassland/serpentinite seeps</td>
<td><strong>May Be Present.</strong> The closest known population is located near Mount Umunhum, approximately 2 miles north of Lake Elsman (CNDDB 2015). Seeps near the serpentine chaparral north of Lake Elsman may provide suitable habitat.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Fuel Management Areas</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>---------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Brewer's clarkia (<em>Clarkia breweri</em>)</td>
<td>CRPR 4.2</td>
<td>Chaparral, cismontane woodland, coastal scrub/often serpentinite</td>
<td><strong>May Be Present.</strong> Serpentine chaparral in the fuel management areas (e.g., near the access road on the north side of Lake Elsman) provides suitable habitat. The species is considered very unlikely to occur, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Santa Clara red ribbons (<em>Clarkia concinna ssp. automixa</em>)</td>
<td>CRPR 4.3</td>
<td>Chaparral, cismontane woodland</td>
<td><strong>May Be Present.</strong> There are two records of this annual species in the program area (CNDDB 2015). Chaparral (e.g., near the access road on the north side of Lake Elsman) and woodland openings in the fuel management areas provide suitable habitat. The species is considered very unlikely to occur, however, because of the marginal quality of the habitat within the fuel management areas, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>San Francisco collinsia (<em>Collinsia multicolor</em>)</td>
<td>CRPR 1B.2</td>
<td>Closed-cone coniferous forest, coastal scrub/ sometimes serpentinite</td>
<td><strong>May Be Present.</strong> The closest known occurrence record is located in the vicinity of Almaden Quicksilver County Park, approximately 5 miles northeast of Lake Elsman (CNDDB 2015). Chaparral and scrubland habitats near fuel management areas (e.g., near the access road on the north side of Lake Elsman) may provide suitable habitat.</td>
</tr>
<tr>
<td>Fragrant fritillary (<em>Fritillaria liliacea</em>)</td>
<td>CRPR 1B.2</td>
<td>Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentinite</td>
<td><strong>May Be Present.</strong> The closest known record is located in Almaden Quicksilver County Park, approximately 5 miles northeast of Lake Elsman (CNDDB 2015). Grassland and woodland openings in the fuel management areas may provide suitable habitat. The species is considered very unlikely to occur, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Phlox-leaf serpentine bedstraw (<em>Galium andrewsii ssp. gatense</em>)</td>
<td>CRPR 4.2</td>
<td>Chaparral, cismontane woodland, lower montane coniferous forest/serpentinite, rocky</td>
<td><strong>May Be Present.</strong> Serpentine chaparral on the north side of Lake Elsman provides suitable habitat. This annual species is considered very unlikely to occur in the fuel management areas, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Fuel Management Areas</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Loma Prieta hoita (Hoita strobilina)</td>
<td>CRPR 1B.1</td>
<td>Chaparral, cismontane woodland, riparian woodland/usually serpentinite, mesic</td>
<td><strong>May Be Present.</strong> There are several known records in the program area, including one within 0.5-mile of Trout Creek Intake (CNDDB 2015). Mesic chaparral and woodland openings within the fuel management areas provide suitable habitat. The species is considered very unlikely to occur, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Serpentine leptosiphon (Leptosiphon ambiguus)</td>
<td>CRPR 4.2</td>
<td>Cismontane woodland, coastal scrub, valley and foothill grassland/usually serpentinite</td>
<td><strong>May Be Present.</strong> Serpentine chaparral near the access road on the north side of Lake Elsman may provide suitable habitat. The species is considered very unlikely to occur in the fuel management areas, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Woolly-headed lessingia (Lessingia hololeuca)</td>
<td>CRPR 3</td>
<td>Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentinite</td>
<td><strong>May Be Present.</strong> Serpentine chaparral near the access road on the north side of Lake Elsman may provide suitable habitat for this species. The species is considered very unlikely to occur in the fuel management areas, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Smooth lessingia (Lessingia micradenia var. glabrata)</td>
<td>CRPR 1B.2</td>
<td>Chaparral, cismontane woodland/serpentinite, often roadsides</td>
<td><strong>May Be Present.</strong> Several occurrence records are located in the vicinity of Almaden Quicksilver County Park, approximately 5 miles northeast of Lake Elsman (CNDDB 2015). Serpentine chaparral near the access road on the north side of Lake Elsman provides suitable habitat. This annual species is considered very unlikely to occur in the fuel management areas, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Fuel Management Areas</td>
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</tr>
<tr>
<td>Woodland woolythreads <em>(Monolopia gracilens)</em></td>
<td>CRPR 1B.2</td>
<td>Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, North Coast coniferous forest (openings), valley and foothill grassland/serpentine</td>
<td><strong>May Be Present.</strong> Serpentine chaparral near the access road on the north side of Lake Elsman may provide suitable habitat. This species is considered very unlikely to occur in the fuel management areas, however, due to its limited distribution throughout its geographic range and because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
<tr>
<td>Santa Cruz Mountains beardtongue <em>(Penstemon rattanii var. kleei)</em></td>
<td>CRPR 1B.2</td>
<td>Chaparral, lower montane coniferous forest, North Coast coniferous forest</td>
<td><strong>May Be Present.</strong> This species is known from only six occurrences in the Santa Cruz Mountains (CNPS 2015). One record is located in the program area, to the east and southeast of Lake Elsman (CNDDB 2015). Chaparral near fuel management areas (e.g., near the access road on the north side of Lake Elsman) provides suitable habitat.</td>
</tr>
<tr>
<td>Most beautiful jewel-flower <em>(Streptanthus albidos ssp. peramoenus)</em></td>
<td>CRPR 1B.2</td>
<td>Chaparral, cismontane woodland, valley and foothill grassland/serpentine</td>
<td><strong>May Be Present.</strong> This annual species is widely distributed throughout the county, and an unidentified plant in the <em>Streptanthus</em> genus found in the area during previous surveys (Ecosystems West Consulting Group 2010a) was likely most beautiful jewel-flower. Suitable habitat is present in serpentine chaparral to the north of Lake Elsman. This species is considered very unlikely to occur in fuel management areas, however, because of the marginal quality of the habitat, which is degraded due to ongoing vegetation management practices.</td>
</tr>
</tbody>
</table>

**Source:** Horizon Water & Environment 2016

**Note:** Status codes include: FE (listed as endangered under the Endangered Species Act), 1B (plants rare, threatened, or endangered in California and elsewhere), 3 (plants about which more information is needed), 4 (plants of limited distribution), .1 (seriously endangered in California), .2 (fairly endangered in California), and .3 (not very endangered in California).
Special-Status Wildlife. For purposes of this report, special-status wildlife species are wildlife species that are:

- Listed under the federal ESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under the CESA as threatened, endangered, or a candidate species;
- Designated by the CDFW as a California species of special concern; or
- Listed in the California Fish and Game Code as a fully protected species (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515).

The legal status and potential for occurrence of special-status wildlife species known to occur or potentially occurring in the general vicinity of the program area are given in Table 11, Special-Status Wildlife Species with Potential to Occur at Maintenance Sites and Fuel Management Areas. CNDDB occurrence records in and near the program area are displayed in Figure 17, Special-Status Wildlife Species in Program Area. Expanded descriptions are included in Appendix H for those species that are known to occur at maintenance sites or fuel management areas, for which potentially suitable breeding habitat occurs at maintenance sites or fuel management areas, or for which resource agencies have expressed particular concern.

Some of the special-status wildlife species known to occur in the general program region are not expected to occur in the proposed program area because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat. For example, the proposed program area was determined to be outside the range of the federally listed and state-listed California tiger salamander (Ambystoma californiense), and special-status salmonids were determined to be absent from the program area due to the presence of several dams (e.g., Lenihan Dam, as well as the Camden Avenue Drop Structure, Page Dam, and Vasona Dam downstream on Los Gatos Creek), which function as complete barriers to dispersal of the Central California coast steelhead (Oncorhynchus mykiss) and Central Valley fall-run Chinook salmon (Oncorhynchus tshawytscha) into the proposed program area.

Several special-status species occur in the proposed program area as non-breeding transients, foragers, or migrants, but they do not breed in or very close to the proposed program activity areas, and/or suitable nesting/breeding habitat is absent in the program area. These species are the bald eagle (Haliaeetus leucocephalus), golden eagle (Aquila chrysaetos), American peregrine falcon (Falco peregrinus anatum), Vaux’s swift (Chaetura vauxi), and western red bat (Lasiurus blossevillii).
<table>
<thead>
<tr>
<th>Common Name (Scientific Name)</th>
<th>Status</th>
<th>Habitat Association</th>
<th>Potential to Occur at Maintenance Sites and Fuel Management Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay checkerspot butterfly</td>
<td>FT</td>
<td>Native grasslands on serpentine soils; larval host plants are <em>Plantago erecta</em> and/or <em>Castilleja</em> spp.</td>
<td>Absent. The program area is not within the currently known distribution of this species (USFWS 1998) and suitable habitat is not present.</td>
</tr>
<tr>
<td>Central California Coast steelhead</td>
<td>FT</td>
<td>Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats</td>
<td>Absent. Lenihan Dam, as well as Camden Avenue Drop Structure, Page Dam, and Vasona Dam downstream on Los Gatos Creek, function as complete barriers to dispersal of steelhead into the program area. Non-anadromous rainbow trout occur upstream of Lexington Reservoir in the watershed.</td>
</tr>
<tr>
<td>California tiger salamander</td>
<td>FT, SE/CSSC</td>
<td>Vernal or temporary pools in annual grasslands or open woodlands</td>
<td>Absent. Suitable temporary pools in open habitats are not present in the program area. The nearest recorded occurrence is approximately 5 miles east of Lexington Reservoir at Almaden Quicksilver County Park (CNDDB 2015).</td>
</tr>
<tr>
<td>California red-legged frog</td>
<td>FT, CSSC</td>
<td>Streams, freshwater pools, and ponds with emergent or overhanging vegetation</td>
<td>Present. Species has been recorded in Los Gatos Creek within the program area (CNDDB 2015) at a small pond behind the dam at the Ostwald Intake (H. T. Harvey &amp; Associates 1997) and at Lake Kittredge/ Lake Cozzens (EcoSystems West 2010b). Suitable habitat is present along numerous creeks within the program area. None were recorded, however, during focused surveys in spring and summer 2014 along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam (H. T. Harvey &amp; Associates 2014). In addition, the areas in which this species has been recorded in the Los Gatos Creek watershed have been fairly limited, suggesting a small and sparsely dispersed population. Therefore, this species is not expected to occur regularly or in abundance at maintenance sites or fuel management areas, except possibly in the few areas where it has been recorded previously.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Maintenance Sites and Fuel Management Areas</td>
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</tr>
<tr>
<td>Bald eagle <em>(Haliaeetus leucocephalus)</em></td>
<td>SE, SP</td>
<td>Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers; feeds mostly on fish</td>
<td><strong>Absent as Breeder.</strong> Bald eagles are known to have nested in Santa Clara County only in five locations: at Anderson Reservoir, Coyote Reservoir, near Calaveras Reservoir, at San Felipe Lake along Highway 152, and along Pacheco Creek near Casa de Fruta (Bousman 2007b; Ventana Wildlife Society 2012). Suitable wintering habitat is present, however, around Lexington Reservoir, Lake Elsman, and Lake Williams. Given recent records of this species around Lexington Reservoir and increases in this species’ population in recent decades, it could nest in the proposed program area in the future, likely near a reservoir, and potentially where it could be disturbed by fuel management activities.</td>
</tr>
</tbody>
</table>

**California Species of Special Concern**

<table>
<thead>
<tr>
<th>Common Name (Scientific Name)</th>
<th>Status</th>
<th>Habitat Association</th>
<th>Potential to Occur at Maintenance Sites and Fuel Management Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Valley fall-run Chinook salmon <em>(Oncorhynchus tshawytscha)</em></td>
<td>CSSC</td>
<td>Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs</td>
<td><strong>Absent.</strong> Lenihan Dam, as well as Camden Avenue Drop Structure, Page Dam, and Vasona Dam downstream on Los Gatos Creek, function as complete barriers to dispersal of Chinook salmon into the proposed program area.</td>
</tr>
<tr>
<td>Foothill yellow-legged frog <em>(Rana boylii)</em></td>
<td>CSSC</td>
<td>Partially shaded shallow streams and riffles with a rocky substrate; occurs in a variety of habitats in the Coast Ranges</td>
<td><strong>Absent.</strong> Creeks in the proposed program area provide ostensibly suitable habitat for this species. It has not been recorded in the watershed since the early 1970s, however, with the most recent recorded observation near a maintenance area occurring in 1972 at Hendry’s Creek, 1.5 miles east of the Hendry Intake (H. T. Harvey &amp; Associates 1999). During focused surveys for the California red-legged frog conducted in spring and summer 2014 along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam, no yellow-legged frogs were detected. Furthermore, no yellow-legged frogs have been detected along other nearby watersheds (such as Stevens and Saratoga Creeks) in recent decades, despite considerable survey effort. Given the lack of recent records from the vicinity of the proposed program area and nearby watersheds and negative results of 2014 surveys, this species is not expected to occur at the maintenance sites and fuel management areas.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Maintenance Sites and Fuel Management Areas</td>
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<tr>
<td>Western pond turtle (Actinemys marmorata)</td>
<td>CSSC</td>
<td>Permanent or nearly permanent water in a variety of habitats</td>
<td>Present. Suitable habitat is present along numerous creeks and reservoirs within the program area, including those within the maintenance areas, and the species has been recorded at Lake Cozzens (EcoSystems West 2006, as cited in EcoSystems West 2010a), Beardsley Intake Access Area (EcoSystems West 2003), Lower Cavanee Intake Access Area (CNDDB 2015), and Oswald Intake Access Area (EcoSystems West 2010b). None were recorded, however, during herpetological surveys in spring and summer 2014 along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam. Therefore, this species is likely present only in small numbers.</td>
</tr>
<tr>
<td>Long-eared owl (Asio otus)</td>
<td>CSSC</td>
<td>Riparian bottomlands with tall, dense willows and cottonwood stands, as well as dense live oak and California bay along upland streams; forages primarily in adjacent open areas</td>
<td>May Be Present. Rare resident and occasional winter visitor in Santa Clara County (Bousman 2007c). Historical breeding records are known from the Santa Clara Valley floor, and one recent nest was recorded at Ed Levin County Park, west of Calaveras Reservoir (Noble 2007). Could potentially breed in oak woodlands, riparian habitats, and other wooded habitats in and adjacent to maintenance sites and fuel management areas, although it is expected to occur only in very low numbers.</td>
</tr>
<tr>
<td>Vaux’s swift (Chaetura vauxi)</td>
<td>CSSC</td>
<td>Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially</td>
<td>Absent as Breeder. In the region, the species nests primarily in snags within Santa Cruz Mountain forests outside of the program area and in residential chimneys in the foothills of the Santa Cruz Mountains, such as Los Gatos, Los Altos, Los Altos Hills, Cupertino, and Campbell (Rottenborn 2007a). Nevertheless, individuals may forage over maintenance sites and fuel management areas during migration.</td>
</tr>
</tbody>
</table>
### Environmental Effects

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Status</th>
<th>Habitat Association</th>
<th>Potential to Occur at Maintenance Sites and Fuel Management Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olive-sided flycatcher (Contopus cooperi)</td>
<td>CSSC (nesting)</td>
<td>Breeds in mature, primarily coniferous forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes</td>
<td><strong>May Be Present.</strong> This species breeds widely, though in low densities, in the Santa Cruz Mountains, and the woodlands at maintenance sites and fuel management areas provide suitable breeding and foraging habitat.</td>
</tr>
<tr>
<td>Loggerhead shrike (Lanius ludovicianus)</td>
<td>CSSC (nesting)</td>
<td>Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats</td>
<td><strong>Absent.</strong> Suitable habitat is not present in the program area.</td>
</tr>
<tr>
<td>Purple martin (Progne subis)</td>
<td>CSSC (nesting)</td>
<td>In the Santa Cruz Mountains, nests in old woodpecker cavities in utility poles and pine snags</td>
<td><strong>Absent.</strong> Although woodpecker cavities are present in trees in the program area, this species is not known to nest in the Santa Cruz Mountains away from a few scattered ridgeline locations, such as near the summits of Loma Prieta and Mt. Umunhum (Bousman 2007d). In the region, it is not known to nest in habitats such as those present in proposed maintenance sites or fuel management areas.</td>
</tr>
<tr>
<td>Yellow warbler (Dendroica petechia)</td>
<td>CSSC (nesting)</td>
<td>Nests in riparian woodlands</td>
<td><strong>May Be Present.</strong> Alder and willow riparian habitats throughout the program area, including within maintenance sites and fuel management areas, provide suitable nesting and foraging habitat; however, the species is expected to breed in relatively low densities.</td>
</tr>
<tr>
<td>Tricolored blackbird (Agelaius tricolor)</td>
<td>CSSC (nesting colony)</td>
<td>Nests near fresh water in dense emergent vegetation</td>
<td><strong>Absent.</strong> The species has not been recorded breeding in the Santa Cruz Mountains in Santa Clara County (Rottenborn 2007b), and suitable habitat is not present within the program area.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
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</tr>
<tr>
<td>Townsend’s big-eared bat (<em>Corynorhinus townsendii</em>)</td>
<td>CSSC</td>
<td>Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats</td>
<td><strong>Absent.</strong> Suitable habitat is not present at maintenance sites and fuel management areas due to the absence of very large, hollowed-out tree trunks, caves, or buildings with cavernous attics. This species is very scarce in the Santa Cruz Mountains, occurring primarily in mines and other anthropogenic caves and tunnels.</td>
</tr>
<tr>
<td>Pallid bat (<em>Antrozous pallidus</em>)</td>
<td>CSSC</td>
<td>Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees</td>
<td><strong>May Be Present.</strong> No known maternity roosts of pallid bats are present in the program area. The species may forage at maintenance sites and fuel management areas, and larger, older oak trees in open-canopy woodlands provide suitable roosting habitat; however, maternity colonies are not expected to occur along the stream channels in the program area, as a review of all maintenance sites did not identify suitable sites for presence of maternity colonies.</td>
</tr>
<tr>
<td>Western red bat (<em>Lasiurus blossevillii</em>)</td>
<td>CSSC</td>
<td>Roosts in foliage in forest or woodlands, especially in or near riparian habitat</td>
<td><strong>Present.</strong> The species occurs occasionally as a migrant and winter resident, but does not breed in the program area. The species has been recorded at the Beardsley Intake Facility (EcoSystems West 2003), and small numbers may roost in foliage in trees throughout the maintenance sites and fuel management areas.</td>
</tr>
<tr>
<td>San Francisco dusky-footed woodrat (<em>Neotoma fuscipes annectens</em>)</td>
<td>CSSC</td>
<td>Nests in a variety of habitats, including riparian areas, oak woodlands, and scrub</td>
<td><strong>Present.</strong> Riparian and woodland habitats throughout the program area provide suitable nesting habitat for this species. While abundant in the region, only a few nests are present at maintenance sites, such as near the Hooker Intake (EcoSystems West 2010a).</td>
</tr>
<tr>
<td>State Fully Protected Species</td>
<td></td>
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<tr>
<td>American peregrine falcon (<em>Falco peregrinus anatum</em>)</td>
<td>SP</td>
<td>Forages in many habitats; nests on cliffs and tall bridges and buildings</td>
<td><strong>Absent as Breeder.</strong> An adult female was observed attending two fledged young near Lake Elsman in 1996 (Bousman 2007e), and suitable nesting habitat may be present on cliffs high in the watershed; however, suitable nesting habitat is not present within or very close to the maintenance sites or fuel management areas. Non-breeders are present in the watershed in small numbers in fall and winter and may occur anywhere throughout the watershed as foragers or migrants, though always at low densities.</td>
</tr>
<tr>
<td>Common Name (Scientific Name)</td>
<td>Status</td>
<td>Habitat Association</td>
<td>Potential to Occur at Maintenance Sites and Fuel Management Areas</td>
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</tr>
<tr>
<td>Golden eagle ((Aquila chrysaetos))</td>
<td>SP</td>
<td>Breeds on cliffs or in large trees (rarely on electrical towers); forages in open areas</td>
<td><strong>Absent as Breeder.</strong> In the Santa Cruz Mountains, this species breeds only sparsely in areas, such as the program area, that have only limited open grassland. Although a few pairs breed at the edges of the Santa Clara Valley at elevations within the watershed (Bousman 2007f), suitable breeding habitat is not present at the maintenance sites. The species may occur at maintenance sites as a rare forager, however, and it could potentially breed near fuel management areas.</td>
</tr>
<tr>
<td>Ringtail ((Bassariscus astutus))</td>
<td>SP</td>
<td>Cavities in rock outcrops and talus slopes, as well as hollows in trees, logs, and snags that occur in riparian habitats and dense woodlands, usually in close proximity to water</td>
<td><strong>May Be Present.</strong> Ostensibly suitable habitat is present at forested maintenance sites and fuel management areas, but few confirmed records exist. The species has been observed near Lexington Reservoir (D. Johnston, pers. comm., 2014).</td>
</tr>
</tbody>
</table>

**Source:** Horizon Water & Environment 2016

**Note:** Status codes include: FE (listed as endangered under the federal ESA), FT (listed as threatened under the federal ESA), SE (listed as endangered under the California ESA), ST (listed as threatened under the California ESA), CSSC (California species of special concern), and SP (State fully protected).
Special-status Plant Species

Only species occurrences fully or partially within the study area and its 5-mile radius are shown.

- Anderson's manzanita
- Ben Lomond spineflower
- Bonny Doon manzanita
- Indian Valley bush-mallow
- Loma Prieta holly
- Santa Clara Valley dudleya
- Santa Clara red ribbons
- arcuate bush-mallow
- fragrant fritillary
- hairless popcornflower
- most beautiful jewelflower
- robust spineflower
- smooth lessingia
- Woodward woollythreads

Note: This figure presents California Natural Diversity Database (CNDDB) version 2015 occurrence records maintained by the California Department of Fish and Wildlife. Species records indicate positive occurrences only; lack of occurrence data does not indicate species are not present. Some records represent historical and/or extirpated occurrences. There may be additional special-status species occurrences within this area which have not been observed or reported.

Source: Horizon Water and Environment 2016, CNDDB 2015, National Geographic Society 2013

Figure 16

Special-Status Plant Species in Program Area

Los Gatos Creek Watershed Maintenance Program EIR
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Special-Status Animals Within a 5-Mile Radius of the Project Area

Only species occurrences fully or partially within the study area and its 5-mile radius are shown.

Note: This figure presents California Natural Diversity Database (CNDDB) version 2015 occurrence records maintained by the California Department of Fish and Wildlife. Species records indicate positive occurrences only; lack of occurrence data does not indicate species are not present. Some records represent historical and/or extirpated occurrences. There may be additional special-status species occurrences within this area which have not been observed or reported.

Source: Horizon Water and Environment 2016, CNDDB 2015, National Geographic Society 2013
Eight special-status wildlife species are known or expected to occur within the habitats present in the program area and could potentially breed or roost there. These are the California red-legged frog, western pond turtle, long-eared owl (*Asio otus*), olive-sided flycatcher (*Contopus cooperi*), yellow warbler (*Dendroica petechia*), pallid bat (*Antrozous pallidus*), ringtail (*Bassariscus astutus*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

As mentioned earlier, expanded descriptions are provided in Appendix H for those wildlife species for which potentially suitable breeding habitat occurs on or in the general vicinity of the program area, as well as species for which resource agencies have expressed particular concern and for which expanded discussion is required.

**Regulatory Setting**

**Federal**

**Clean Water Act.** Areas meeting the regulatory definition of “waters of the U.S.” (jurisdictional waters) are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (Federal Water Pollution Control Act) (CWA) and Section 10 of the 1899 Rivers and Harbors Act (described below). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, and natural ponds), all impoundments of waters otherwise defined as “waters of the U.S.,” tributaries of waters otherwise defined as “waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the USACE *Wetlands Delineation Manual* (Horizon Water and Environment 2015).

Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Construction activities within jurisdictional waters are regulated by USACE. The placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of state water quality certification under CWA Section 401. SWRCB is the state agency, together with the Regional Water Quality Control Boards (RWQCBs), charged with implementing water quality certification in California.

Any work within areas defined as waters of the U.S. (i.e., wetlands and other waters), including waterways such as Los Gatos Creek, and reservoirs such as Lake Elsman, Williams Reservoir, Lake Kittredge, Lake Cozzens, and Lake Ranch Reservoir, would require a Section 404 fill
discharge permit from USACE and a Section 401 Water Quality Certification from the San Francisco Bay RWQCB. Freshwater wetlands, as described in the environmental setting above, are generally considered waters of the U.S. and, as such, are subject to the jurisdiction of USACE and San Francisco Bay RWQCB.

**Porter-Cologne Water Quality Control Act.** Each RWQCB is responsible for protecting surface water, groundwater, and coastal waters within its boundaries, in accordance with the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of the California Water Code. The RWQCB has jurisdiction under CWA Section 401 for activities that could result in a discharge of dredged or fill material to a water body. Federal authority is exercised whenever a proposed project requires a CWA Section 404 permit from USACE in the form of a Section 401 Water Quality Certification. State authority is exercised when a proposed project is not subject to federal authority, in the form of a Notice of Coverage, Waiver of Waste Discharge Requirements. Many wetlands fall under RWQCB jurisdiction, including some wetlands and waters that are not subject to USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends to all areas below the ordinary high water mark.

Under the Porter-Cologne Act, the SWRCB and the nine regional boards have the responsibility of granting CWA National Pollutant Discharge Elimination System permits and waste discharge requirements for certain point-source and non-point-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

As stated above, any activities within the program area that affect waters of the U.S. or waters of the State would require Section 401 Water Quality Certification and/or Waste Discharge Requirements from the RWQCB. Some features in the program area in freshwater wetlands and open water habitats are considered both waters of the U.S. and waters of the State. It is possible that some features, such as ditches, that are not considered waters of the U.S. are subject to the jurisdiction of the San Francisco Bay RWQCB as waters of the State.

**Rivers and Harbors Act.** Section 10 of the Rivers and Harbors Act (1899) (33 U.S.C. § 403) regulates the construction of structures, placement of fill, and introduction of other potential obstructions to navigation in navigable waters. Under Section 10 of the Rivers and Harbors Act, the building of wharves, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable or tidal waters requires the approval of the Chief of Engineers.

USACE has the authority to issue permits for the discharge of refuse into, or affecting, navigable waters under section 13 of the 1899 Act (33 U.S.C. § 407; 30 Stat. 1152). The act was modified by title IV of P.L. 92–500, October 18, 1972; the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. §§ 1341–1345; 86 Stat. 877), as amended, established the National Pollutant Discharge Elimination System permits.
No areas subject to USACE jurisdiction under the Rivers and Harbors Act are present in the program area.

**Federal Endangered Species Act.** The ESA protects listed wildlife species from harm or “take,” which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the ESA only if they occur on federal lands or if the project requires a federal action, such as a CWA Section 404 fill permit from USACE.

USFWS has jurisdiction over federally listed threatened and endangered wildlife species under the ESA, while National Oceanic and Atmospheric Administration (NOAA) Fisheries, also known as the National Marine Fisheries Service (NMFS), has jurisdiction over federally listed threatened and endangered marine and anadromous fish.

Based on a review of recent ecological studies of other projects in the vicinity; aerial photos and topographic maps; and other relevant scientific literature, technical databases, and resource agency reports, the only federally listed wildlife species that occurs, or could potentially occur, at the maintenance sites and fuel management areas is California red-legged frog. No federally listed plant species are expected to occur at maintenance sites; however, the federally listed Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*) may be present in fuel management areas.

**Magnuson-Stevens Fishery Conservation and Management Act.** The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the U.S. 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat in fishery management plans for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect Essential Fish Habitat are required to consult with the NMFS regarding potential adverse effects of their actions on Essential Fish Habitat, and respond in writing to recommendations by the NMFS.

Because no fish species regulated by fishery management plans are present, no Essential Fish Habitat occurs within the program area.

with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses
issues related to the Migratory Bird Treaty Act is USFWS. Migratory birds protected under this
law include all native birds and certain game birds (e.g., turkeys and pheasants; USFWS 2005).
This act encompasses whole birds, parts of birds, and bird nests and eggs. The Migratory Bird
Treaty Act protects active nests from destruction and all nests of species protected by the
Migratory Bird Treaty Act, whether active or not, cannot be possessed. An active nest under the
Migratory Bird Treaty Act, as described by the U.S. Department of the Interior in its 16 April
2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg
laying, are not protected from destruction. All native bird species occurring in the program area
are protected by the Migratory Bird Treaty Act.

**Federal Bald and Golden Eagle Protection Act.** The Bald and Golden Eagle Protection Act
(16 USC § 668 et seq.) makes it unlawful to import, export, take, sell, purchase, or barter any bald
eagle or golden eagle, or their parts, products, nests, or eggs. Take includes pursuing, shooting,
poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbance.
Exceptions may be granted by USFWS for scientific or exhibition use, or for traditional and
cultural use by Native Americans; however, no permits may be issued for import, export, or
commercial activities involving eagles.

Bald eagles and golden eagles are not known to nest at the maintenance sites or in fuel
management areas. Suitable wintering habitat for bald eagles is present, however, around
Lexington Reservoir, Lake Elsman, and Lake Williams; given recent increases in this species’
breeding populations in the region, it is possible that bald eagles could nest in or near fuel
management areas in the future. Golden eagles may occur at maintenance sites as rare foragers,
and could potentially breed near fuel management areas.

**State**

**California Endangered Species Act (CESA).** The CESA (California Fish and Game Code,
Chapter 1.5, §§ 2050-2116) prohibits the take of any plant or animal listed or proposed for listing
as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFW has
jurisdiction over state-listed species. CDFW regulates activities that may result in “take” of
individuals listed under the Act (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt,
pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in
the definition of “take” under the California Fish and Game Code. CDFW, however, has
interpreted “take” to include the “killing of a member of a species which is the proximate result
of habitat modification.”

**California Environmental Quality Act.** CEQA and its implementing guidelines provide
guidance in evaluating impacts of projects to biological resources and determining which
impacts would be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Under CEQA Guidelines Section 15065, a project’s effects on biotic resources are deemed significant where the project would:

- Substantially reduce the habitat of a fish or wildlife species;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community; or
- Reduce the number or restrict the range of a rare or endangered plant or animal.

Section 15380(b) of the CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the ESA and the CESA, and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either USFWS or CDFW, or species that are locally or regionally rare.

CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of “species of special concern” that serve as “watch lists.” Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review in accordance with CEQA Guidelines Section 15380(b).

CNPS, a non-governmental conservation organization, has developed ranked lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

- CRPR 1A: Plants considered extinct.
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A: Plants presumed extirpated in California, but common elsewhere.
- CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
- CRPR 3: Plants about which more information is needed – a review list.
• CRPR 4: Plants of limited distribution – a watch list.

The CRPR listings are further described by the following threat code extensions:

• .1: Seriously endangered in California.
• .2: Fairly endangered in California.
• .3: Not very endangered in California.

Although CNPS is not a regulatory agency and plants on the CRPR lists have no formal regulatory protection, plants appearing on CRPR lists are, in general, considered to meet the CEQA Guidelines Section 15380 criteria and adverse effects on these species may be considered substantial. All impacts on biological resources are considered during the CEQA review of the proposed program in the context of this EIR.

California Fish and Game Code. The California Fish and Game Code includes regulations governing the use of, or impacts on, many of the state’s fish, wildlife, and sensitive habitats. CDFW exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of sections 1601–1603 of the Fish and Game Code. The Fish and Game Code requires a Lake or Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a water body or watercourse and for the removal of riparian vegetation.

Certain sections of the Fish and Game Code describe regulations pertaining to certain animal species. For example, Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW. Raptors (i.e., eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code Section 3503.5. This section states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Non-game mammals are protected by Fish and Game Code Section 4150, and other sections of the code protect other taxa.

Any work within channels with defined bed and banks, including creeks, drainage channels, and sloughs within the program area, would require a Streambed Alteration Agreement from CDFW in accordance with Section 1602 of the California Fish and Game Code. All native bird species that occur in the program area are protected by the state Fish and Game Code. Projects may be required to take measures to avoid impacts on nesting birds under California Fish and Game Code Sections 3503, 3513, and 3800. Native mammals and other species in the program area are also protected by the code.
Public Resources Code, Section 21083.4: Oak Woodland Conservation. California Public Resources Code (CPRC), Section 21083.4 requires that a county determine whether a project within its jurisdiction may result in conversion of oak woodlands that would have a significant effect on the environment. Santa Clara County has defined a significant effect as a decrease of 0.5-acre or more in native oak woodlands on a project site (Santa Clara County 2011). If a significance finding is made, the county shall require oak woodland mitigation that may include one or more of the following measures: (1) conserve oak woodlands through the use of conservation easements, (2) plant an appropriate number of trees, (3) contribute funds to the Oak Woodlands Conservation Fund, and (4) other measures approved by the county that reduce the impact to a less-than-significant level. Several types of projects are exempt from these provisions, including those undertaken in accordance with an approved Natural Community Conservation Plan, affordable housing projects, conversion of oak woodlands on agricultural land, and when the regulatory program of a state agency requires a plan or other written documentation containing environmental information (CEQA Section 21080.5). For purposes of this section, the term “oak” is defined as a native tree species in the genus *Quercus* with a diameter at breast height greater than 5 inches that is not a species designated as use for commercial purposes, including the cutting or removal of trees that are processed into logs, lumber, or other wood products.

Oak woodlands are present in the program area; however, only dead oak trees within 200 feet of SJWC-maintained facilities or structures and hazardous oak trees would be removed as a result of the proposed program maintenance activities. Thus, the proposed program would not result in the conversion of oak woodlands as defined under CEQA Section 21083.4.

Local

County of Santa Clara – Tree Preservation and Removal Ordinance (Section C16.6). The County of Santa Clara Tree Preservation and Removal Ordinance (County Code, §§ C16.1–C16.17) protects trees meeting specified conditions. Any person proposing to remove a protected tree is required to file for an administrative permit no less than 10 days prior to removal, or for heritage trees, 90 days prior to removal. A protected tree on any private or public property consists of any of the following:

- Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 75.4 inches or greater in circumference (24 inches or more in diameter) of all trunks in the following areas of the County:
  - Parcels zoned "Hillsides" (3 acres or less),
  - Parcels within a "-d" (Design Review) combining zoning district, and
  - Parcels within the Los Gatos Specific Plan area.
Any tree having a main trunk or stem measuring 18.8 inches or greater in circumference (6 inches or more in diameter) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 37.7 inches or greater in circumference (12 inches or more in diameter) of all trunks in the "h1" New Almaden Historic Preservation zoning district.

Any heritage tree, as that term is defined in § C16-2 of the Tree Preservation and Removal Ordinance.

Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to § C16-17(e) of the Tree Preservation and Removal Ordinance.

Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval, design review, special permit, or subdivision.

On any property owned or leased by the County of Santa Clara, any tree that measures 37.7 inches or greater in circumference (12 inches or more in diameter) measured at a height of 4.5 feet above ground level, or that exceeds 20 feet in height.

Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.

Removal of any protected trees would be subject to the requirements of the County of Santa Clara County Code and thus require a permit.

**Santa Clara County General Plan.** The *Santa Clara County General Plan* (Santa Clara County 1994) Resource Conservation (RC) chapter includes several policies focused on protection of biological resources. The following policies are relevant to the proposed program:

**Policy R-RC 19** Habitat types and biodiversity within Santa Clara County and the region should be maintained and enhanced for their ecological, functional, aesthetic, educational, medicinal, and recreational importance.

**Policy R-RC 21** Critical habitat areas should be excluded from cities' Urban Service Areas unless retained in non-urban uses, and rural incorporated development should be designed to avoid or mitigate impacts on upon habitat and natural areas.

**Standards of Significance**

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the proposed program would result in a significant impact on biological resources if it would:
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NMFS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NMFS;

- Have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404 (including, but not limited to, marsh, vernal pool, coastal, etc.) 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 local policies or ordinances protecting biological resources; or

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP).

**Impact Analysis**

**Methodology**

The primary adverse effects on biological resources of the proposed program would occur during implementation of maintenance activities and the period immediately following such activities. Potential impacts are expected to include adverse effects on wetland, instream, and upland habitats; impacts on associated plant communities and habitats of plant and wildlife species; and the potential degradation of water quality of wetland habitats caused by releases of sediment, or placement of fill or other construction materials.

Potential impacts on biological resources as a result of the program were systematically evaluated at the project level. These impacts were first evaluated to qualitatively describe how proposed program activities could impact biological resources and whether impacts would be temporary (i.e., occurring during maintenance activities and the period immediately following these activities), or ongoing and permanent.

Biological resources would be affected not only by specific proposed program activities but also, in a few cases, by mitigation measures. The net effect of these mitigation measures would be beneficial. However, in a few cases, adverse effects may occur during implementation of these measures. For example, the relocation of western pond turtles from work areas may be necessary.
to avoid mortality of those individuals, but this may cause stress on these individuals during relocation. Thus, the effects of the mitigation measures also were analyzed, where appropriate.

Environmental Impacts

**IMPACT: THE PROGRAM COULD HAVE ADVERSE EFFECTS ON SPECIAL-STATUS PLANT SPECIES (LESS THAN SIGNIFICANT)**

No special-status plant species are expected to occur at the maintenance sites, as identified in Table 10, Special-Status Plant Species with Potential to Occur at Fuel Management Areas; however, there is potential for one or more of 17 special-status plant species to be present in fuel management areas. For 11 of these species (i.e., Brewer's calandrinia, Brewer’s clarkia, Santa Clara red ribbons, fragrant fritillary, phlox-leaf serpentine bedstraw, Loma Prieta hoita, serpentine leptosiphon, woolly-headed lessingia, smooth lessingia, woodland woolythreads, and most beautiful jewel-flower), impacts from fuel management activities would be less than significant for one or more of the following reasons:

- Fuel management activities are currently ongoing; thus, special-status plant populations that are intolerant of such disturbance are not expected to occur within the existing fuel management areas, and any special-status plants that tolerate such regular disturbances are likely to continue to germinate and grow regardless of these activities.

- These plant species are unlikely to occur in the fuel management areas due to their limited distributions throughout their geographic ranges. Further, insofar as special-status plant populations generally occur within irregular patches and are not restricted to narrow strips of land (such as the approximately 50-foot-wide fuel management areas along both sides of the roadways), if any of these 11 special-status plant species were present and affected by the ongoing fuel management activities, the relative impact to the species in terms of loss of individuals would likely be relatively small when compared to the overall population, and would not represent a significant impact on the regional populations.

- Nine of these 11 species are annuals and one (fragrant fritillary) is an early-flowering bulbiferous plant. Fuel management activities occur in the dry season, after the flowering and seed development stages of these species; the majority of the work would involve weed-whacking with no ground disturbance, and the work leaves approximately 6 inches of herbaceous vegetation. As a result, the fuel management trimming activities should not substantially affect the number of seeds produced by these plants, if present. Further, the Loma Prieta hoita is a perennial that is anticipated to readily recover from seasonal trimming, if present.
For the remaining six special-status plant species with potential to occur (i.e., the federally listed Santa Clara Valley dudleya and the CRPR-listed bent-flowered fiddleneck, Santa Cruz Mountains pussypaws, Mount Hamilton fountain thistle, San Francisco collinsia, and Santa Cruz Mountains beardtongue), fuel management activities involving the use of hand-held weed cutting equipment are not expected to result in significant impacts. It is anticipated that, if present, the perennial Mount Hamilton fountain thistle and Santa Cruz Mountains beardtongue will readily recover from seasonal trimming, and that trimming of annual species (i.e., bent-flowered fiddleneck, Santa Cruz Mountains pussypaws, and San Francisco collinsia) would not substantially affect the number of seeds produced by these plants. In addition, the perennial Santa Clara Valley dudleya generally occurs on barren rock outcroppings or on serpentine barren soils that are devoid of weed species, and thus would not occur in areas targeted for fuel management using weed-cutting equipment.

Populations of these six species are small and/or sparsely distributed. Therefore, if any of these plants are present, the possible use of ground-disturbing vegetation removal equipment (e.g., masticators) or herbicides could result in significant impacts from direct damage and mortality of individuals or populations as a result of complete removal of vegetation and removal of propagules that could colonize other areas.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; and BMP VEG-4, outlining standard herbicide use requirements. These measures would apply when performing fuel management activities and would reduce potential impacts on special-status plant species, if present.

Implementation of BMPs would reduce impacts on most special-status plants, if present, by limiting the work window to the period outside of the flowering/seed development season, minimizing the work areas, and restricting use of herbicides. Potentially significant impacts on Santa Clara Valley dudleya, bent-flowered fiddleneck, Santa Cruz Mountains pussypaws, Mount Hamilton fountain thistle, San Francisco collinsia, and Santa Cruz Mountains beardtongue could occur, however, if present in a work area during ground-disturbing activities. However, BMP BIO-2, as detailed below, would ensure potential impacts to this special-status pant species would be less than significant.

**Best Management Practices**

**BIO-2:** If ground-disturbing equipment, such as a masticator, will be used for fuel management vegetation removal, SJWC will contract with a qualified biologist to survey the work area(s) for presence of Santa Clara Valley dudleya, bent-flowered fiddleneck, Santa Cruz Mountains pussypaws, Mount Hamilton fountain thistle, San Francisco collinsia, and
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Santa Cruz Mountains beardtongue before any work activities commence. To avoid and/or minimize potential impacts on special-status plants, the following actions will be taken in such areas:

- Pre-maintenance focused botanical surveys of the work area(s) for special-status plant species will be conducted by a qualified biologist during the appropriate blooming period(s), within two years prior to commencement of maintenance work. Surveys will be conducted in accordance with current CDFW and CNPS rare plant survey protocols (CDFW 2009 and CNPS 2001).

- If any special-status plant species are present at the work area(s), a qualified biologist will avoid impacts by implementing the following measures:
  - Flag the special-status plant population to create a clearly visible boundary of the sensitive area to be avoided.
  - Restrict vegetation management activities within the flagged area to cutting, weed-whacking, and/or hand removal, monitored by a qualified biologist. No ground disturbance or vegetation removal will be allowed within 10 feet of individual special-status plants.

IMPACT: THE PROGRAM COULD HAVE ADVERSE EFFECTS ON CALIFORNIA RED-LEGGED FROGS (LESS THAN SIGNIFICANT WITH MITIGATION)

Although there is a general lack of recent California red-legged frog survey data in the proposed program area because most of the lands are privately owned and inaccessible, California red-legged frogs have been recorded at or near SJWC maintenance sites, including at a small pond behind the dam at the Ostwald Intake in 1989 (CNDDB 2016), along Los Gatos Creek approximately 0.8-mile downstream of Austrian Dam in 1989 (CNDDB 2016), and at Lake Kittredge and Lake Cozzens in 2006 (EcoSystems West 2006). Focused daytime and nighttime surveys for California red-legged frogs conducted at Lake Kittredge and Lake Cozzens in 2010 detected no occurrences of this species, but found an abundance of non-native aquatic predators of this species (e.g., largemouth bass and bullfrogs) (EcoSystems West 2010b). Similarly, focused daytime and nighttime surveys for California red-legged frogs conducted during spring and summer 2014 along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam detected no California red-legged frogs, but found an abundance of non-native aquatic predators of this species (H. T. Harvey & Associates 2015). Thus, the California red-legged frog is not expected to occur regularly or in abundance at maintenance sites or fuel management areas. See Appendix E for a detailed program-specific Biological Assessment report for this species.
Nevertheless, given detection of this species in the Los Gatos Creek Watershed as recently as 2006, the potential for the California red-legged frog to occur at the maintenance sites cannot be dismissed. If the California red-legged frog does occur at maintenance sites, it is expected to make the greatest use of the aquatic channels/reservoirs and the riparian habitats immediately adjacent to them. It may forage or take refuge anywhere in the riparian habitats along the channels, but use of drier, more upland areas is expected to occur only during dispersal. Ostensibly suitable breeding habitat is present at the Hooker Intake Facility, Ostwald Intake Facility, Lake Cozzens, Lake Kittredge, Lake Ranch Reservoir, Lake Williams, and the wetlands downstream of the Austrian Dam spillway.

Maintenance activities at intakes, reservoirs, and culverts would involve disturbance, through access, staging, and maintenance, of approximately 15.7 acres of undeveloped habitats. Most of this disturbance (approximately 14.9 acres) and all fuel management activities (approximately 217 acres) would occur in non-riparian, upland areas, and primarily during the dry season. For example, proposed maintenance activities on much of this acreage involves weed cutting in upland areas, such as at dam faces. California red-legged frog presence in these non-aquatic upland areas during the dry season when maintenance work is conducted is highly unlikely, both due to the scarcity of the species throughout most SJWC lands and because of the species' reliance on aquatic habitats during the dry season.

Maintenance activities in aquatic habitats (approximately 0.76 acre) have a somewhat greater potential to affect small numbers of California red-legged frogs, if present. Most potential impacts would be temporary (e.g., temporary reduction in habitat quality or indirect disturbance of individuals), with the only permanent loss of aquatic habitat suitable for red-legged frogs (approximately 0.06 acre) resulting from installation/upgrade of new culverts, installation of inlet protection at existing culverts, and removal of sediment at Hooker Intake. However, the proposed excavation of accumulated sediment and gravel behind the dam and intake at the Hooker Intake Facility (0.05 acre) would benefit California red-legged frogs by enhancing aquatic habitat and creating breeding habitat (e.g., by creating or deepening pools).

Nevertheless, proposed program activities may result in the injury or mortality of individuals due to worker foot traffic, equipment use, or vehicle traffic. Seasonal movements of frogs may be temporarily affected during program maintenance activities because of disturbance. Substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation; such vibrations may also interfere with predator detection, causing a decrease in time spent foraging. In addition, California red-legged frogs may be crushed in their burrows or trapped and suffocated by the passage of heavy equipment. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Furthermore, maintenance activities requiring dewatering (which may be necessary during sediment removal at the Hooker Intake Facility and replacement of boards that
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protect the intake at the Ostwald Intake Facility) would temporarily reduce aquatic habitat for California red-legged frogs. Dewatering could also temporarily expose individuals to predators and may cause frogs to move to find new habitats, which may be inhabited already by other frogs, thus increasing competition.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; BMP GEN-3, requiring erosion and sediment control measures; BMP GEN-5, providing requirements for staging and stockpiling of materials; BMP GEN-6, providing stream access restrictions; BMP GEN-7, providing sediment removal restrictions at intake facilities; BMP GEN-8, regarding on-site hazardous materials management requirements; BMP GEN-9, providing requirements regarding existing hazardous materials; BMP GEN-10, requiring spill prevention and response procedures; BMP GEN-12, requiring vehicle and equipment maintenance procedures; BMP GEN-13, requiring vehicle and equipment fueling procedures; BMP GEN-14, providing specific dewatering measures; BMP GEN-16, requiring pump and generator operations and maintenance procedures; and BMP VEG-4, specifying standard herbicide use requirements.

Implementation of BMPs when performing maintenance and fuel management activities would reduce impacts on the California red-legged frog and its habitats. Maintenance and fuel management activities in upland areas, such as weed cutting and fuel management, do not remove habitat and have little, if any, effect on habitat quality for California red-legged frogs within the maintenance sites and fuel management areas, as the affected habitat will continue to provide cover and upland dispersal habitat for frogs even after maintenance or fuel management occurs. Implementation of BMPs, especially BMP GEN-2, BIO-1, and BIO-4, to minimize habitat impacts, would minimize any potential impacts on California red-legged frog habitats from these upland program activities. Furthermore, California red-legged frog presence in upland, non-aquatic habitat areas during the dry season is highly unlikely due to the scarcity of the species throughout most SJWC lands. As a result, little to no impact on individual California red-legged frogs is expected to occur from maintenance and fuel management activities in upland areas.

Maintenance activities in channel areas are not expected to interfere with successful breeding by the California red-legged frog, as in-channel activities would be restricted to the dry season, and proposed program activities are not expected to result in a substantial adverse effect on suitable aquatic habitat for the California red-legged frog. Furthermore, sediment removal from upstream of the Hooker Gulch Intake would create two instream pool areas that, in combination with the scattered hydrophytic vegetation present, would create new suitable breeding habitat for California red-legged frogs.
Best Management Practices

BIO-1: In program work areas identified as providing suitable habitat for the California red-legged frog, SJWC will ensure that applications of sprayable or powdered formulations of herbicides meet the following requirements:

- Apply only when the air is calm or moving away from suitable California red-legged frog habitat;
- Begin application in the portion of the work area nearest the suitable habitat and proceed away from the habitat; and
- Do not apply within 40 yards upwind of suitable habitat when air currents are moving toward the suitable habitat.

BIO-4: Before any dam face burrow removal begins, a qualified biologist will inspect each burrow using a burrow scope, making his/her best possible effort to fully inspect each burrow and associated chambers. The inspection process will include inspecting each burrow to the extent possible with the scope and, if necessary (i.e., if the full extent of the burrow cannot be seen), an iterative process of scoping and digging out the burrow will be implemented until the full extent of the burrow has been inspected. Where burrows are deeper and/or more complex and the full extent of the burrow cannot be inspected with the burrow scope, after placement of a locator line in the burrow (to maintain access to the burrow) the SJWC maintenance workers will excavate the cleared (inspected and no special-status species found) section of the burrow to allow the biologist to inspect the next segment. This step-wise process of inspection and excavation will occur in stages until the full extent of the burrow has been inspected or the SJWC’s project engineer has determined that additional digging into the dam face may begin to jeopardize the structural integrity of the dam.

When a burrow has been fully inspected and no special-status species have been found, the burrow will either be marked for destruction or excavated completely by the SJWC maintenance crew. If the burrow will not be destroyed the same day it is inspected, the biologist will ensure it is sealed so that no special-status species can enter (see “Burrow Sealing Methodology” below). Any non-special-status species found in a burrow will be allowed or encouraged to leave. If an individual of a special-status species is observed in a burrow, the burrow will be marked for avoidance. If the special-status species is a California red-legged frog, a buffer area where work will not occur will be delineated based on the best judgment of the qualified biologist on site. The burrow will be left in a state that will allow the special-status species to remain unharmed (i.e., the special-status species can exit the burrow and will avoid exposure). Only when the burrow cannot be left in a
“safe” condition (e.g., if the animal is found during excavation of a burrow), in the opinion of a qualified biologist, will relocation of the individual be considered, and then only when the SJWC has obtained approval from the USFWS.

If an entire burrow cannot be inspected completely, the burrow will be marked for avoidance. If any burrow marked for avoidance has been excavated during the inspection process, the biologist will ensure the opening is adequate so any animal inside will not be trapped or exposed. This may consist of the use of an inverted half of sufficiently large PVC pipe to support the opening. Clusters of burrows will be inspected as a group so that inspection or destruction activities will not result in inadvertent damage to other burrows in the cluster.

Burrow Marking Methodology

1. During the initial site visit to each dam where burrow removal activities are to occur, all burrows will be located and marked with bright pink pin flags.

2. When scoping each burrow, the following marking methodology will be used:
   a. If a burrow is cleared with the burrow probe, write the burrow number and the date on the pink pin flag and seal the burrow.
   b. If the burrow is not cleared for destruction (e.g., because it contains a special-status species, cannot be fully inspected with the probe due to its depth, or some other reason), the pink pin flag will be replaced with a green flag. The burrow number will be written on the new flag.

3. Any burrow that must be rechecked after the initial scoping effort will be marked with a red flag; such burrows would include burrows whose seal is not intact when re-inspected, burrows that are not sealed within five days of initial inspection, or new burrows that are created between the initial scoping effort and removal. These burrows would be detected during the re-inspection period just prior to removal.

4. All buffers where work is limited or prohibited (due to the potential for impacts on special-status species in a burrow) will be delineated by orange flagging tape, which will be strung between stakes or lath.

Burrow Sealing Methodology

If a burrow will not be destroyed the same day it is inspected, the burrow will be sealed using a small burlap bag (e.g., the kind used for sandbags) that will be filled with a small amount of dirt excavated by shovel at the burrow location and inserted into the burrow. Such bags can be molded to the shape of any burrow, yet once they are packed tightly into a burrow they will form a sturdy seal.
Nevertheless, due to the regional scarcity of the species, loss of individual California red-legged frogs as a result of in-channel activities may result in a significant impact on the regional population by reducing what is apparently an already small population in the Los Gatos Creek watershed.

**Programmatic Biological Opinion.** On June 18, 2014, USFWS issued a programmatic biological opinion to USACE for projects issued permits under CWA Section 404 and Section 10 of the Rivers and Harbors Act, including authorizations under 22 Nationwide Permits, for projects that may affect the California red-legged frog in nine San Francisco Bay area counties (USFWS 2014). Based on preliminary coordination with the USACE and USFWS, it is anticipated that, during Section 404 permitting for proposed program activities, USACE and USFWS will evaluate whether proposed program activities are covered by this programmatic biological opinion. In the event that the programmatic biological opinion is determined not to be applicable to the proposed program, a project-specific biological opinion would be obtained. In either case, the SJWC would implement the avoidance and minimization measures outlined in the programmatic biological opinion, and provided below as Mitigation Measure MM-BIO-1, as well as Mitigation Measures MM-BIO-2 and MM-BIO-3 to avoid, minimize, and compensate for impacts on individual California red-legged frogs that may occur as a result of program activities.

**Mitigation Measures**

**MM-BIO-1:** Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to California red-legged frogs.

Implement avoidance and minimization measures from the USFWS Programmatic Biological Opinion, even if a project-specific biological opinion is obtained, as follows in program work areas identified as providing suitable habitat for the California red-legged frog:

- The name and telephone number of SJWC's point of contact for all activities subject to the programmatic biological opinion or project-specific biological opinion will be provided to the USFWS no less than thirty (30) calendar days before the date of initial ground disturbance subject to the programmatic biological opinion or project-specific biological opinion.

- If formally requested before, during, or upon completion of ground disturbance and/or construction activities, SJWC will ensure that USFWS, CDFW, and/or their designated agents can, immediately and without delay, access and inspect the program work site(s) for compliance with the program description, conservation
measures, and reasonable and prudent measures of the programmatic biological opinion or project-specific biological opinion, and to evaluate potential program effects on the California red-legged frog and its habitat.

- A USFWS-approved biologist will be onsite during all activities that may result in take of California red-legged frog. The qualifications of the biologist(s) will be submitted to USFWS for review and written approval at least thirty (30) calendar days before earth-moving is initiated at program work site(s). The USFWS-approved biologist(s) will keep a copy of the programmatic biological opinion and the appendage or project-specific biological opinion in their possession when onsite.

- No more than twenty-four (24) hours before the date of initial ground disturbance, a pre-construction survey for the California red-legged frog will be conducted by a USFWS-approved biologist at the program work site(s). The survey will consist of walking the program limits and within the program work site(s) to ascertain the possible presence of the species. The USFWS-approved biologist(s) will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as those of California ground squirrels or gophers. If any adults, sub-adults, juveniles, tadpoles, or eggs are found, a USFWS-approved biologist will contact USFWS to determine if moving any of the individuals is appropriate. In making this determination, USFWS will consider if an appropriate relocation site exists. If USFWS approves moving animals, SJWC will ensure that the USFWS-approved biologist(s) is given sufficient time to move the animals from the work site(s) before ground disturbance is initiated. Only USFWS-approved biologists will capture, handle, and monitor the California red-legged frog.

- The USFWS-approved biologist(s) will be given the authority to freely communicate verbally, by telephone, by electronic mail, or in writing at any time with construction personnel, any other person(s) at the program work site(s) otherwise associated with the program, as well as USFWS, CDFW, or their designated agents. The USFWS-approved biologist(s) will have oversight over implementation of all the conservation measures in the programmatic biological opinion or project-specific biological opinion and will have the authority and responsibility to stop program activities if they determine any of the associated requirements are not being fulfilled. If a USFWS-approved biologist exercises this authority, USFWS will be notified by telephone and electronic mail within twenty-four (24) hours.

- The USFWS-approved biologist(s) will conduct employee education training for employees working on earth-moving and/or construction activities. Personnel will be required to attend the presentation, which will describe the California red-legged-
frog natural history; program avoidance, minimization, and conservation measures; legal protection of the species; and other related issues. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet(s) will be sent to USFWS within seven (7) calendar days of the completion of the training.

- SJWC will minimize adverse effects on the California red-legged frog by limiting, to the maximum extent possible, the number of access routes, construction areas, and equipment staging, storage, parking, and stockpile areas. Before the date of initial ground disturbance at the program work site(s), equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed will be identified, surveyed by the USFWS-approved biologist(s), and clearly identified with 5-foot–tall, bright orange plastic fencing. The fencing will be inspected by the USFWS-approved biologist(s) and maintained daily by SJWC until the last day that construction equipment is at the program work site(s).

- To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, SJWC will ensure that the USFWS-approved biologist(s) monitor the program work site(s) daily for the California red-legged frog.

- All program-related vehicle traffic will be restricted to established roads, construction areas, and equipment staging, storage, parking, and stockpile areas to the extent practicable. These areas will be included in pre-construction surveys and, to the maximum extent possible, will be established in locations disturbed by previous activities to prevent further adverse effects. Program-related vehicles will observe a 20-mile-per-hour maximum speed limit within construction areas, except on county roads and state and federal highways. Off-road traffic outside of designated and fenced program work areas will be prohibited.

- SJWC will ensure that bio-swales and bio-filtration areas are installed at the program work site(s) adjacent to newly constructed roadways to avoid and minimize sediment loading and point-source pollutants.

- Stormwater pollution prevention plans (SWPPPs) and erosion control BMPs will be developed and implemented to minimize any wind- or water-related erosion. SJWC will include provisions in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. Protective measures will include, at a minimum, the following:
3.0 **Environmental Effects**

- No discharge of pollutants from vehicle or equipment cleaning will be allowed into any storm drains or water courses.

- Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from water courses, except at established commercial gas stations or established vehicle maintenance facilities.

- Concrete waste and water from curing operations will be collected in washouts and will be disposed of offsite and not allowed into water courses.

- Spill containment kits will be maintained onsite at all times during construction operations and/or staging or fueling of equipment.

- Dust control measures will include use of water trucks and organic tackifiers to control dust in excavation-and-fill areas, covering temporary access road entrances and exits with rock (rocking), and covering of temporary stockpiles when weather conditions require.

- If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 5 millimeters to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow will be removed in a manner that will allow flow to resume with the least disturbance to the substrate.

- SJWC will maintain all construction equipment to prevent leaks of fuels, lubricants, or other fluids.

- Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with USFWS, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below:

  - When a California red-legged frog is encountered at a program work site, all activities that have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The USFWS-approved biologist(s) will then assess the situation to select a course of action that will avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog will be avoided and SJWC will allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is
encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location.

- California red-legged frogs that are in danger will be relocated and released by the USFWS-approved biologist(s) to suitable habitat on SJWC-owned lands outside the construction area within the same riparian area or watershed. Before the initial ground disturbance, SJWC will obtain approval of the relocation protocol from USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the program work site(s). The USFWS-approved biologist(s) will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. If the animal must be held in captivity, it will be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual will not contain any standing water.

- SJWC will immediately notify USFWS once the California red-legged frog has been moved and the site is secure.

- Uneaten human food and trash attract crows (Corvus brachyrhynchos), ravens (Corvus corax), coyotes (Canis latrans), and other predators of the California red-legged frog. A litter control program will be instituted at the program work site(s). All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers will be removed from the program work site(s) at the end of each working day.

- All grindings and asphaltic-concrete waste may be stored temporarily in previously disturbed areas absent of habitat and at a minimum of 150 feet from any culvert, pond, creek, stream crossing, or other waterbody. On or before the date of work completion at the program work site(s), the waste will be transported to an approved disposal site.

- Restoration and revegetation work for temporary effects will use site-appropriate native California plant species collected onsite or grown from local sources (i.e., local ecotype). Native or non-native plant species and material from non-local sources will be used only with prior written authorization from USFWS. All topsoil from natural lands will be removed, cached, and returned to the site according to USFWS-approved restoration protocols.
• SJWC will not apply insecticides or herbicides at the program work site(s) during construction or long-term operational maintenance where there is the potential for these chemical agents to enter creeks, streams, waterbodies, or uplands that contain potential habitat for the California red-legged frog.

• No pets will be permitted at the program work site(s), to avoid and minimize the potential for harassment, injury, and death of the California red-legged frog.

• No firearms will be allowed at the program work site(s) except for those carried by authorized security personnel or local, state, or federal law enforcement officials, to avoid and minimize the potential for harassment, injury, and death of the California red-legged frog.

• For onsite storage of pipes, conduits, and other materials that could provide shelter for California red-legged frogs, an open-top trailer will be used to elevate the materials above ground. This is intended to reduce the potential for animals to climb into the conduits and other materials.

• To the maximum extent practicable, no construction activities will take place during rain events or within 24 hours following a rain event. Before construction activities resume, a USFWS-approved biologist will inspect the program work site(s) and all equipment and materials for the presence of California red-legged frogs. If present, the animals will be allowed to move away from the program work site(s) of their own volition or will be moved by the USFWS-approved biologist(s) in accordance with the protocols described above.

• To the maximum extent practicable, nighttime construction will be minimized or avoided. Because dusk and dawn are often the times when the California red-legged frog is most actively moving and foraging, to the maximum extent practicable, earth-moving and construction activities will cease no less than 30 minutes before sunset and will not begin again until at least 30 minutes after sunrise. Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a program work site will be prohibited during the hours of darkness.

• Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the program work site(s) because California red-legged frogs can become entangled and trapped in them. Any such material found onsite will be removed immediately by the USFWS-approved biologist(s), construction personnel, or SJWC personnel. Materials using fixed weaves (with strands that cannot move), polypropylene, polymer, or other synthetic materials will not be used.
- Dust control measures will be implemented during construction or when necessary in the opinion of the USFWS-approved biologist(s) or USFWS, CDFW, or their authorized agent(s). These measures will consist of regular truck watering of construction access areas and disturbed soil areas with water or organic soil stabilizers to minimize airborne dust and soil particles generated by disturbance of graded areas. Regular truck watering will be a requirement of the construction contract. Watering guidelines for truck watering will be established to avoid excessive runoff flowing into contiguous or adjacent areas containing potential habitat for the California red-legged frog.

- Trenches or pits one foot deep or deeper that will be left unfilled for more than forty-eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, SJWC will ensure that wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are placed in the trench or pit to allow for their unaided escape. Auger holes or fence-post holes greater than 0.10-inch in diameter will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The USFWS-approved biologist(s) will inspect the trenches, pits, or holes before they are filled to ensure that no California red-legged frogs have become trapped in them. Each such trench, pit, or hole also will be examined by the USFWS-approved biologist(s) each workday morning at least 1 hour before work begins and in the late afternoon no more than 1 hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the USFWS-approved biologist(s) will remove and transport it to a safe location, or contact USFWS for guidance.

- The USFWS-approved biologist(s) will permanently remove any aquatic exotic (non-native) wildlife species, such as bullfrogs and crayfish, from the program work site(s), to the maximum extent possible.

- SJWC will report to USFWS any information about take or suspected take of listed wildlife species not exempted by the programmatic biological opinion or project-specific biological opinion. USFWS will be notified via electronic mail and telephone within twenty-four (24) hours from the time the information is received by SJWC. Notification will include the species, number of individuals, sex (if known), date, time, location of the incident or of the finding of a dead or injured animal, how the individual was taken, photographs of the specific animal, and names of the persons who observed the take and/or found the animal. The individual animal will be preserved, as appropriate, and held in a secure location until instructions are received from USFWS regarding the disposition of the specimen or until USFWS takes custody of the specimen.
MM-BIO-2: Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to California red-legged frogs or California red-legged frogs or western pond turtles.

In program work areas identified as providing suitable habitat for California red-legged frogs or western pond turtles (see Table 3-7 of the program Maintenance Manual contained in Appendix A), a USFWS-approved biologist will conduct one daytime survey for these species no more than 48 hours before the onset of maintenance activities, in accordance with the following procedures:

- If no California red-legged frogs or western pond turtles are found within the program work area(s) during the survey, the work may proceed.

- If a California red-legged frog or western pond turtle, or the eggs or larvae of either of these species, are found within the program work area(s) during the survey or during program activities, the USFWS-approved biologist(s) will implement the following measures:
  
  - For maintenance activities that will take less than 1 day to complete, the USFWS-approved biologist(s) will conduct a survey for California red-legged frogs and western pond turtles on the morning of and before the scheduled work.
  
  - If no California red-legged frogs or western pond turtles are found, the work may proceed.
  
  - If eggs or larvae of either species are found, a no-disturbance buffer zone will be established around the location of the eggs/larvae by the USFWS-approved biologist(s). Work may proceed outside of the buffer zone; however, work within the buffer zone will be postponed until the eggs have hatched and/or larvae have metamorphosed.
  
  - If an active western pond turtle nest is detected within the program work area(s), a 25-foot buffer zone around the nest will be maintained during the breeding and nesting season (April 1–August 31). The buffer will remain in place until the young have left the nest, as determined by the USFWS-approved biologist(s).
  
  - If adult or non-larval juvenile California red-legged frogs or western pond turtles are found, the USFWS-approved biologist(s) will implement one of the following two procedures:
1) If, in the opinion of the USFWS-approved biologist(s), the individual is likely to leave the work area on its own, and work can feasibly be rescheduled, a buffer zone will be established around the location of the individual. Work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the individual has left the area, as determined by the USFWS-approved biologist(s).

2) If, in the opinion of the USFWS-approved biologist(s), capture and removal of the individual to a safe location outside of the program work area(s) is less likely to result in adverse effects than leaving the individual in place and rescheduling the work (e.g., if the species could potentially hide and be missed during a follow-up survey), the individual will be captured and relocated by the USFWS-approved biologist(s) (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed.

- For maintenance and vegetation removal activities that will take more than 1 day to complete, the USFWS-approved biologist(s) will conduct a survey for California red-legged frogs and western pond turtles each morning before the scheduled work commences.

  - If eggs or larvae of either species are found, a buffer zone will be established around the location of the eggs/larvae and work may proceed outside of the buffer zone. Work within the buffer zone will be postponed until the eggs have hatched and/or larvae have metamorphosed.

  - If an active western pond turtle nest is detected within the program work area(s), a 50-foot buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1–August 31). The buffer zone will remain in place until the young have left the nest, as determined by the USFWS-approved biologist(s).

  - If adult or non-larval juvenile California red-legged frogs or western pond turtles are found, the individual will be captured and relocated by the USFWS-approved biologist(s) (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed.

**MM-BIO-3**: Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to California red-legged frogs.
SJWC will compensate for impacts on the California red-legged frog resulting from the proposed program by preserving (by means of an open space easement, conservation easement, or other similar instrument) and managing (through a habitat mitigation and monitoring plan [HMMP] to be developed upon approval of the site by USFWS and an endowment to ensure the perpetual management of the mitigation site) conservation lands that will provide habitat for the California red-legged frog of equal or greater value compared to the habitat being affected on the program work sites.

- SJWC has identified, and currently owns, lands that provide suitable habitat for the California red-legged frog and that are of similar or superior quality to the habitat within the program work sites. These lands, referred to hereafter as the “Lake Kittredge Conservation Area,” are located immediately northwest of Lake Kittredge. SJWC will create/restore 0.16-acre of aquatic habitat at the Lake Kittredge Conservation Area as mitigation for temporary program impacts on wetlands, permanent program impacts on wetlands and other waters, and potential temporary and permanent program impacts on California red-legged frogs. California red-legged frogs have previously been documented at Lake Kittredge.

- The habitat at the Lake Kittredge Conservation Area provides a transitional area between the lake and surrounding uplands. This area is shown in an aerial photograph on Figure 6-1 of the Maintenance Manual (Appendix A), and ground-level photographs are provided in Figure 6-2 of the Maintenance Manual (Appendix A). This parcel has been evaluated for potential creation and enhancement of aquatic resources; the site has been surveyed and a conceptual wetland mitigation plan has been developed. The concept plan includes creating seasonal and perennial wetlands that transition to emergent wetland vegetation with diverse structure (e.g., bulrushes and willows). The created wetland habitat will include off-channel seasonal wetland areas that will be designed specifically to facilitate California red-legged frog breeding through the creation of a deep pool area for breeding, as well as a shallow bench to act as a nursery for juveniles. Due to its seasonal nature, this wetland is expected to be less attractive to bullfrogs than the adjacent lake, thus improving the likelihood that red-legged frogs will be able to breed successfully at this area of known occurrence.

- Additional features of the mitigation plan include removing non-native invasive eucalyptus (gum) trees adjacent to the planned wetlands, which will enhance the wetland quality with native vegetation, and also developing sediment management areas for tributaries that discharge sediment toward the lake near the planned wetlands. The sediment management areas will remove and manage sediment without causing additional impacts on the wetland areas. The planned wetlands will provide suitable breeding, sheltering, and/or foraging habitat for a variety of wildlife species, including the California red-legged frog.
Because non-native aquatic predators of California red-legged frogs (e.g., large-mouth bass) are known to be present in Lake Kittredge, the restored wetland areas will be graded to minimize direct contact with the lake in an effort to deter dispersal of predators. The general approach is to grade the restoration area in such a way that groundwater or tributary discharge will support the restored wetlands without providing direct connection to Lake Kittredge. This will prevent predatory fish from entering the restored wetlands.

SJWC will develop and implement an HMMP describing the measures that will be taken to create/restore California red-legged frog aquatic breeding habitat and to monitor the effects of management on the California red-legged frog. That plan will include, at a minimum, descriptions of the following:

- The location and boundaries of the mitigation site and existing site conditions;
- Measures to be undertaken to enhance the mitigation site for California red-legged frogs;
- Proposed management activities, such as management of non-native invasive plants and animals, to maintain high-quality habitat conditions for the California red-legged frog;
- Species monitoring measures for the mitigation site, including specific goals and objectives, performance indicators/success criteria, monitoring methods, data analysis, and a monitoring/reporting schedule. At a minimum, success criteria will include the following:
  - Demonstration that the created wetlands hold water for a sufficient length of time for successful breeding by California red-legged frogs to occur; and
  - Demonstration that the created wetlands contain native vegetation suitable for attachment of California red-legged frog egg masses.
- The management plan’s adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and
- The funding mechanism in place to ensure long-term maintenance and monitoring of the mitigation lands.

Monitoring will be conducted annually until the mitigation has been determined to be successful (i.e., until success criteria are achieved) to document whether progress is being made to meet the success criteria and to identify any remedial actions that must be taken if the identified success criteria are not met.
• SJWC will submit the HMMP to USFWS for approval at least thirty (30) calendar days before the date of initial ground disturbance for mitigation site habitat creation. Ground disturbance will not be initiated until approval of the HMMP has been received from USFWS.

• The landowner (i.e., SJWC) is ultimately responsible for overseeing implementation of activities described in the HMMP in perpetuity and will be responsible for funding the planning, implementation, and monitoring of any remedial measures required by USFWS.

Impacts of Mitigation Measure MM-BIO-3. Creation/restoration of aquatic habitat at the Lake Kittredge Conservation Area that would occur under Mitigation Measure MM-BIO-3 could result in environmental impacts. Certain activities that would be carried forward as part of this measure could cause environmental effects through ground disturbance associated with eucalyptus (gum) tree removal, site grading, and ongoing sediment management. Grading activities could generate temporary construction noise effects on a nearby residence, pose safety hazards to motorists and pedestrians traveling on Ellege Road, and could result in adverse effects on water quality in the event that construction fuels are accidentally released. Substantial impacts on these resources would be avoided through implementation of the following BMPs.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; BMP GEN-3, requiring erosion and sediment control measures; BMP GEN-4, requiring dust control measures, BMP GEN-5, providing requirements for staging and stockpiling of materials; BMP GEN-8, regarding onsite hazardous materials management requirements; BMP GEN-9, providing requirements regarding existing hazardous materials; BMP GEN-10, requiring spill prevention and response procedures; BMP GEN-11, requiring equipment and fire prevention measures; BMP GEN-12, requiring vehicle and equipment maintenance procedures; BMP GEN-13, requiring vehicle and equipment fueling procedures; BMP GEN-19, minimizing noise disturbances to residential areas; and BMP GEN-20, applying work site housekeeping measures.

Such work may also affect sensitive species and their habitats. As shown in Table 3-7 of the Maintenance Manual (Appendix A), Lake Kittredge provides suitable habitat for the following special-status species: California red-legged frog, western pond turtle, and olive-sided flycatcher. Construction activities could result in temporary impacts on these species (e.g., temporary reduction in habitat quality or indirect disturbance of individuals). In the event that any of these special-status species are present during construction, potential adverse effects (e.g., potential loss of individual species) could also occur. Implementation of Mitigation Measures MM-BIO-4 and 5 would avoid and minimize effects on California red-legged frog and western pond turtle. BMPs GEN-1 and GEN-2, would avoid and minimize potential adverse effects on olive-sided flycatcher.
In conclusion, the above-described BMPs and additional mitigation measures presented in this section would ensure that impacts associated with aquatic habitat creation/restoration at the Lake Kittredge Conservation Area undertaken to compensate for impacts attributable to the proposed program would be mitigated to less-than-significant levels.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO WESTERN POND TURTLE (LESS THAN SIGNIFICANT WITH MITIGATION)**

Suitable habitat for the western pond turtle, a California species of special concern, is present within the creeks and reservoirs of the Los Gatos Creek Watershed at proposed program maintenance sites and fuel management areas, and the species has been recorded at Lake Cozzens (EcoSystems West 2006), Beardsley Intake Access Area (EcoSystems West 2003), Lower Cavanee Intake Access Area (CNDDB 2016), and the Oswald Intake Access Area (EcoSystems West 2010b). During red-legged frog surveys along Los Gatos Creek from the confluence of Hooker Gulch upstream to Austrian Dam in 2014, H. T. Harvey & Associates herpetologists did not observe any western pond turtles, suggesting that they are present only in low densities (H. T. Harvey & Associates 2014). Nevertheless, this species has the potential to occur in any aquatic habitat near proposed program maintenance sites and fuel management areas.

Maintenance activities at intakes, reservoirs, and culverts would involve disturbance, through access, staging, and maintenance, of approximately 15.7 acres of undeveloped habitats. However, most such disturbance (approximately 14.9 acres) and all fuel management activities (approximately 217 acres) would occur in upland areas, primarily during the dry season. For example, much of this acreage involves weed cutting in upland areas such as dam faces. Western pond turtle presence in these non-aquatic habitat areas during the dry season is unlikely, both due to the scarcity of the species throughout most SJWC lands and because of the species' reliance on aquatic habitats. Furthermore, pond turtles are unlikely to excavate nests on dam faces due to the dense, rocky, compacted nature of the soils that are present.

Program maintenance activities in aquatic and riparian habitats (approximately 0.76 acre) have a somewhat greater potential of affecting small numbers of western pond turtles. Most such impacts would be temporary (e.g., temporary reduction in habitat quality or indirect disturbance of individuals), with the only permanent impacts on suitable pond turtle habitat (approximately 0.06 acre of aquatic habitat) resulting from installation/upgrade of new culverts, installation of inlet protection at existing culverts, and removal of sediment at Hooker Intake. Nevertheless, proposed program activities may result in the injury or mortality of individuals due to worker foot traffic, equipment use, or vehicle traffic. In addition, western pond turtles may be crushed or trapped and suffocated by the passage of heavy equipment. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals.
Furthermore, maintenance activities requiring dewatering (e.g., potentially sediment removal at the Hooker Intake Facility and downstream of the emergency culverts at Lake Elsman, and replacement of boards that protect the intake at the Ostwald Intake Facility) would affect any western pond turtles that might be using the work site(s). Dewatering could temporarily expose individuals to predators and may cause turtles to move to find new habitats, which may already be inhabited by other turtles, thus increasing competition. Additionally, dewatering would result in a temporary loss of aquatic foraging and refugia habitat until completion of work at the site(s).

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; BMP GEN-3, requiring erosion and sediment control measures; BMP GEN-5, providing requirements for staging and stockpiling of materials; BMP GEN-6, providing stream access restrictions; BMP GEN-7, providing sediment removal restrictions at intake facilities; BMP GEN-8, regarding onsite hazardous materials management requirements; BMP GEN-9, providing requirements regarding existing hazardous materials; BMP GEN-10, requiring spill prevention and response procedures; BMP GEN-12, requiring vehicle and equipment maintenance procedures; BMP GEN-13, requiring vehicle and equipment fueling procedures; BMP GEN-14, specifying dewatering measures; BMP GEN-16, providing pump/generator operations and maintenance measures; and BMP VEG-4, providing standard herbicide use requirements.

No upland nesting habitat of the western pond turtle would be lost as a result of maintenance activities. Impacts on individual turtles may result from maintenance activities in aquatic and riparian habitats, however, particularly sediment removal maintenance activities; this potential impact would be significant due to the species' low regional populations. BMP BIO-4 and Mitigation Measure MM-BIO-2 (described above) would require worker awareness of this species' potential presence, avoidance of any individuals detected by workers, and pre-construction surveys in areas identified as suitable habitat. These measures would minimize the potential for impacts on individual turtles.

Implementation of BMP BIO-4 and Mitigation Measure MM-BIO-2 could result in the relocation of western pond turtles; if individuals are relocated to suitable habitat outside of a proposed program work site, they may be subjected to physiological stress and face a greater risk of predation, or may undergo increased competition with western pond turtles already present in the area to which they were relocated. Such relocation would be undertaken only after consultation with USFWS and/or CDFW, however, and only following a determination that the benefits of such relocation, in terms of avoiding direct injury or mortality, would outweigh any adverse effects. Therefore, with implementation of BMP BIO-4 and Mitigation Measures MM-BIO-4 and MM-BIO-5, the proposed program would not result in a substantial adverse effect on western pond turtle habitat, nor would it substantially reduce populations of the western pond turtle. Additionally, BMPs GEN-14 and BMP GEN-15, would apply. Proposed program impacts on this species would be less than significant with mitigation.
**Mitigation Measures**

**MM-BIO-4:** Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to western pond turtles.

When work in flowing streams is unavoidable, streamflow will be diverted around the work area by construction of a temporary dam or bypass.

- Before dewatering, the best means to bypass flow through the work area will be determined to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic vertebrates.
- The area to be dewatered will encompass the minimum area necessary to perform the maintenance activity.
- The period of dewatering will extend only for the minimum amount of time needed to perform the maintenance activity.
- Depending on the channel configuration, sediment removal activities may occur where the flows are not bypassed around the work site as long as a berm is left between the work area and streamflows to minimize water quality impacts during excavation activities.
- In reaches that contain deep pools, SJWC will maintain these pools, as is practical, by constructing temporary fencing surrounding the pool and avoiding pool dewatering. Pools at construction sites may be isolated by upstream or downstream barriers such as culverts. This approach does not apply to sediment removal activities that require removal of all sediment to restore the design capacity.

**Construction:**

- Where feasible and appropriate, dewatering will occur through gravity-driven systems and diversion structures shall be installed on concrete sections of the channels, such as concrete box culverts often used at road crossings.
- Construction of cofferdams will begin in the upstream area and continue in a downstream direction, and the flow will be diverted only when construction of the dams is completed.
- Coffer dams will be installed both upstream and downstream, not more than 100 feet from the extent of the work areas.
3.0 Environmental Effects

- Instream cofferdams will be built only from materials such as sand bags, clean gravel, or rubber bladders that will cause little or no siltation or turbidity. No earthen fill will be used to construct cofferdams. Plastic sheeting will be placed over sand bags to minimize water seepage into the maintenance areas. The plastic sheets will be firmly anchored to the streambed to minimize water seepage. If necessary, the footing of the cofferdam will be keyed into the channel bed at an appropriate depth to capture the majority of subsurface flow needed to dewater the streambed.

- Streamflows will be allowed to travel by gravity flow around or through the work site using temporary bypass pipes or culverts. Bypass pipe diameter will be sized to accommodate, at a minimum, twice the volume of the summer base flow.

- When gravity-fed dewatering is not feasible and pumping is necessary to dewater a work site, a temporary siltation basin and/or silt bags may be required to prevent sediment from re-entering the wetted channel.

Implementation:

- A qualified biologist will be present to ensure that fish and other aquatic vertebrates are not stranded during construction and implementation of channel dewatering.

- If it is necessary to remove stranded fish or other aquatic vertebrates, electrofishing will be used to collect and relocate fish from the work area. If relocation is necessary, Mitigation Measure MM-BIO-5 will be implemented.

- Downstream flows adequate to prevent fish or vertebrate stranding will be maintained at all times during dewatering activities.

- Diverted and stored water will be protected from maintenance activity-related pollutants, such as soils, equipment lubricants, or fuels.

- If necessary, discharged water will pass over some form of energy dissipater to prevent erosion of the downstream channel. Silt bags will be attached to the end of discharge hoses and pipes to remove sediment from discharged water.

- For full channel dewatering, filtration devices or settling basins will be provided as necessary to ensure that discharged water is not visibly more turbid than water in the channel upstream of the maintenance site. If increases in turbidity are observed, additional measures will be implemented, such as a larger settling basin or additional filtration. If increases in turbidity persist, the SJWC Maintenance Program Manager will be alerted and turbidity measurements may be required.
**Deconstruction:**

- When maintenance is completed, the flow diversion structure will be removed as soon as possible but no later than 48 hours after work is completed. Impounded water will be released at a reduced velocity to minimize erosion, turbidity, and harm to downstream habitat. Cofferdams will be removed in such a way that surface elevations of water impounded above the cofferdam are lowered at a rate not greater than one inch per hour.

- When diversion structures are removed, to the extent practicable, the ponded flows will be directed into the low-flow channel within the work site to minimize downstream water quality impacts.

- The area disturbed by flow bypass mechanisms will be restored at the completion of the maintenance activity. Restoration may include, but is not limited to, recontouring the area and planting riparian vegetation.

**MM-BIO-5:** Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to western pond turtles.

As identified in BMP GEN-14, before a work area is dewatered, fish and other aquatic vertebrates will be captured and relocated to avoid injury and mortality and to minimize disturbance. The following guidelines will apply:

- Before removal and relocation begin, a qualified fisheries biologist will identify the most appropriate release location(s). Release locations should have water temperatures similar to the capture location and offer ample habitat for released fish and aquatic vertebrates, and should be selected to minimize the likelihood of fish and aquatic vertebrates re-entering the work area or becoming impinged on the exclusion net or screen.

- The means of capture will depend on the nature of the work site, and will be selected by a qualified fisheries biologist who has a current CDFW scientific collecting permit and is experienced with capture and handling protocols for fish and aquatic vertebrates. Complex stream habitat may require the use of electrofishing equipment, whereas in outlet pools, vertebrates may be captured by pumping down the pool and then seining or dip-netting. Electrofishing will be used only as a last resort; if electrofishing is necessary, it will be conducted only by properly trained personnel following the National Marine Fisheries Service (NMFS) guidelines dated June 2000.
To the extent feasible, relocation will be performed during morning periods. Air and water temperatures will be measured periodically, and relocation activities will be suspended if temperatures exceed the limits allowed by NMFS guidelines.

To prevent aquatic vertebrates from re-entering the work area, the channel will be blocked by placing fine-meshed nets or screens above and below the work area. To minimize entanglement, mesh diameter will not exceed 1/8 inch. The bottom edge of the net or screen will be secured to the channel bed to prevent fish from passing under the screen. Exclusion screening will be placed in low-velocity areas to minimize impingement. Screens will be checked periodically and cleaned of debris to permit free flow of water.

Handling of aquatic vertebrates will be minimized. When handling is necessary, personnel will wet hands or nets before touching them.

Fish will be held temporarily in cool, shaded water in a container with a lid. Overcrowding in containers will be avoided; at least two containers will be used and no more than 25 fish will be kept in each container. Aeration will be provided with a battery-powered external bubbler. Fish will be protected from jostling and noise, and will not be removed from the container until the time of release. A thermometer will be placed in each holding container and partial water changes will be conducted as necessary to maintain a stable water temperature. Fish will not be held more than 30 minutes. If water temperatures reach or exceed NMFS limits, fish will be released and relocation operations will cease.

If fish are abundant, capture will cease periodically to allow release and minimize the time fish spend in holding containers.

Fish will not be anesthetized or measured. They will be visually identified to species level, however, and year classes will be estimated and recorded.

Reports on fish relocation activities will be submitted to CDFW and NMFS in a timely fashion.

If mortality during relocation exceeds five percent, relocation will cease and CDFW and NMFS will be contacted as soon as feasible.

When feasible, initial fish relocation efforts will be performed several days before the scheduled start of construction. The fisheries biologist will perform a survey on the day before construction begins to verify that no fish have moved back into the work area.
IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO BALD EAGLE, GOLDEN EAGLE, AND OSPREY (LESS THAN SIGNIFICANT)

Currently, the bald eagle (a state-listed endangered and fully protected species) is only a non-breeding visitor to the program area, primarily at Lexington Reservoir. The golden eagle (a state-listed fully protected species) nests in a range of open habitats, including scrub habitats, woodlands, and grasslands. In the Santa Cruz Mountains, this species breeds very sparsely, occurring primarily in areas with more open grassland than is present in the proposed program area. Although a few pairs breed at the edges of the Santa Clara Valley at elevations within the watershed (Horizon 2015), suitable breeding habitat is not present at the maintenance sites. The species may occur at maintenance sites as a rare forager, however, and it could breed near fuel management areas. Osprey (*Pandion haliaetus*) is not formally listed as a special-status species; however, its regional populations are very low, and all of the two to three known nesting pairs in Santa Clara County breed on SJWC lands.

None of these species are currently known to nest in locations that would be disturbed by maintenance and fuel management activities. Over the 10-year duration of the proposed program, however, there is potential for these species to nest in areas where they could be affected by fuel management activities, likely near a reservoir. This could be particularly true for the osprey, which currently nests on SJWC lands (such as near Lake Elsman) and the bald eagle, which has been increasing in abundance in the region over the past several decades.

If bald or golden eagles or ospreys nest within fuel management areas, activities such as removal of snags and hazard trees could result in the loss of an active nest. Furthermore, activities causing a substantial increase in noise, movement of equipment, or human presence near active nests during the breeding season may result in nest abandonment and possibly the loss of eggs or young as a result.

In addition, construction activities may have a temporary impact on foraging individuals through the alteration of foraging patterns (e.g., avoidance of work areas because of increased noise and activity levels during program maintenance activities). Proposed program activities are intended to maintain SJWC facilities, where ospreys (which primarily eat fish) and bald eagles (which primarily eat fish and waterfowl) in the proposed program area obtain most of their prey, and thus the proposed program would have a net benefit on foraging habitat for ospreys and bald eagles. Grassland and other open habitats (where golden eagles may forage) on or immediately adjacent to the maintenance sites and fuel management areas are not sufficiently extensive, and do not support such high concentrations of mammals, that any high-quality foraging habitat for golden eagles would be directly affected. Furthermore, because of the abundance of suitable foraging habitat in the proposed program area and the temporary nature of the majority of the impacts on upland habitats, proposed program activities are not expected to result in a substantial impact on foraging habitat for golden eagles.
SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; and BMP GEN-2, minimizing areas of disturbance for maintenance activities. These BMPs would reduce potential impacts on these three bird species to a less-than-significant level.

Although foraging habitats for these birds may be temporarily affected by proposed program maintenance and fuel management activities, such activities are not expected to rise to the threshold of a substantial adverse effect on regional populations of these species because of the regional abundance and local availability of alternative foraging habitat and, in the case of the bald eagle and osprey, because proposed program activities may help to maintain the facilities in which these species forage. Should any of these three species nest in areas close enough to proposed program activities for nest disturbance to occur, however, proposed program activities could result in the abandonment of an active nest. This would constitute a significant impact owing to the low regional populations of these species. However, BMP BIO-5 would be implemented to prevent proposed program activities from resulting in the abandonment of an active bald eagle, golden eagle, or osprey nest. With implementation of BMP BIO-5, impacts on golden and bald eagles and ospreys would be less than significant.

**Best Management Practices**

**BIO-5:** To avoid impacts, SCWD will implement the following restrictions on fuel management activities:

- Removal of snags and hazard trees ≥ 12 inches in diameter at 4.5 feet above grade, and thinning and pruning of vegetation within 100 feet of SJWC-maintained facilities and within 50 feet of SJWC-maintained roads will occur only during the non-breeding season (i.e., September 1–January 30).

- Trees or snags known through previous survey efforts to contain inactive bald eagle, golden eagle, or osprey nests will not be removed.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO LONG-EARED OWL, OLIVE-SIDED FLYCATCHER, AND YELLOW WARBLER (LESS THAN SIGNIFICANT)**

The long-eared owl and olive-sided flycatcher, both California species of special concern, may nest in wooded habitats in and adjacent to program maintenance sites and fuel management areas. In addition, the yellow warbler, also a California species of special concern, may nest in alder and willow riparian habitats in these areas. The long-eared owl, olive-sided flycatcher, and yellow warbler were assessed together because the potential impacts of the proposed program on these species would be similar.
Proposed program activities would result in temporary disturbance of potential nesting and foraging habitat for the long-eared owl, olive-sided flycatcher, and yellow warbler. Maintenance activities at intakes, reservoirs, and culverts are projected to involve disturbance, through access, staging, and maintenance, of approximately 14.9 acres of undeveloped upland habitats. In addition, fuel management activities would result in the temporary disturbance of 217 acres of upland habitats.

If maintenance activities are conducted during the nesting season (approximately February 1–August 31), adult birds are not expected to be killed or injured because they can easily fly from the work site before such effects occur. Eggs or young in nests may be destroyed by proposed program personnel or equipment, however. Proposed program activities during the nesting season that cause a substantial increase in noise or human activity near active nests may also result in the abandonment of active nests (i.e., nests with eggs or young) of long-eared owls, olive-sided flycatchers, and yellow warblers.

Although suitable habitat for the long-eared owl, olive-sided flycatcher, and yellow warbler is present at most maintenance sites and fuel management areas, these species are expected to be absent from most of the proposed program work areas due to their local distributions and relatively small populations. Thus, maintenance activities, including fuel management, are not expected to substantially reduce populations of the long-eared owl, olive-sided flycatcher, or yellow warbler.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; and BMP GEN-2, minimizing areas of disturbance for maintenance activities.

Maintenance activities, including fuel management, are not expected to substantially reduce populations of the long-eared owl, olive-sided flycatcher, or yellow warbler. In addition, the proposed program would temporarily affect a very small proportion of potential nesting and foraging habitat for these species. Thus, this impact would be less than significant, even in the absence of implementation of BMPs. Furthermore, implementation of BMPs (particularly BMP GEN-1, which restricts the removal of standing trees to the non-nesting period, September 1–January 31) would minimize impacts on these species. No further mitigation is required.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO VAUX’S SWIFT AND AMERICAN PEREGRINE FALCON (LESS THAN SIGNIFICANT)**

Two special-status bird species may occur at maintenance sites and fuel management areas as non-breeding migrants, transients, or foragers, but they are not known or expected to breed there or to occur in large numbers. These are the Vaux’s swift, a California species of special concern, and the American peregrine falcon, a state-listed fully protected species. Neither of these species
is expected to breed at maintenance sites and fuel management areas or to breed near enough to these areas to be disturbed by proposed program activities while breeding, owing to a lack of suitable nesting habitat at maintenance sites and fuel management areas.

During migration (and, for the peregrine falcon, in winter), small numbers of these species may forage or roost at maintenance sites and fuel management areas. Thus, the proposed program would have potential to affect foraging habitats and/or individuals of these species. Maintenance activities associated with the proposed program may result in a temporary direct impact through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities) but would not result in the loss of individuals.

SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities.

Maintenance activities associated with the proposed program would not result in the loss of individual Vaux’s swifts or American peregrine falcons. Furthermore, the proposed program area does not provide important foraging habitat that is used regularly or by large numbers of individuals of either of these species. Therefore, impacts on Vaux’s swifts and American peregrine falcons and their habitats resulting from the proposed program would be very limited, and may not occur at all. Accordingly, maintenance activities would not result in substantial reductions in local or regional populations, and would only affect a very low proportion of regionally available habitat. Thus, this impact would be less than significant, and would be reduced even further by implementation of BMP GEN-2. No further mitigation is required.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO SPECIAL-STATUS BATS (LESS THAN SIGNIFICANT)**

Unique among mammals, common bat species are colonial species; impacts on a colony of bats may be an impact on a substantial proportion of the local population. Colonies of Brazilian free-tailed bats (*Tadarida brasiliensis*), big brown bats, Yuma myotis, California myotis (*Myotis californicus*), and possibly other species may be present in trees, bridges, or rock crevices or under exfoliating tree bark in the vicinity of the program area. However, large maternity colonies of these species are not expected to occur along the stream channels in the proposed program area, as a review of all maintenance sites did not identify suitable sites for presence of large maternity colonies. Therefore, aside from tree removal (e.g., for fuel management), proposed program maintenance activities are not expected to result in disturbance to the point of abandonment of larger colonies. This would represent a less than significant impact to common bat species.

Two special-status bat species have potential to occur in the proposed program area: the pallid bat and western red bat, both of which are California species of special concern. Western red bats do not breed in the program area, so no maternity roosts would be affected by maintenance
or fuel management activities. Western red bats are strongly associated with intact cottonwood/sycamore valley riparian habitats at low elevations (Horizon Water and Environment 2015), and they roost solitarily in foliage. Due to the proposed program's limited impact on trees, especially riparian trees, it is unlikely that any western red bat roosting sites would be affected. In the event that such an impact does occur, any roosting red bats would be able to flee before the tree is removed. Although such flushed individuals may be subjected to increased risk of predation if flushed during the daytime, few, if any, western red bats are expected to be present in areas where they would be disturbed by proposed program activities.

Pallid bats may forage throughout the maintenance sites and fuel management areas, and larger, older oak trees in open-canopy woodlands provide suitable roosting habitat. Maternity colonies are not expected to be present along the stream channels at the maintenance sites, as a review of all maintenance sites did not identify suitable sites for presence of maternity colonies. Removal of hazardous trees and snags in fuel management areas along access roads has the potential to result in the loss of maternity colonies, however, and removal of trees at maintenance sites has the potential to result in the loss of roost sites. When trees containing roosting colonies or individual pallid bats are removed or modified, individual bats could be physically injured or killed; could be subjected to physiological stress from being disturbed during torpor; or could face increased predation because of exposure during daylight. In addition, nursing young may be subjected to disturbance-related abandonment by their mothers. Proposed program related disturbance near a maternity roost of pallid bats, which could result from fuel management activities, could cause females to abandon their young. Such impacts could be significant because the species' population and available roosting habitat are limited locally and regionally and because loss of habitat or individuals may have a substantial adverse effect on local and regional populations of the species. SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities.

Western red bats do not breed in the program area, so no maternity roosts would be affected. In addition, western red bats are not colonial. Thus, the permanent loss of a roost site (e.g., tree) would not result in a substantial impact on local or regional populations as only individuals, not entire colonies, would be affected. Furthermore, suitable roost sites for this species are sufficiently abundant and widespread that the loss of a small number of trees from proposed program maintenance activities would not substantially reduce roost site availability, either locally or regionally. Therefore, impacts on western red bats would be less than significant.

Maintenance activities may result in the permanent loss or abandonment of a day roost for pallid bats. This impact would be significant because this species’ population and available habitat are limited locally and regionally and because loss of roosting habitat may have a substantial impact on local and regional populations of the species. BMPs BIO-6 and BIO-10 would reduce potential impacts on bats, including the pallid bat, by providing alternative roosting habitat.
suitable for use by this species, thereby ensuring that the proposed program does not substantially reduce the number or restrict the range of this rare species, have a substantial adverse effect on this special-status species, or impede the use of its nursery sites. With implementation of BMPS BIO-6 and BIO-10, the impact on pallid bat roost sites would be less than significant.

**Best Management Practices**

**BIO-6:** SJWC will implement the following restrictions on fuel management activities:

- If high-quality habitat for roosting bats (i.e., large trees with cavities of sufficient size to support roosting bats, as determined by a qualified bat biologist) is present, within 2 weeks before the onset of work activities, a qualified bat biologist will conduct a survey to look for evidence of bat use. If evidence of use is observed, or if high-quality roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), an evening survey and/or a nocturnal acoustic survey may be necessary to determine if a bat colony is present and to identify the specific location of the bat colony.

- If no active maternity colony or non-breeding bat roost is located, program work can continue as planned.

- If an active maternity colony or non-breeding bat roost is located, the program work will be redesigned to avoid disturbance of the roosts, if feasible.

- If an active maternity colony is located and program work cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, disturbance will be scheduled to take place outside the maternity roost season (March 15–July 31), and a disturbance-free buffer zone (determined by a qualified bat biologist) will be maintained during this period.

- If an active non-breeding bat roost is located and program work cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, the individuals will be safely evicted between August 1 and October 15 or between February 15 and March 15 (as determined by a Memorandum of Understanding with CDFW). Bats may be evicted through exclusion after notifying CDFW. Trees with roosts that must be removed will first be disturbed at dusk, just before removal that same evening, to allow bats to escape during the darker hours. BMP BIO-10 may need to be implemented subsequently (determined by a qualified bat biologist).
**BIO-10:** If, after implementation of BMP BIO-6, a qualified bat biologist identifies a tree containing a pallid bat maternity roost that is to be removed by program activities, the qualified bat biologist will design and determine an appropriate location for an alternative roost structure. If a tree containing a pallid bat maternity roost is not removed, but program related disturbance causes the abandonment of the roost site (even during the non-breeding season), then SJWC will either monitor the roost site to determine whether the affected species returns to the roost, or construct an alternative roost. If SJWC elects to monitor the roost and bats do not return within 1 year, then an alternative roost will be constructed.

A qualified bat biologist will determine the appropriate location for the alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity, and oversee installation of a new roost structure. The roost structure either will be built to specifications determined by a qualified bat biologist, or will be purchased from an appropriate vendor. The structure will be placed as close to the affected roost site as feasible. SJWC will monitor the roost for up to 3 years (or until occupancy is determined, whichever occurs first) to determine use by bats. If, by Year 3, pallid bats are not using the structure, a qualified bat biologist, in consultation with CDFW, will identify alternative roost designs or locations for placement of the roost, place the new roost at the agreed-upon location, and monitor the new roost for an additional 3 years (or until occupancy has been verified).

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO SAN FRANCISCO DUSKY-FOOTED WOODRATS (LESS THAN SIGNIFICANT)**

The San Francisco dusky-footed woodrat is a California species of special concern. It is locally common in undisturbed portions of appropriate habitat throughout its range. Riparian and woodland habitats throughout the program area provide suitable nesting habitat for this species, although only a few nests are present at maintenance sites, such as the Hooker Intake Facility.

Proposed program activities could result in the injury or mortality of dusky-footed woodrats from vegetation clearing, vehicle traffic, equipment use, and worker foot traffic. Because woodrats are nocturnal, individual woodrats occupying nests during the daytime (when maintenance activities occur) may be crushed or killed during maintenance activities. Movements of woodrats within their individual home ranges may be temporarily affected due to disturbance of onsite habitats. Disturbances may also cause woodrats to flee their nests, exposing them to a greater risk of predation. Individuals that are disturbed by proposed program activities may relocate to areas that are occupied by other woodrats and, as a result, may experience increased intraspecific competition (i.e., individuals in disturbed habitat moving to areas that are already occupied) and pressure on available resources.
Surveys of the maintenance sites detected only small numbers of woodrat nests, however, due to low densities at these particular sites and the limited extent of the impact areas at the maintenance sites. As a result, the number of woodrats and woodrat nests that could be affected is low, particularly in the context of this species’ regional abundance. Based on the low number of woodrat nests observed at maintenance sites during proposed program surveys, and as a result of the species’ regional abundance and high reproductive capabilities, proposed program impacts on dusky-footed woodrats would not have a substantial effect on regional populations.

SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities.

San Francisco dusky-footed woodrats are relatively common in suitable habitats regionally, and have high reproductive capabilities. Thus, based on the low number of woodrat nests that might be affected by the proposed program, impacts on dusky-footed woodrats would not have a substantial effect on regional populations, and this impact would be further reduced by implementation of BMPs. Therefore, this impact is considered less than significant. No further mitigation is required.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO RINGTAILS (LESS THAN SIGNIFICANT)**

The status and distribution of the ringtail, a state-listed fully protected species, in the program area are poorly understood, but ringtails are likely very rare in Santa Clara County. Ostensibly suitable habitat for the ringtail is present at forested maintenance sites and fuel management areas, but few confirmed records exist.

Proposed program maintenance activities may result in the loss of a small amount of foraging habitat for ringtails, and possibly temporary impacts on foraging individuals due to construction-related disturbance (e.g., ringtails may avoid proposed program work sites and alter their foraging behaviors because of increased noise and activities). These impacts would not result in the loss of foraging individuals, which are mobile enough to avoid construction personnel and equipment. If ringtails are denning in maintenance sites or fuel management areas, then maintenance activities could potentially result in injury or mortality of small numbers of individuals.

SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities.

Based on the low densities at which ringtails occur, the number of individuals of this species that could be disturbed by proposed program activities is very small, and this impact would be further reduced by implementation of BMPs. Given the low potential for impacts on ringtails, the
number of individuals that could be affected by the proposed program represents a very small proportion of the regional population of this species. Furthermore, these species would still be able to move through the program area during and following maintenance activities. As a result, this impact does not achieve the threshold of a substantial reduction in this species’ regional population, and thus, the impact would be less than significant. No further mitigation is required.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO OAK WOODLANDS (LESS THAN SIGNIFICANT)**

Oak woodlands are considered one of California’s most productive and important natural communities. They support a rich plant and wildlife community; at least 60 of California’s 169 terrestrial mammal species and approximately 60 species of birds are closely associated with oak woodlands (Santa Clara County 2005). In addition, oaks play an important role in helping to maintain water quality in streams and rivers by reducing erosion. Yet more than one million acres of oak savannah and oak woodlands in California are estimated to have been lost since 1945 (Santa Clara County 2005). As a result, numerous state and local agencies have established guidelines, regulations, and ordinances regarding the conservation of oak woodlands. Although oak woodlands are present in the program area, only dead oak trees within 200 feet of SJWC-maintained facilities and structures and hazardous oak trees would be removed as a result of proposed program activities. In order to ensure less-than-significant impacts to oak woodlands would occur, implementation of the following BMP VEG-1 would be required.

**Best Management Practices**

**VEG-1:** Routine oak tree pruning measures for program activities shall be limited as follows:

- Pruning will be performed according to the most recently published American National Standards Institute (ANSI) A300 Pruning Standards and International Society of Arboriculture BMPs for Tree Pruning, which include guidance on pruning practices, pruning objectives, and pruning methods.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO RIPARIAN HABITAT (LESS THAN SIGNIFICANT WITH MITIGATION)**

Riparian habitats in the proposed program area offer a wide range of biological functions for fish and wildlife, ranging from providing habitat for fish and other aquatic species, to foraging and nesting habitat for birds, to movement corridors for numerous terrestrial species. As a result, impacts on riparian habitats would affect various fish and wildlife species.
Other than riparian vegetation that is considered part of potentially jurisdictional wetlands or waterways, no disturbance of riparian vegetation is currently projected as part of the proposed program activities; see the discussion below for impacts on potentially jurisdictional wetlands, including associated riparian habitat.

Existing riparian vegetation at some maintenance sites includes herbaceous riparian vegetation rather than woody vegetation. Herbaceous vegetation typically dominates the banks of reaches that would be disturbed by maintenance and fuel management activities. Such vegetation is naturally adapted to disturbance regimes, and therefore regenerates quickly and, compared to woody riparian vegetation dominated by trees and shrubs, provides relatively low functions and values for wildlife. As a result, impacts of proposed program activities on non-wetland, herbaceous riparian vegetation are less than significant.

However, over the 10-year course of the proposed program, minor temporary or permanent impacts on non-jurisdictional riparian habitat may occur, for example as a result of roadside maintenance activities, vegetation management around facilities, or as a result of creation or restoration of wetlands/other waters at Lake Kittredge. For the purposes of this analysis, it has been assumed that up to 0.5-acre of temporary or permanent impacts would occur to woody riparian vegetation over the 10-year proposed program implementation period. This is a potentially significant impact.

SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities; and BMP GEN-6, providing stream access restrictions. Implementation of BMPs would minimize disturbance of woody riparian vegetation. Nevertheless, the proposed program could result in temporal losses of woody riparian functions and values because complete avoidance cannot be accomplished while still meeting the proposed program goals. Thus, significant residual impacts on woody riparian vegetation would remain. The impact of proposed program activities on woody riparian vegetation would be significant because it would result in temporary loss of riparian vegetation. With implementation of Mitigation Measure MM-BIO-6, and BMPs BIO-11, and BIO-12 this residual impact would be less than significant.

**Mitigation Measures**

**MM-BIO-6:** Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to riparian habitat.

SJWC will reseed soil exposed as a result of maintenance activities according to the following procedures:
• Sites where maintenance activities result in exposed soil will be stabilized to prevent erosion. Disturbed areas will be seeded with native seed as soon as is appropriate after maintenance activities are complete. An erosion control seed mix may be applied to exposed soils and down to the ordinary high water mark of stream channels and reservoirs.

• The seed mix should consist of California native grasses (e.g., *Hordeum brachyantherum*, *Elymus glaucus*, and *Vulpia microstachys*) or an annual, sterile seed mix.

• Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or other appropriate erosion control measures may be put in place.

**Best Management Practices**

**BIO-11:** Riparian revegetation plantings will be installed in areas where woody riparian vegetation has been impacted, and will consist of locally collected native species. Species selection will be based on surveys of natural areas on the same creek or a nearby creek that have a similar ecological setting and/or as appropriate for the site location, and plant materials will be grown from materials collected from the greater Los Gatos Creek watershed.

**BIO-12:** Permanent impacts on riparian resources are not anticipated to occur under the proposed program; however, if permanent construction impacts on riparian habitats are unavoidable, habitat will be restored and enhanced in a manner that achieves no net loss in acreage or function. Mitigation will be provided at a 2:1 ratio (acres of mitigation to acres of impact) through creation or restoration of riparian habitat. Permanent impacts are defined as those impacts that result in the replacement of riparian habitat by a habitat type/land use that prevents woody riparian vegetation from regenerating on the site, or impacts that are repeated at a frequency that precludes woody riparian vegetation from maturing on the site.

• Areas where temporary, maintenance-related impacts take place will be restored to pre-Project conditions. Restoration would typically include decompacting and finish-grading the soil surface and applying appropriate erosion control measures, including seeding with native plants, and may include removal of invasive species for a period to be specified in the HMMP (as described below). For temporary impacts on woody riparian habitat caused by maintenance activities, and where mitigation is provided through onsite restoration of habitat, mitigation will be provided at a 1.1:1 ratio (acres of mitigation to acres of impact). The additional 10 percent of mitigation area
(beyond 1:1) accounts for the temporal loss of riparian functions and values between the time of impact and the time when the mitigation habitat is functioning. If mitigation for temporary impacts is provided outside the impact area and is already established when the impact occurs (so that there is no temporal loss of riparian habitat), then the mitigation ratio will be 1:1 to provide an equal match.

- Riparian tree and shrub planting will enhance and restore habitat for birds, amphibians, and other wildlife using terrestrial riparian areas while providing shade, sources of organic matter, and coarse woody debris; improving root and soil structure; and providing other water quality benefits to aquatic species. Restoration will be accomplished by revegetating creek banks, benches, and floodplains within the Los Gatos Creek Watershed where the existing physical conditions (i.e., topography, hydrology, and soils) are suitable to establish native riparian habitat. The target species composition, location, and extent of riparian planting and restoration will be related to the functions affected by proposed program maintenance activities. Riparian planting may also include site preparation, including minor grading and topsoil preparation, and incorporation of soil amendments. Riparian planting will address temporary impacts on vegetation associated with maintenance activities. The preference is to prioritize riparian planting onsite at maintenance locations and, in this way, to provide direct onsite mitigation for maintenance activity impacts. Where opportunities for onsite riparian planting and restoration are unavailable or highly constrained, other watershed locations will be identified that can provide suitable mitigation opportunities.

- SJWC will reduce the populations of ecologically detrimental invasive plant species to enhance and improve riparian habitat in the Los Gatos Creek Watershed. Removing invasive vegetation and, where appropriate, restoring native vegetation will provide compensatory mitigation for impacts on riparian habitat from maintenance activities. Invasive species will be removed such that the activity does not substantially reduce the functions and values of the site, and that it provides a net environmental benefit in the short and long term.

- SJWC will develop an HMMP describing the measures that will be taken to enhance and manage the riparian mitigation lands. The plan will contain the following components (or other components as modified by regulatory agency permitting conditions):
  - Summary of habitat impacts and proposed mitigation ratios;
  - Location of mitigation site(s) and description of existing site conditions;
- Mitigation design, including: existing and proposed site hydrology; grading plan (if appropriate), including bank stabilization or other site stabilization features; soil amendments and other site preparation elements, as appropriate; planting plan; irrigation and maintenance plan; and remedial measures/adaptive management.

- Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of riparian vegetation type (e.g., dominance by natives) and extent appropriate for the riparian restoration location, and provision of ecological functions and values equal to or exceeding those in the riparian habitat affected. At a minimum, success criteria will include following: at Year 10 post-planting, canopy closure at the mitigation site will be at least 60 percent of the canopy closure at a nearby reference site (i.e., a site supporting the same habitat type as that being established at the mitigation site).

- Contingency plan for mitigation elements that do not meet performance or final success criteria.

- Monitoring will be conducted annually until the mitigation has been determined to be successful (i.e., until success criteria are achieved) to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met.

- An open space or conservation easement, or other similar instrument, will be recorded on property associated with the mitigation lands to protect the riparian plant and wildlife resources in perpetuity.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO PROTECTED WETLANDS (LESS THAN SIGNIFICANT WITH MITIGATION)**

Because maintenance activities include in-channel sediment removal, removal of debris from drainage ditches, and installation of new culverts, maintenance activities associated with the proposed program would result in both temporary and permanent disturbance to potentially jurisdictional wetlands and other waters. Wetlands provide a variety of important functions, such as sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, and aquatic and terrestrial wildlife species habitat.

Proposed program activities could result in hydrologic interruption (e.g., dewatering or diversion), vegetation removal, degradation of water quality (e.g., increased sedimentation and turbidity), and other temporary direct impacts on wetlands and other waters. Impact acreages for
wetlands and other waters of the U.S. (i.e., USACE jurisdictional habitats) were calculated based on field surveys of the maintenance sites and conservative estimates of the areas to be affected by maintenance activities (see Appendix F).

Sediment and/or debris would be removed from eight reservoirs/intakes, as well as the Lake Elsman emergency culvert outfalls. In total, the proposed program would result in 0.70 acre of temporary impacts on potentially jurisdictional USACE wetlands and other waters. These impacts include 0.14 acre of temporary impacts on wetlands (including 0.11 acre of impacts on woody riparian habitat) and 0.55 acre of temporary impacts on other waters. These areas are likely also under the jurisdiction of the CDFW and RWQCB.

Permanent losses would result from culvert repairs, including replacement of damaged culverts, installation of new culverts, and installation of erosion protection treatments. These impacts are considered permanent because they would result in the replacement of wetlands and other waters by rock, metal, or concrete. In total, the proposed program would result in up to 0.13 acre of permanent impacts on potentially jurisdictional USACE wetlands and other waters. These impacts include less than 0.01 acre of permanent impacts on wetlands and 0.12 acre of permanent impacts on other waters. Culvert repairs would result in long-term improvement of water quality in wetlands and other waters by reducing erosion and resulting sediment inputs; however, this beneficial impact would be partially offset by a reduction in vegetated wetlands, which provide sediment-holding functions.

Permit applications for the proposed program were submitted to the USACE, RWQCB, and CDFW in February 2016. As of this writing, the permit applications are under review and SJWC has met with the regulatory agencies to discuss the program and permitting needs. SJWC is requesting issuance of a CWA Section 404 programmatic, five-year Regional General Permit from USACE. SJWC is also requesting a CWA Section 401 Water Quality Certification for a five-year period (with a five-year renewal option) from RWQCB, and a long-term (five-year) Routine Maintenance Agreement (RMA) from CDFW per California Fish and Game Code Section 1600. Though different regulatory agencies have different jurisdictional authority for different resources, proposed compensatory wetland mitigation ratios are the same for each resource agency (2.2:1 for permanent impacts and 1.1:1 for temporary impacts to riparian wetlands). Mitigation for temporary impacts to non-riparian wetlands are proposed at a 1:1 ratio and mitigation for temporary impacts to non-vegetated, low functioning non-wetland waters are proposed at a 0.1:1 ratio. These mitigation ratios are still preliminary, and under review/subject to change. Also, a mitigation plan is currently under revision for the proposed wetland mitigation near Lake Kittredge per regulatory agency input.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; BMP GEN-3, requiring erosion and sediment control measures; BMP GEN-5,
providing requirements for staging and stockpiling of materials; BMP GEN-6, providing stream access restrictions; BMP GEN-7, providing sediment removal restrictions at intake facilities; BMP GEN-8, regarding onsite hazardous materials management requirements; BMP GEN-9, providing requirements regarding existing hazardous materials; BMP GEN-10, requiring spill prevention and response procedures; BMP GEN-12, requiring vehicle and equipment maintenance procedures; BMP GEN-13, requiring vehicle and equipment fueling procedures; BMP GEN-14, specifying dewatering measures; BMP GEN-16, providing pump/generator operations and maintenance measures; and BMP VEG-4, providing standard herbicide use requirements.

Because maintenance activities include in-channel sediment removal, removal of debris from drainage ditches, and installation of culverts, impacts on jurisdictional wetlands and other waters cannot be completely avoided. Thus, routine maintenance activities at SJWC facilities in the Los Gatos Creek Watershed would affect wetlands and other waters.

Water quality and habitat values in unvegetated aquatic habitats (i.e., other waters) subject to temporary disturbance are expected to quickly return to pre-maintenance conditions following the completion of proposed program activities. Thus, no mitigation is warranted for temporary program impacts on other waters. Even in vegetated wetlands, recolonization may occur relatively quickly. For example, according to the *Instream Wetland Vegetation Regrowth Study* conducted by the Santa Clara Valley Water District (Horizon Water and Environment 2015), many vegetated wetland areas would restore themselves within one to two years following sediment removal or other disturbances. Furthermore, implementation of the BMPs listed above would minimize changes to water quality by reducing erosion, controlling sediment, and preventing spills. Nevertheless, the proposed program would result in temporal loss of habitat functions and values provided by wetlands and other waters, such as sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, and aquatic and terrestrial wildlife species habitat. Thus, in the absence of mitigation, temporary impacts on wetlands and other waters are considered potentially significant because they could result in the temporal loss of ecologically valuable habitat.

The proposed program would also result in small permanent losses of wetlands (200 square feet) and other waters (210 square feet) that are ecologically valuable. Thus, permanent impacts on both wetlands and other waters are considered significant. Impacts on special-status wildlife species resulting from disturbance or loss of wetlands and other waters were previously addressed.

Mitigation Measure MM-BIO-7 would therefore be implemented to reduce impacts on wetlands and other waters to a less-than-significant level by compensating for temporary impacts on vegetated wetlands and permanent impacts on vegetated wetlands and unvegetated aquatic habitats. With implementation of Mitigation Measure MM-BIO-7, this potential impact would be less than significant.
Mitigation Measure

MM-BIO-7: Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to wetlands.

Mitigation for temporary and permanent impacts on potentially jurisdictional wetlands and other waters will be provided at a minimum ratio of 1:1 (1 acre of mitigation for every 1 acre of disturbance) through creation or restoration of wetlands/other waters. Temporary impacts on wetlands caused by maintenance activities where mitigation is provided through onsite restoration of habitat will be mitigated at a 1.1:1 ratio (acres of mitigation to acres of impact). The additional 10 percent of mitigation area (beyond 1:1) accounts for the temporal loss of riparian functions and values between the time of impact and the time when the mitigation is functioning.

- In coordination with USACE, CDFW, and RWQCB permitting processes, mitigation may be achieved through one or more options, potentially including (but not limited to) the following:
  - Onsite restoration or creation of wetlands or aquatic habitats (including removal of onsite fill) if feasible onsite restoration opportunities exist;
  - Offsite restoration/creation of wetlands; and/or
  - Purchase of mitigation credits at approved mitigation banks within the San Francisco Bay region.

- If SJWC restores wetlands onsite or offsite, a qualified biologist selected by SJWC will develop a Jurisdictional Wetland and Waters Mitigation and Monitoring Plan, which will contain the following components (or other components as modified by regulatory agency permitting conditions):
  - Summary of habitat impacts and proposed mitigation ratios;
  - Goal of the restoration to achieve no net loss of habitat functions and values;
  - Location of mitigation site(s) and description of existing site conditions;
  - Mitigation design:
    - Existing and proposed site hydrology;
    - Grading plan (if appropriate), including bank stabilization or other site stabilization features;
• Soil amendments and other site preparation elements, as appropriate;
• Planting plan;
• Irrigation and maintenance plan;
• Remedial measures/adaptive management;
• Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of wetland vegetation type (e.g., dominance by native hydrophytes) and extent appropriate for the wetland restoration location, and provision of ecological functions and values equal to or exceeding those in the wetlands and waters that are affected. At a minimum, success criteria will include: at Year 5 post-planting, ground cover will be at least 70 percent of that at a nearby reference site; and
• Contingency plan for mitigation elements that do not meet performance or final success criteria.

SJWC will implement the Jurisdictional Wetland and Waters Mitigation and Monitoring Plan. Monitoring will be conducted annually to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met. Monitoring will continue until the mitigation has been determined to be successful (i.e., until success criteria are achieved).

**IMPACT: THE PROGRAM COULD RESULT IN INTERFERENCE WITH WILDLIFE MOVEMENT OR WILDLIFE CORRIDORS (LESS THAN SIGNIFICANT)**

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that link these different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging wildlife can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened populations can be replenished from other areas. In the program region, the vegetation communities along streams and rivers often function as environmental corridors, and in the program area, Los Gatos Creek and its tributaries are expected to function as wildlife movement corridors. In addition, other natural habitats (e.g., oak woodlands and mixed riparian forest and woodland) and the shorelines of reservoirs function as pathways for terrestrial wildlife movement (e.g., by mammals) that allow wildlife to move along these areas.
Temporary impediments on movement by aquatic species may result from the dewatering of proposed program work sites during maintenance activities. In addition, by creating open areas or patches with unsuitable vegetation types, vegetation management activities could restrict some wildlife species from moving between suitable habitat patches. Noise and disturbance associated with maintenance activities could cause species that commonly use habitats at proposed program work sites for dispersal to at least temporarily avoid moving through the sites. Although maintenance activities may result in temporary adverse effects on terrestrial wildlife movement, once maintenance activities are complete, wildlife movement conditions would be similar to pre-project conditions, and wildlife dispersal through the program area is expected to return to existing conditions. Sufficient habitat and cover would remain in the program area following completion of maintenance activities so that wildlife would still be able to disperse across the area.

SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities; BMP GEN-2, minimizing areas of disturbance for maintenance activities; and BMP GEN-14, specifying dewatering measures.

Implementation of BMPs, especially BMP GEN-14, involving diversion of streamflow around work areas, would be sufficient to ensure that maintenance activities do not result in temporary barriers to movement by aquatic species. Furthermore, although proposed program activities may temporarily affect terrestrial wildlife movement during construction, wildlife would still be able to move through the proposed program work sites during construction, and no permanent impacts on wildlife movement would result from the proposed program. Thus, with implementation of BMPs, the proposed program would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors; this impact would be less than significant. No further mitigation is required.

**IMPACT: THE PROGRAM COULD RESULT IN IMPACTS TO NESTING BIRDS (LESS THAN SIGNIFICANT WITH MITIGATION)**

No obvious, large-scale bird nursery sites, such as heron or egret rookeries or nesting bird colonies known to support large numbers of breeding birds, are known to be present in the proposed program area. Some species of birds nest in and adjacent to the program area, however, and implementation of maintenance and fuel management activities has the potential to result in the injury or mortality of nesting birds, especially eggs or young in active nests. Such impacts may occur as a result of vegetation removal or the disturbance of individuals nesting within or immediately adjacent to proposed program work areas.
SJWC would implement BMP GEN-1, restricting when work would occur for specific maintenance activities and specifically restricting the removal of standing trees to the non-nesting bird period, September 1–January 31; and BMP GEN-2, minimizing areas of disturbance for maintenance activities.

Nevertheless, program activities have the potential to impact nesting birds (including raptors) protected under the federal Migratory Bird Treaty Act and California Fish and Wildlife Code, if activities were to occur during the nesting bird season (February 1 through August 31). If birds are nesting in or adjacent to the work areas during the nesting season, then program activities could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. This potentially significant impact would be reduced to a less-than-significant level by the following mitigation measure.

**Mitigation Measure**

**MM-BIO-8:** Prior to the issuance of the grading permit(s) by Santa Clara County for activities at the Hooker Intake facility of the proposed program, the following measures shall be included on or attached to grading plans to mitigate impacts to nesting birds.

To avoid possible impacts to nesting birds, vegetation removal and other maintenance activities will be scheduled to take place outside of the bird nesting season. If construction occurs during the bird nesting season (February 1 through August 31), then a qualified biologist will conduct a pre-activity survey for nesting birds to ensure that no nests would be disturbed during program activities. This survey shall be conducted no more than seven days prior to the initiation of disturbance activities.

If no active nests are present within 250 feet of disturbance activities, then activities can proceed as scheduled. However, if an active nest is detected during the survey within 250 feet of construction, then the establishment of a protective disturbance-free buffer zone from each active nest (typically 250 feet for raptors and 50-100 feet for other species, to be determined by the qualified biologist) will be clearly delineated or fenced until the juvenile bird(s) have fledged (left the nest), unless the biologist determines that activities would not impact the active nest.

**IMPACT: THE PROGRAM MAY CONFLICT WITH LOCAL POLICIES PROTECTING BIOLOGICAL RESOURCES (LESS THAN SIGNIFICANT)**

Fuel management activities may result in the loss of regulated trees as defined by the County of Santa Clara Tree Preservation and Removal Ordinance.

SJWC would implement BMP GEN-2, minimizing areas of disturbance for maintenance activities; and BMP GEN-6, specifying stream access restrictions.
Implementation of BMPs would minimize proposed program impacts on regulated trees. Complete avoidance may not be feasible, however, while still meeting the proposed program’s fuel management and safety goals. The loss of a regulated tree would be considered a significant impact under CEQA because it conflicts with the Santa Clara County Code. The code requires that a permit be obtained for removal of regulated trees, as well as replacement with trees of like kind. With implementation of Best Management Practices VEG-2, BIO-13, and BIO-14, this impact would be less than significant.

**Best Management Practices**

**VEG-2**: Prior to the issuance of any grading permit(s) by Santa Clara County for the proposed program, the following measures shall be included on or attached to all grading plans to mitigate impacts to regulated trees.

A qualified fire scientist, registered professional forester, certified arborist, or Ph.D.-qualified forest ecologist will conduct a forest fuel management assessment and identify potential fuel hazards to be removed or vegetation to be thinned/pruned. This assessment will specifically address the recommended removal of County-regulated trees.

**BIO-13**: The following measures concerning downed tree and log management shall be implemented, which in some cases will pertain to County-regulated trees:

- At intake facilities, logs or downed trees that are less than 10 feet long will be relocated directly downstream of the intake facility and kept in the stream channel.

- Logs or downed trees that are more than 10 feet long will be cut into pieces shorter than 10 feet long and then relocated downstream of the intake facility. The intention is to maintain woody debris in the stream channel as much as possible.

- Before any downstream placement of woody debris, SJWC will check to see that any downstream facilities (such as road crossings or culvert outfalls) would not be impaired by the placement of woody debris in the channel. If downstream facilities could be affected by the placement of woody debris, then SJWC will seek alternative upland disposal site for the woody debris, typically on lands within the riparian corridor near the stream channel.

**BIO-14**: SJWC will comply with the Santa Clara County Code (§§ C16.1–C16.17) and submit permit applications for removal of regulated trees. Any trees to be removed may require replacement. Replacement trees will be of a like kind and species of tree removed, if native and feasible, or of a kind and species to be determined by the County Planning Department.
3.4 Cultural Resources

This section describes the existing conditions related to cultural resources in the program area and presents the proposed program’s potential effects on cultural and paleontological resources. It also describes federal, state, and local regulations related to cultural and paleontological resources applicable to the maintenance program.

Cultural resources are the remains and sites associated with past human activities, including prehistoric and ethnohistoric Native American archaeological sites, historic archaeological sites, historic buildings, and elements or areas of the natural landscape that have traditional cultural significance. A paleontological resource is defined as fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils.

Most of this section has been derived from a cultural resources memorandum prepared for the proposed program by Pacific Legacy (2014). Note that while an EIR is an informational disclosure document, information about the specific location of archaeological sites and sacred lands is specifically restricted from disclosure under State CEQA Guidelines Section 15120(d) in accordance with California Government Code Section 6254. Because the Pacific Legacy memorandum identifies the locations of cultural resources in the vicinity of the proposed program area, it has not been made public; rather, this section provides a general summary of the cultural resources in the proposed program area. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning impacts to cultural resources were received during the NOP process.

Environmental Setting

Study Area

The program’s cultural resources evaluation focused on a half-mile radius area from the five major water bodies in the Los Gatos Creek Watershed. These five water bodies are the Lake Ranch Reservoir, Lake Kittredge/Lake Cozzens, Lower Lexington Reservoir, Upper Lexington Reservoir and Lake Elsman. Each of these five areas represents a study area for purposes of this EIR.

The area of potential effects considered by the program’s cultural resources evaluation for the proposed program included intake facilities, SJWC access roads, the nearly 100 roadside culvert
replacement/rehabilitation sites, and other features maintained by SJWC under the maintenance program. At the intake facility sites and the roadside culverts, a 100-foot buffer was included in the area of potential effects to account for access and staging areas.

The purpose of the area of potential effects was to determine site sensitivity in relation to specific watercourses and facilities under the proposed program. If present, a large number of previously identified cultural resources located within the area of potential effects would indicate an elevated level of sensitivity, suggesting an increased likelihood that proposed program activities could cause adverse impacts to cultural resources.

**Records Search**

A records search for the program area was conducted at the Northwest Information Center of the California Historical Resources Information System.

The records search identified a total of 18 recorded cultural resources within the study area: 16 historic structural resources, two prehistoric sites, and one multi-component site that included both prehistoric and historic-period elements. Prehistoric archaeological sites include, but are not limited to, areas with lithic scatter, bedrock milling features, habitation debris, and culturally darkened soil (or midden). Historic-period architectural/structural properties include structures with foundation/structure pier and roof, wells/cisterns, intake facilities (e.g., Beardsley), fence line, water tank and steel perch, and earthen dams.

Table 12, Cultural Resources Studies Conducted in Program Area, summarizes the cultural resources previously conducted with the program area. Table 13, Previously Documented Resources in Program Area, summarizes previously documented resources in the program area.

**Study Area Records Search Results**

**Lake Ranch Study Area.** No cultural resources have been recorded in the Lake Ranch study area. Two studies have been completed in this study area, but both concluded negative results. One study was conducted as part of an inventory for California Department of Transportation District 5 rural highways, including State Route 17, and the other was conducted on private property south of Lake Ranch Reservoir. Citations for the studies are provided in Table 12, Cultural Resources Studies Conducted in Program Area. No studies have been conducted along the shoreline of Lake Ranch Reservoir or along the stream tributaries draining to the reservoir.

**Lake Kittredge/Lake Cozzens Study Area.** In the Lake Kittredge/Lake Cozzens study area, three resources have been recorded (see Table 13, Previously Documented Resources in Program Area). These resources are the Beardsley Intake Facility (P-43-001455), the Iona School (P-43-001222), and remains of a building and road (P-43-001131) possibly associated with a pharmacy.
when the property was owned by Jesuits. Seven studies have been completed in this study area, which encompasses the reservoir sites and a small parcel to the north. The Beardsley Intake Facility located within this study area was recommended as not eligible for the California Register of Historical Resources by previous studies.

Table 12  Cultural Resources Studies Conducted in Program Area Vicinity

<table>
<thead>
<tr>
<th>Study Number</th>
<th>Report Title</th>
<th>Author</th>
<th>Date</th>
<th>Results</th>
<th>Type</th>
<th>Study Extent/Acreage</th>
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<tbody>
<tr>
<td>S-27825</td>
<td>Cultural Resources Evaluation Project on Ambrose Road</td>
<td>Cartier, R.</td>
<td>2003a</td>
<td>Negative</td>
<td>Survey</td>
<td>15 Acres</td>
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<tr>
<td>S-38430</td>
<td>Cultural Resources Inventory of Caltrans District 5 Rural Highways</td>
<td>Mikkelson, P., et al.</td>
<td>2001</td>
<td>66 resources</td>
<td>Survey</td>
<td>83 linear miles, 40-90 feet on either side of centerline</td>
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<tr>
<td>S-5243</td>
<td>Archaeological Reconnaissance of Novitiate Timber Harvest</td>
<td>Edwards, R., G. Breschini, and P.V. Podzorski</td>
<td>1979</td>
<td>one resource</td>
<td>Survey</td>
<td>1,120 acres</td>
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<tr>
<td>S-14769</td>
<td>Cultural Resources Evaluation Lake Canyon Wastewater Facilities</td>
<td>Cartier, R., et al.</td>
<td>1992</td>
<td>one resource  (in program area)</td>
<td>Survey</td>
<td>2.25 acres</td>
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<tr>
<td>S-21247</td>
<td>Archaeological Addendum for Timber Operations on Non-Federal Lands</td>
<td>Huff, E.</td>
<td>1998a</td>
<td>four resources</td>
<td>Survey</td>
<td>125 acres</td>
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<tr>
<td>Study Number</td>
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<td>Date</td>
<td>Results</td>
<td>Type</td>
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<tr>
<td>S-26309</td>
<td>Cultural Resources Assessment of Historic Dams</td>
<td>William Self Associates, Inc.</td>
<td>2001</td>
<td>three resources (in program area)</td>
<td>Survey</td>
<td>1.5 acres</td>
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<tr>
<td>S-27103</td>
<td>Cultural Resources Evaluation 20059 Black Arrow Road</td>
<td>Cartier, R.</td>
<td>2003b</td>
<td>Negative</td>
<td>Non known</td>
<td>eight acres</td>
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<tr>
<td>S-32330</td>
<td>Archaeological Survey Report for San Jose Water Company Non-Industrial Timber Harvest Plan</td>
<td>Dias, M.</td>
<td>2005a</td>
<td>None in study area</td>
<td>Survey</td>
<td>1,002 acres</td>
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<td>S-34607</td>
<td>Cultural Resources Evaluation 19375 Montevina Road</td>
<td>Cartier, R.</td>
<td>2006a</td>
<td>Negative</td>
<td>Survey</td>
<td>15 acres</td>
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Lake Elsman Study Area

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<th>Date</th>
<th>Results</th>
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<th>Study Extent/ Acreage</th>
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<tbody>
<tr>
<td>S-14173</td>
<td>Archaeological Inspection of Austrian Dam Spillway Replacement Project</td>
<td>Medin, A.</td>
<td>1992</td>
<td>Negative</td>
<td>Survey</td>
<td>two acres</td>
</tr>
<tr>
<td>S-32330</td>
<td>Archaeological Survey Report for San Jose Water Company Non-Industrial Timber Harvest Plan</td>
<td>Dias, M.</td>
<td>2005a</td>
<td>four resources (in program area)</td>
<td>Survey</td>
<td>1,002 acres</td>
</tr>
</tbody>
</table>

Upper Lexington Reservoir and Los Gatos Creek to Ostwald Intake

<table>
<thead>
<tr>
<th>Study Number</th>
<th>Report Title</th>
<th>Author</th>
<th>Date</th>
<th>Results</th>
<th>Type</th>
<th>Study Extent/ Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-4751</td>
<td>Archaeological Evaluation of Gillette Cluster Development</td>
<td>Cartier, R.</td>
<td>1979</td>
<td>Negative</td>
<td>Survey</td>
<td>13.2 acres</td>
</tr>
<tr>
<td>Study Number</td>
<td>Report Title</td>
<td>Author</td>
<td>Date</td>
<td>Results</td>
<td>Type</td>
<td>Study Extent/Acreage</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>S-5248</td>
<td>Archaeological Evaluation of Parcel on Idlewood Road</td>
<td>Archaeological Resource Management</td>
<td>1979</td>
<td>Negative</td>
<td>Survey</td>
<td>two acres</td>
</tr>
<tr>
<td>S-14709</td>
<td>Archaeological and Historical Resources Survey Merrill THP</td>
<td>Jani, M.</td>
<td>1993</td>
<td>Negative</td>
<td>Survey</td>
<td>100 acres</td>
</tr>
<tr>
<td>S-32330</td>
<td>Archaeological Survey Report for San Jose Water Company Non-Industrial Timber Harvest</td>
<td>Dias, M.</td>
<td>2005a</td>
<td>10 resources (within program area)</td>
<td>Survey</td>
<td>1,002 acres</td>
</tr>
<tr>
<td></td>
<td>Lower Lexington Reservoir Study Area</td>
<td></td>
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</tr>
<tr>
<td>S-4566</td>
<td>Archaeological Reconnaissance of Novitiate Parcel</td>
<td>Dietz, S.</td>
<td>1978</td>
<td>Negative</td>
<td>Survey</td>
<td>30 acres</td>
</tr>
<tr>
<td>S-7460</td>
<td>Cultural Resources Evaluation</td>
<td>Cartier, R.</td>
<td>1985</td>
<td>Negative</td>
<td>Survey</td>
<td>7,000 linear feet</td>
</tr>
<tr>
<td>S-8016</td>
<td>Cultural Resources Evaluation Three Parcels at Lexington Reservoir</td>
<td>Cartier, R. and G.A. Laffey</td>
<td>1986a</td>
<td>two resources (in program area)</td>
<td>Survey</td>
<td>180 acres</td>
</tr>
<tr>
<td>S-9345</td>
<td>Archaeological Survey Report Replacement of 17 Culverts Along Route 17</td>
<td>Kelly, M., and M. Buss</td>
<td>1987</td>
<td>Negative</td>
<td>Survey</td>
<td>Not stated</td>
</tr>
<tr>
<td>Study Number</td>
<td>Report Title</td>
<td>Author</td>
<td>Date</td>
<td>Results</td>
<td>Type</td>
<td>Study Extent/Acreage</td>
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<tr>
<td>S-14259</td>
<td>Cultural Resources Evaluation Los Gatos Golf Course</td>
<td>Archaeological Resources Management</td>
<td>1992</td>
<td>one resource</td>
<td>Survey</td>
<td>150 acres</td>
</tr>
<tr>
<td>S-16626</td>
<td>Phase II Archaeological Research: Los Gatos Country Club</td>
<td>Clark, M.</td>
<td>1994</td>
<td>two resources</td>
<td>Survey, re-survey, testing</td>
<td>four acres</td>
</tr>
<tr>
<td>S-16946</td>
<td>Cultural Resources Evaluation Seven Hills School</td>
<td>Flynn, K.</td>
<td>1995</td>
<td>Negative</td>
<td>Survey</td>
<td>8.7 acres</td>
</tr>
<tr>
<td>S-17180</td>
<td>Historic Significance Evaluation CDF Building</td>
<td>Thornton, M.</td>
<td>1994a</td>
<td>20 resources (one in program area)</td>
<td>Survey</td>
<td>Alma Fire Station</td>
</tr>
<tr>
<td>S-21107</td>
<td>Archaeological Field Inspection Lexington Reservoir Wireless Base Site</td>
<td>Holman, M.</td>
<td>1999</td>
<td>one resource (in program area)</td>
<td>Survey</td>
<td>0.5 acre</td>
</tr>
<tr>
<td>Study Number</td>
<td>Report Title</td>
<td>Author</td>
<td>Date</td>
<td>Results</td>
<td>Type</td>
<td>Study Extent/Acreage</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>S-22810</td>
<td>Cultural Resources Evaluation 50 Acres on Black Road</td>
<td>Cartier, R.</td>
<td>2000</td>
<td>Negative</td>
<td>Survey</td>
<td>58 acres</td>
</tr>
<tr>
<td>S-23290</td>
<td>Cultural Resources Evaluation McDougal Properties</td>
<td>Archaeological Resource Management</td>
<td>2000</td>
<td>one resource (in program area)</td>
<td>Survey</td>
<td>8.5 acres</td>
</tr>
<tr>
<td>S-23553</td>
<td>CDF Project Review Report Bear Creek Redwoods</td>
<td>Napton, L., and Greathouse, E.</td>
<td>2000</td>
<td>nine resources (one in program area)</td>
<td>Specific site recording</td>
<td>346 acres</td>
</tr>
<tr>
<td>S-24191</td>
<td>CDF Project Review Report Bear Creek Redwoods</td>
<td>Archaeological Resource Management</td>
<td>2001a</td>
<td>Negative</td>
<td>Survey</td>
<td>57 acres</td>
</tr>
<tr>
<td>S-26309</td>
<td>Cultural Resources Assessment of Historic Dams</td>
<td>William Self Associates, Inc.</td>
<td>2001</td>
<td>one resource (in program area)</td>
<td>Survey</td>
<td>1.5 acres</td>
</tr>
<tr>
<td>S-27649</td>
<td>Cultural Assessment Report</td>
<td>Brown, K. et al.</td>
<td>2003</td>
<td>one resource (in program area)</td>
<td>Survey</td>
<td>85 acres</td>
</tr>
<tr>
<td>Study Number</td>
<td>Report Title</td>
<td>Author</td>
<td>Date</td>
<td>Results</td>
<td>Type</td>
<td>Study Extent/Acreage</td>
</tr>
<tr>
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</tr>
<tr>
<td>S-34600</td>
<td>Cultural Resources Evaluation for 3 Parcels</td>
<td>Archaeological Resource Management</td>
<td>2006</td>
<td>Negative</td>
<td>Survey</td>
<td>18.5 acres</td>
</tr>
<tr>
<td>S-34616</td>
<td>Cultural Resources Evaluation 19915 and 19925 Wright Drive</td>
<td>Cartier, R.</td>
<td>2006b</td>
<td>Negative</td>
<td>Survey</td>
<td>two acres</td>
</tr>
</tbody>
</table>

Source: Horizon Water and Environment 2016

Lake Elsman Study Area. Approximately 20 percent of the Lake Elsman study area has been inspected in the past. With the exception of one small survey, most portions of this study area were inspected for the SJWC Non-Industrial Timber Parcel Plan (Horizon Water and Environment 2015). Four resources were recorded within the study area: a fence line (P-43-001827), Austrian Dam (P-43-001831), a steel water tank and perch (P-43-001830), and a historic period artifact scatter and trail (P-43-001835).

Upper Lexington Reservoir and Los Gatos Creek to Oswald Intake Study Area. Five studies have been conducted in the Upper Lexington Reservoir and Los Gatos Creek to Oswald Intake study area. This study area lies at the upper end of Lexington Reservoir southeast along Los Gatos Creek to Oswald Intake. Approximately 20 percent of the area has been subjected to cultural resources survey. The largest study was completed by Dias for the SJWC Non-Industrial Timber Harvest Plan. The survey included a large portion of the west bank of Los Gatos Creek from Hendry’s Creek upstream to Williams Reservoir. In addition to survey work on the south bank of Los Gatos Creek, Dias inspected several parcels within the watershed but outside of the proposed program area (Horizon Water and Environment 2015).

One prehistoric site (P-13-00265) is located at the upper end of Lexington Reservoir. The site is recorded as a bedrock milling station with four outcrops containing 13 mortar cupules. This site is submerged when Lexington Reservoir is full. The three other resources within the study area (Table 13, Previously Documented Resources in Program Area) are the South Pacific Coast Railway Grade (P-43-001780), Ryland Diversion Dam (P-43-001829), and Moody Intake (P-001834).
Table 13  Previously Documented Resources In Program Area

<table>
<thead>
<tr>
<th>Site Designation</th>
<th>Period</th>
<th>Description</th>
<th>Author</th>
<th>Date</th>
<th>Topographic Map</th>
<th>NRHP/CRHR Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Kittredge and Lake Cozzens Study Area</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P-43-1131</td>
<td>Historic</td>
<td>Historic structure with foundation/structure pier and roof</td>
<td>Huff, E.</td>
<td>1998b</td>
<td>Castle Rock Ridge</td>
<td>Not Evaluated</td>
<td>Large building reported to be the pharmacy related to Jesuit settlement in the area</td>
</tr>
<tr>
<td>P-43-1455</td>
<td>Historic</td>
<td>Historic structure with dam</td>
<td>Popetz, L, and H. Kehres</td>
<td>2001a</td>
<td>Castle Rock Ridge</td>
<td>Recommended not eligible for CRHR</td>
<td>San Jose Water Works constructed at Beardsley Intake</td>
</tr>
<tr>
<td>Lake Ranch Reservoir Study Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No sites recorded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Elsman Study Area</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-43-1827</td>
<td>Historic</td>
<td>Historic fence line</td>
<td>Dias, M.</td>
<td>2005b</td>
<td>Los Gatos</td>
<td>Not evaluated</td>
<td>Short linear segments of historic fence line</td>
</tr>
<tr>
<td>P-43-1830</td>
<td>Historic</td>
<td>Historic site with water tank and steel perch</td>
<td>Dias, M.</td>
<td>2005c</td>
<td>Los Gatos</td>
<td>Not evaluated</td>
<td>1,000-gallon water tank and steel perch</td>
</tr>
<tr>
<td>P-43-1831</td>
<td>Historic</td>
<td>Historic earthen dam</td>
<td>Dias, M.</td>
<td>2005d</td>
<td>Los Gatos</td>
<td>Not evaluated</td>
<td>Austrian Dam</td>
</tr>
</tbody>
</table>
### 3.0 Environmental Effects

<table>
<thead>
<tr>
<th>Site Designation</th>
<th>Period</th>
<th>Description</th>
<th>Author</th>
<th>Date</th>
<th>Topographic Map</th>
<th>NRHP/CRHR Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-43-1835</td>
<td>Historic</td>
<td>Historic site with trash scatters and possible trail/travel route</td>
<td>Dias, M.</td>
<td>2005e</td>
<td>Los Gatos</td>
<td>Not evaluated</td>
<td>Large scatter of historic-period artifacts, possibly associate with occupation of Austrian Gulch</td>
</tr>
<tr>
<td>P-43-1780</td>
<td>Historic</td>
<td>Historic structure and site with privies/dumps/gravestone</td>
<td>Dias, M.</td>
<td>2005f</td>
<td>Los Gatos</td>
<td>Not Evaluated</td>
<td>Southern Pacific Coastal Railway Grade-feature adjacent to railway</td>
</tr>
<tr>
<td>P-43-1829</td>
<td>Historic</td>
<td>Historic site with water conveyance system and dam</td>
<td>Dias, M.</td>
<td>2005g</td>
<td>Los Gatos</td>
<td>Not Evaluated</td>
<td>Ryland Diversion Dam</td>
</tr>
<tr>
<td>P-43-1834</td>
<td>Historic</td>
<td>Moody Intake</td>
<td>Dias, M.</td>
<td>2005h</td>
<td>Los Gatos</td>
<td>Not Evaluated</td>
<td>Historic intake no longer functioning.</td>
</tr>
</tbody>
</table>

**Upper Lexington Reservoir and Los Gatos Creek to Ostwald Intake**

<table>
<thead>
<tr>
<th>Site Designation</th>
<th>Period</th>
<th>Description</th>
<th>Author</th>
<th>Date</th>
<th>Topographic Map</th>
<th>NRHP/CRHR Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA-SCL-265, P-43-000265</td>
<td>Prehistoric</td>
<td>Prehistoric site with lithic scatter, bedrock milling feature, habitation debris</td>
<td>Aguilar, J., et al.</td>
<td>2010</td>
<td>Los Gatos</td>
<td>Not evaluated</td>
<td>Resource submerged under high water-last recording indicated 13 bedrock cupules on four outcrops</td>
</tr>
<tr>
<td>Site Designation</td>
<td>Period</td>
<td>Description</td>
<td>Author</td>
<td>Date</td>
<td>Topographic Map</td>
<td>NRHP/CRHR Status</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CA-SCL-602/H, P-43-000597</td>
<td>Prehistoric, historic</td>
<td>Building and site with standing structures and habitation debris; prehistoric component is midden area</td>
<td>Cartier, R., and G. A. Laffey</td>
<td>1986b</td>
<td>Los Gatos</td>
<td>Not Evaluated</td>
<td>Circa 1875 hours and possible prehistoric midden site.</td>
</tr>
<tr>
<td>CA-SCL-603, P-43-000598</td>
<td>Prehistoric</td>
<td>Prehistoric site with lithic scatter and bedrock milling feature</td>
<td>Cartier, R.</td>
<td>1986</td>
<td>Los Gatos</td>
<td>Recommended not eligible for NRHR (Garaventa et al, 1990)</td>
<td>Bedrock milling station site. Milling station has three cupules and reportedly moved to current location.</td>
</tr>
<tr>
<td>P-43-674</td>
<td>Historic</td>
<td>Historic building structure with ancillary building and New Deal Public Works Project</td>
<td>Thornton, M.</td>
<td>1994b</td>
<td>Los Gatos</td>
<td>Listed as 4CM on CHRSC; appears eligible through other evaluation</td>
<td>Alma Fire Station, building in 1935 and moved to present location in 1953. Formerly within Lexington Reservoir.</td>
</tr>
<tr>
<td>P-43-982</td>
<td>Historic</td>
<td>Historic building, single-family property</td>
<td>Laffey, G.A.</td>
<td>1995</td>
<td>Los Gatos</td>
<td>Recommended as having no significance.</td>
<td>Built in 1920s and known as Tripp residence part of dairy ranch complex.</td>
</tr>
</tbody>
</table>
### 3.0 Environmental Effects

<table>
<thead>
<tr>
<th>Site Designation</th>
<th>Period</th>
<th>Description</th>
<th>Author</th>
<th>Date</th>
<th>Topographic Map</th>
<th>NRHP/CRHR Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-43-1456</td>
<td>Historic</td>
<td>Historic structure with dam</td>
<td>Popetz, K., and H. Kehres</td>
<td>2001b</td>
<td>Los Gatos</td>
<td>Recommended not eligible for CRHR.</td>
<td>Lower Cavanee Intake constructed in 1893 but modified over time.</td>
</tr>
<tr>
<td>P-43-1457</td>
<td>Historic</td>
<td>Historic structure with dam</td>
<td>Popetz, K., and H. Kehres</td>
<td>2001c</td>
<td>Los Gatos</td>
<td>Recommended not eligible for CRHR.</td>
<td>Trout Gulch Intake constructed in 1890 but modified over time.</td>
</tr>
<tr>
<td>P-43-1524</td>
<td>Historic</td>
<td>Historic structure with dam</td>
<td>Brown, K., and L. Martin</td>
<td>2003</td>
<td>Los Gatos</td>
<td>Recommendation vague</td>
<td>Segment of South Pacific Coast Railroad grade, modified over time.</td>
</tr>
<tr>
<td>Lexington Dam</td>
<td>Historic</td>
<td>Listed in Directory of Properties in Historic Property Data file as ineligible for NRHP listing.</td>
<td>William Self Associates</td>
<td>2001</td>
<td>Los Gatos</td>
<td>Recommended not eligible for CRHR (Garaventa et al. 1990)</td>
<td>Constructed in 1952 as part of Santa Clara Valley Water Conservation District system. Entire system has been dedicated as a California Historic Civil Engineering Landmark.</td>
</tr>
</tbody>
</table>

**Source:** Horizon Water and Environment 2016
Lower Lexington Reservoir Study Area. As shown in Table 12, Cultural Resources Studies Conducted in Program Area, a total of 21 studies have been completed in the Lower Lexington Reservoir study area. Most of these studies were conducted at the north end and along the southern bank of Lexington Reservoir and were small-scale studies conducted on privately owned land. Several SJWC facilities were studied: Lenihan Dam, Montevina Road Filter Plant, and Trout Gulch Intake. The Lexington Reservoir Interchange and Frontage Road Project encompassed a large area on the west bank of Lexington Reservoir, from approximately Aldercroft Creek at the southern edge northerly to a point below Lenihan Dam. The cultural resources study for this project inspected areas adjacent to State Route 17. The architectural study encompassed a wider area that included Lexington Reservoir and the Montevina Road Filter Plant. On the east bank of Lexington Reservoir, the Lower Cavanee Intake has been studied (Horizon Water and Environment 2015).

A total of eight resources (Table 13, Previously Documented Resources in Program Area) have been documented in the Lower Lexington Reservoir study area. One of the resources is a prehistoric bedrock milling station (P-43-00598). Reportedly, the bedrock outcrop was moved to the SJWC yard for landscaping purposes. SJWC plans to return this bedrock feature back to its original location in 2017. Another prehistoric site, P-43-00597, contains both prehistoric and historic components. The prehistoric component is a possible midden area, while the historic component is a farmstead dating to 1875 (Horizon Water and Environment 2015).

Three of the resources recorded are associated with facilities maintained by SJWC: the Lower Cavanee Intake, Trout Gulch Intake, and Lexington Dam. The Lower Cavanee and Trout Gulch Intakes have been recommended as not eligible for the California Register of Historical Resources. Lexington Dam is an element of the Santa Clara County Water Conservation District, which includes a systemic designation as a California Historic Civil Engineering Landmark. The dam has been recommended as not eligible for the California Register of Historical Resources (Horizon Water and Environment 2015). A spur of the South Pacific Coast Railway (P-43-001524) has been recorded below and north of Lexington Reservoir. The two remaining resources that were previously documented are the Alma Fire Station and Tripp Dairy, both on the west side of Lexington Reservoir.

Conclusions of Records Search Results. In general, the area west of Los Gatos Creek comprises the areas of greatest known cultural resource density in the locales studied. Specifically, those portions investigated as part of the record search that are located west of Lexington Dam along State Route 17 and along the west bank of upper Los Gatos Creek include a higher proportion of known, previously documented cultural resources than the eastern side of Los Gatos Creek. This may be attributable to the greater prevalence of development-driven cultural resources studies on the west side of Los Gatos Creek.
Most of the cultural resources within the proposed program study areas consist of historic-period resources related to post-1850s development and occupation within the drainage. A total of 17 historic-period resources have been previously documented within the study areas. Seven of these resources are associated with SJWC water storage and management infrastructure. The company was formed in 1866, and several of the features date to the early 1900s. As such, one would expect more elements of SJWC water storage and management infrastructure within the watershed to eventually be recorded.

Within the watershed, several former towns were located in the proposed program area. This included the towns and communities of Alma, Aldercroft, Lexington, Holy City, Austrian Gulch, and Patchen. The development of the South Pacific Coast Railway, constructed in the 1870s, is a major resource that induced recreation development, logging, and settlement growth in the watershed. Places such as Wrights Station along Los Gatos Creek became vacation destination points. The resources identified during this study reflect growth and development in the watershed since the 1850s for ranching, logging, agriculture, recreation, and water storage and conveyance.

Given what is known about the environmental and cultural history of the watershed and what is known about cultural resource densities and distributions within the watershed, general predictions may be offered regarding resources that may be encountered during future field inventory:

- historic-period debris scatters might be anticipated along roads or in association with the railroad alignments;
- historic-period roads would be expected near homesteads, cultivated lands, or existing infrastructure; and
- historic-period buildings, structures, or objects may be encountered in association with early homesteads, infrastructure, or transportation routes.

Five structures were noted within the proposed program study areas: remnants of structures associated with Alma College, the remains of former Iona School, two historic-period homesteads, and the Alma Fire Station. One historic-period debris scatter was noted, possibly in association with Austrian Gulch. It is anticipated that the remains of these structures and other, as-yet-unidentified historic-period sites may be discovered during field inventory associated with the Maintenance Program (Pacific Legacy 2014).

**Native American Consultation**

A search of the Sacred Lands Inventory maintained by the Native American Heritage Commission (NAHC) was requested on July 10, 2014 (Pacific Legacy 2014). A response from
the NAHC was received on July 23, 2014, stating that no Native American cultural resources were identified in the immediate program area. A list was provided of 10 Native American individuals/organizations that may have knowledge of unreported resources or areas of concern. The following individuals/organizations were contacted by certified letter on August 13, 2014:

- Rosemary Cambra, Chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area;
- Katherine Erolida Perez, North Valley Yokuts Tribe;
- Michelle Zimmer, Amah Mutsun Tribal Band of Mission San Juan Bautista;
- Andrew Galvan, The Ohlone Indian Tribe;
- Ramona Garibay, Representative, Trina Marine Ruano Family;
- Edward Ketchum, Amah Mutsun Tribal Band;
- Jakki Kehl, Ohlone/Constanoan Tribe;
- Valentin Lopez, Chairperson, Amah Mutsun Tribal Band;
- Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan;
- Linda Yamane, Ohlone/Constanoan Tribe; and
- Irene Zweirlein, Chairperson, Amah Mutsun Tribal Band.

Replies were received from Ann Marie Sayers and Edward Ketchum. Ms. Sayers requested information regarding the number of prehistoric sites in the study area. She noted that there are sensitive areas within the watershed and requested to be informed if Pacific Legacy conducts field visits or has results to report. Mr. Ketchum suggested that Pacific Legacy contact the Muwekma Band for information. He had no specific information but suggested that petroglyph sites would be located within the watershed, along with shaman preparation sites.

**Regulatory Setting**

**Federal**

**National Historic Preservation Act Section 106.** The National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider the preservation of historic and prehistoric resources. The NHPA authorizes the Secretary of the Interior to expand and maintain an NRHP, and it has established an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the NHPA requires federal agencies to
Environmental Effects

take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking before licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

Federal review of projects is normally referred to as the Section 106 process. The Section 106 review normally involves a four-step procedure described in detail in the implementing regulations (36 CFR Part 800):

- Identify and evaluate historic properties in consultation with the State Historic Preservation Officer (SHPO) and interested parties;
- Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP;
- Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the ACHP; and
- Proceed with the project according to the conditions of the agreement.

Advisory Council on Historic Preservation Regulations, Protection of Historic Properties. The ACHP’s Regulations, Protection of Historic Properties (36 CFR Part 800) establish procedures for compliance with Section 106. These regulations define the criteria of adverse effect, define the role of the SHPO in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Prehistoric and historic resources deemed significant (i.e., eligible for listing in the NRHP under 36 CFR Part 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the SHPO for review and comment before the project’s approval.

Archaeology and Historic Preservation: Secretary of the Interior’s Standards and Guidelines. Archaeology and Historic Preservation: Secretary of the Interior’s Standards and Guidelines (190 FR 44716–44742) offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these guidelines are the “Standards for Archaeological Documentation” and “Professional Qualifications Standards for Archaeology.”

Section 106 prescribes specific criteria for determining whether a project would have an adverse effect on a historic property, if any such properties exist in the area of potential effects as defined by the agency (36 CFR § 800.5). An impact is considered adverse when prehistoric or historic archaeological sites, structures, districts, or objects listed in or eligible for listing in the NRHP are subjected to the following effects:
Physical destruction of or damage to all or part of the property;

Alteration of a property;

Removal of the property from its historic location;

Change of the character of the property’s use or of physical features within the property’s setting that contribute to its historic significance;

Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property’s significant historic features;

Neglect of a property that causes its deterioration; and

Transfer, lease, or sale of the property.

Because SJWC would need to obtain a permit from USACE under CWA Section 404, the proposed program constitutes a federal undertaking that would require compliance with Section 106 of the NHPA, and federal significance criteria apply. For federally permitted or funded projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. NRHP criteria for eligibility are defined as follows:

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

- Are associated with events that have made a contribution to the broad pattern of our history;

- Are associated with the lives of people significant in our past;

- Embody the distinct characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- Have yielded, or are likely to yield, information important in prehistory or history.

State

California implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a
3.0 **Environmental Effects**

statewide level. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the state’s jurisdictions as well as serving as a consulting party in the federal process described above.

**California Register of Historical Resources.** The CRHR is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (California Public Resources Code [PRC] § 5024.1[a]).

The eligibility criteria for inclusion on the CRHR are based on NRHP criteria (PRC § 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historical-period property must be significant at the local, state, and/or federal level under one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- It is associated with the lives of persons important in our past;
- It 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
- It has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the CRHR, it must also retain enough of its character or appearance and integrity to be recognizable as a historical resource and to convey the reason for its significance. A historic resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR.

The CRHR consists of resources that are listed automatically, as well as those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined to be eligible for the NRHP;
- California Historical Landmarks from No. 770 onward; and
California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR are:

- Historical resources with a significance rating of Category 3 through 5 (i.e., properties identified as eligible for listing in the NRHP, the CRHR, and/or a register maintained by a local jurisdiction);
- Individual historical resources;
- Historical resources contributing to historic districts; or
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.

**California Environmental Quality Act.** CEQA, as codified at PRC Sections 21000 et seq., requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. As defined in Section 21083.2, a “unique” archaeological resource is 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:

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

In addition, the State CEQA Guidelines define historical resources as: (1) a resource in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that 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, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.
If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the State CEQA Guidelines criteria for a historical resource, then the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (State CEQA Guidelines Section 15064[c][4]).

In accordance with CEQA, the proposed program would be considered to have a significant impact on the environment if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in PRC Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource under PRC Section 15064.5;
- 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.

**California Public Resources Code and California Administrative Code.** Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. Impacts include intentional disturbance, mutilation, or removal of interred human remains.

**Local**

**Santa Clara County General Plan.** According to the *Santa Clara County General Plan* (1994), heritage resources are those particular types of resources, both natural and human-made, which, due to their vulnerability or irreplaceable nature, deserve special protection if they are to be preserved for current and future generations.

The types of resources addressed as heritage resources include:

- Historical sites, structures, and areas;
- Archeological and paleontological sites and artifacts; and
- Historical and specimen trees.
General Plan policies that are relevant to the proposed program 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.

**Standards of Significance**

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource under State CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.
3.0 Environmental Effects

Impact Analysis

Methodology

CEQA requires project proponents to assess a project’s potential effects on historical resources (i.e., those that are listed or eligible for listing in the CRHR or in a local register or survey that meets the requirements of PRC Sections 5020.1[k] and 5024.1[g]). This entails the following steps.

- Identify potential historical resources;
- Evaluate the significance of identified historical resources; and
- Evaluate the anticipated effects of a project on all significant historical resources.

Under CEQA, only effects on significant resources are considered potentially significant, so only these impacts need be analyzed in detail. Some of the cultural resources found in the program area may meet the significance criteria of the CRHR. In addition, there is always the potential for discovery of subsurface archaeological deposits.

Routine activities undertaken as part of the proposed program include varying degrees of ground-disturbing activities that may affect cultural resources. Ground-disturbing and construction activities could adversely affect previously documented or unknown, potentially important cultural resources, resources determined to be historic properties, or paleontological resources. Certain activities proposed by SJWC do not have the potential to disturb native soils and therefore do not have the potential to affect historic properties. As such, program activities have been divided into two categories: (1) activities that would disturb native soils by excavation, construction, and sediment disposal, and (2) activities that would not disturb native soils.

The first category applies to maintenance activities that require the disturbance of native soils, including sediment removal, culvert replacement and new culvert construction, access road maintenance where grading is involved, and hazard tree removal. Where cultural resources are present in native soils, disturbance of these native soils has the potential to affect such resources.

The second category consists of non-ground-disturbing maintenance activities that primarily involve the use of handheld equipment. Non-ground-disturbing maintenance activities include minor sediment relocation by hand at Hendry Intake, Lower Cavanee Intake, Trout Creek, and Beardsley Intake facilities; flashboards maintenance at Ostwald Intake; maintenance of the reservoir outlet gates at Lake Ranch Reservoir; dam facility hardware maintenance at Lake Elsman; vegetation pruning with hand tools; downed tree removal; herbicide application; and
burrowing animal management at dam faces. These non-ground-disturbing activities would not disturb native soils and, therefore, would not affect cultural resources. These activities do not require additional assessment, and no further discussion is provided.

Criteria for Determining Significance

Defining Significant Cultural Resources. A resource is considered a historical resource if it qualifies as eligible for listing in the CRHR, included in a local register of historical resources, determined by the lead agency to be historically significant, or meets the criteria found in PRC Section 5024.1(g).

Properties that are eligible for listing in the CRHR must meet one or more of the following criteria:

- Criterion 1: Association with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Criterion 2: Association with the lives of persons important in our past;
- Criterion 3: Embodying 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
- Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history.

The CRHR interprets the integrity of a cultural resource as its physical authenticity. A historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity.

It is possible that a cultural resource may not retain sufficient integrity to be listed in the NRHP, yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR. Most significant Native American prehistoric sites are eligible because of their age, scientific potential, and/or burial remains. A historical resource also may be one that is included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g). Objects, buildings, structures, sites, areas, places, records, or manuscripts can also be considered historical resources if the lead agency determines that the resource is historically significant. The lead agency is tasked with providing substantial evidence for this determination, generally following the criteria for listing in the CRHR.
A resource can also be considered a historical resource if it is identified in a historical resource survey and can be listed in the CRHR if it meets four criteria:

1. the survey has been or will be included in the California Historic Resources Inventory;
2. the report and documentation are prepared by accepted standards;
3. the resource is evaluated and determined to have a significance rating of 1 to 5 on DPR Form 523; and
4. the survey is updated, if more than 5 years old, to determine the present condition of the resource (PRC Section 5024.1[g]).

Environmental Impacts

**IMPACT: THE PROGRAM MAY RESULT IN DISTURBANCE TO PREVIOUSLY UNDISCOVERED ARCHAEOLOGICAL OR HISTORIC RESOURCES (LESS THAN SIGNIFICANT)**

Based on previous survey results in the program area, there is the potential for encountering prehistoric cultural resources along drainages or near natural seeps or springs in the flatter areas near creeks at the confluences of creeks in the program area. In addition, given the environmental and cultural history of the watershed lands since the 1850s, historic-period debris scatters may be encountered along roads or in association with the railroad alignments, historic-period buildings, structures, or objects associated with early homesteads and infrastructure.

Ground-disturbing maintenance activities conducted under the proposed program would have the potential to disturb previously undiscovered cultural resources within the program area. As described in the environmental setting, some SJWC facilities have already been subject to cultural resources inventories, including the Lower Cavanee, Beardsley, and Trout Creek Intake Facilities and the Austrian Dam at Lake Elsman. The survey results for the intake facilities found no significant cultural resources present, and none were eligible for the CRHR. Although these three intake facilities and Austrian Dam have been inventoried or evaluated for CRHR eligibility, other SJWC-maintained facilities, such as impoundments, access roads, and culvert replacement and installation sites, have not been surveyed. The discussion below addresses maintenance activities that could result in disturbance to known and previously undiscovered archaeological or historic resources.

Sediment removal upstream of the Hooker Intake Facility would involve ground disturbance in Hooker Gulch Creek, which could result in a substantial adverse change in the significance of an unknown cultural resource. Culvert replacement and construction of new culverts would require
excavation and grading, which would also have the potential to disturb known cultural resources or previously undiscovered, important archaeological or historic resources. Culvert maintenance work would affect present-day roadways that could be determined to be historic-period roadways (e.g., stagecoach or early toll roads). It is also not uncommon for historic-period roadways to have rock wall shoulders, abutments, drainage ditches, and/or culverts. Such activities could result in alteration of the elements of these resources that make them eligible for the CRHR, or could result in a substantial change in the significance of a historical resource.

Therefore, proposed maintenance activities could unearth previously unknown cultural resources that are potentially eligible for inclusion in the CRHR or substantially change the significance of a historical resource as a result of sediment removal and culvert maintenance activities. As described in the proposed program's maintenance manual (Appendix A), SJWC will conduct an annual maintenance evaluation at each facility to evaluate and prioritize the maintenance needs in the proposed program area. However, to ensure potential impacts are reduced to a less-than-significant level, additional mitigation is required.

As described in BMP CUL-1, in the Los Gatos Creek Watershed Maintenance Program Manual (Appendix A) during the early phases of annual work plan development, for all locations where ground-disturbing activities are proposed, SJWC will review maps and data in its files to determine if the selected sites have been subject to cultural resource study. If identified maintenance sites have not been subject to cultural resource study, BMPs CUL-2 and CUL-4 would be implemented, which include a field inventory and review of activities that would involve disturbance/excavation of soil. Upon completion of BMPs CUL-2 and CUL-4, and in the event that the maintenance sites have identified cultural resources or historical resources, BMPs CUL-3, CUL-5, and CUL-6 would also be implemented. BMP CUL-3 requires that SJWC retain a qualified archaeologist to be present onsite during any ground-disturbing activities; BMP CUL-5 requires that all SJWC maintenance personnel participate in an educational training session prior to conducting any ground-disturbing maintenance activities. BMP CUL-6 includes various conditions that shall be implemented by SJWC in the event that cultural remains or historic resources are encountered during construction. By implementing these BMPs, the potential impact to known and unknown archaeological or historic resources would be less than significant.

**IMPACT: THE PROGRAM MAY RESULT IN ACCIDENTAL DISCOVERY OF HUMAN REMAINS (LESS THAN SIGNIFICANT)**

Ground-disturbing maintenance activities conducted under the proposed program would have the potential to unearth human remains, including Native American remains. Similar to the discussion for potential impacts to previously unknown archaeological or historic resources, sediment removal, culvert replacement, and new culvert installation work would involve
3.0 Environmental Effects

ground-disturbing activities that could affect previously undiscovered Native American remains. Native Americans consider the remains of their ancestors and the offerings buried with them to be sacred and wish to prevent the disturbance of interments. Any non-Native American remains would need to be considered as well. Implementation of BMP CUL-6 to appropriately respond to the discovery of human remains would ensure that human remains are dealt with in a respectful and appropriate manner. As a result, this impact would be less than significant.

**IMPACT: THE PROGRAM MAY RESULT IN DISCOVERY OF PREVIOUSLY UNDISCOVERED SENSITIVE PALEONTOLOGICAL RESOURCES (LESS THAN SIGNIFICANT)**

The proposed program could affect known or unknown paleontological resources during ground-disturbing activities. Most of the maintenance activities proposed at or near creeks would be conducted at intake facilities or areas that have been modified from their natural condition, and therefore do not contain geologic material with a high likelihood of containing paleontological resources. Activities that would result in excavation of native soils, specifically culvert replacement and new culvert construction, could uncover previously undiscovered paleontological resources. If treatment measures are not employed, significant impacts on sensitive paleontological resource could result from the proposed program. Therefore, implementation of BMP CUL-6 would ensure that work is stopped and treatment measures are implemented in the event of such a discovery. With implementation of BMP CUL-6, impacts on paleontological resources would be less than significant.

3.5 Geology and Soils

This section discusses existing conditions and evaluates the proposed program’s effects related to geology, soils, and seismicity. It describes federal, state, and local regulations related to geology, soils, and seismicity. This evaluation is based on a review of published geologic maps, soil survey information (U.S. Department of Agriculture, Natural Resources Conservation Service 2016), and earthquake hazard mapping published by the State of California (Association of Bay Area Governments 2016). Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning geology or soils’ impacts were received during the NOP process.
Environmental Setting

Regional Geology

The regional structure and geology of the upper Los Gatos Creek Watershed and Santa Cruz Mountains area are largely defined by the San Andreas Fault Zone. The watershed upstream of Lake Elsman mostly comprises sedimentary rocks of the Eocene Epoch, but there are also several areas of Quaternary hillslope deposits and alluvium. Moving downstream, the geology changes to include plutonic, volcanic, and marine sedimentary rocks of the Mesozoic Era, Great Valley Complex, and younger Tertiary (Eocene) sedimentary rocks. Farther downstream, the subwatershed areas draining to Los Gatos Creek and Lexington Reservoir comprise mostly Franciscan Complex rocks (either coherent or mélange) associated with the region's active tectonic setting, or Cretaceous sedimentary rocks of the Franciscan Complex with alluvial-derived sediments. There are also patches of Great Valley sequence volcanics, as well as Quaternary hillslope and landslide deposits throughout the upper Los Gatos Creek Watershed. The Beardsley Creek subwatershed is physically aligned with the San Andreas Fault Zone. This explains the northwest-southeast linear alignment of the canyon and stream course. The San Andreas Fault Zone creates an abrupt fault contact between rock materials of different types on either side of the fault, which can have implications for groundwater movement and streamflow (Horizon Water and Environment 2015. Geology of the upper Los Gatos Creek Watershed is shown in Figure 18, Upper Los Gatos Creek Watershed Geology.

Soils

According to NRCS soil mapping, six of the designated soil associations in Santa Clara County are present in the watershed, as displayed in Figure 19, Upper Los Gatos Creek Watershed Soils. The Montara association (15 to 50 percent slopes) and Maymen-Los Gatos-Gaviota association (30 to 75 percent slopes, severely eroded) are the two major soil associations found in the watershed; they comprise upland soils developed on sedimentary, basic igneous, and serpentine rock. Other soil types are the Sunnyvale-Castro-Clear Lake association, which consists of deep, level, somewhat poorly to poorly drained soils; the Zamora-Pleasanton association and Arbuckle-Pleasanton association, which include moderately well to somewhat excessively drained, medium- to fine-textured soils of the alluvial plains and fans; and the Keefers-Hillgate association (2 to 9 percent slopes), which is dominated by soils with slowly to very slowly permeable subsoils of the older alluvial fans and terraces. Generally, soils in the watershed are poorly draining, hydrographic Type D soils with pockets of moderately infiltrating Type B soils, such as in the Cavanee Creek and Beardsley Creek subwatersheds (NRCS 2016).
3.0 Environmental Effects

Seismicity

The entire San Francisco Bay area contains active faults. The probability of one or more large earthquakes (on the Richter magnitude scale at 6.7 or greater) in the Bay Area resulting in widespread damage between 2000 and 2030 is estimated at 70 percent, within a 10 percent margin of error (Horizon Water and Environment 2015).

Several major faults are near the program area: the San Andreas, Monte Vista Thrust, San Gregorio, Southern Hayward, and Calaveras faults. The program area is within a designated Alquist-Priolo Fault Zone, stretching approximately from Los Gatos Creek to the western boundary of the program area (California Geological Survey 1991). Table 14, Faults in Vicinity of Program Area, shows the distance, maximum credible earthquake, and shaking severity that would be associated with such an event within the program area. The epicenter of the magnitude 6.9 Loma Prieta Earthquake in 1989 was located near Loma Prieta Mountain, which is less than 5 miles west of Austrian Dam (Horizon Water and Environment 2015).

<table>
<thead>
<tr>
<th>Fault</th>
<th>Distance from Program Area</th>
<th>Estimated Magnitude</th>
<th>Shaking Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern San Andreas</td>
<td>Within Program Area</td>
<td>7.9</td>
<td>IX – Violent</td>
</tr>
<tr>
<td>Monte Vista Thrust</td>
<td>3.5 miles northeast</td>
<td>6.6</td>
<td>VII - Strong</td>
</tr>
<tr>
<td>San Gregorio</td>
<td>13 miles west</td>
<td>7.5</td>
<td>VI – Moderate</td>
</tr>
<tr>
<td>Southern Hayward</td>
<td>13 miles east</td>
<td>6.8</td>
<td>VI – Moderate to V – Light</td>
</tr>
<tr>
<td>Southern/Central Calaveras</td>
<td>15 miles east</td>
<td>7.0</td>
<td>VI – Moderate to V – Light</td>
</tr>
</tbody>
</table>

Source: ABAG 2016

Note: Shaking severity values are based on the Modified Mercalli Intensity Scale (MMI). The MMI, the current standard used throughout the United States to evaluate the effect of an earthquake, is an arbitrary ranking of perceived intensity based on observed effects. Less intense earthquakes are typically rated by individual accounts, whereas higher intensity events are rated based on observed structural damage.

Liquefaction. Soil liquefaction is a phenomenon that occurs when saturated sandy or silty soils lose strength during cyclic loading, such as caused by earthquakes. During the loss of strength, the soil acquires mobility sufficient to permit both horizontal and vertical movements, essentially behaving like a liquid. The factors known to influence liquefaction potential are soil type and depth, grain size, density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking. California Geological Survey mapping indicates that most of the
Figure 4.6-1
Upper Los Gatos Creek Watershed
Geology


Geology
- Artificial Fill, Quaternary
- Franciscan Complex, Tertiary
- Franciscan Complex, Cretaceous
- Franciscan Complex, Jurassic
- Great Valley Complex, Cretaceous
- Great Valley Complex, Jurassic
- Metamorphic rocks, Jurassic
- Alluvium, Quaternary
- Sedimentary Rock, Tertiary
- Volcanic Rock, Tertiary
- Seismic Faults

Legend:
- Upper Los Gatos Creek Watershed
- Drainages and Tributaries
- Intake
- Impoundment
- Primary Roads
- Culvert
- Secondary Roads
- Water Treatment Plant

Source: Horizon Water and Environment 2016
Figure 18
Upper Los Gatos Creek Watershed Geology
Los Gatos Creek Watershed Maintenance Program EIR
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Figure 4.6-2
Upper Los Gatos Creek Watershed

Soils

Soil Type
- Aptos loam
- Ben Lomond-Casrock complex
- Ben Lomond gravelly sandy loam
- Casrock-Skyridge-Rock outcrop complex
- Elsand-Maymen-Sanikara
- Elsand-Maymen
- Footpath-Mouser complex
- Katykat-Mouser-Sanikara complex
- Katykat-Sanikara complex
- Lompico-Felton complex
- Madonna loam
- Maymen-Katykat complex
- Maymen gravelly sandy clay loam
- Maymen stony loam
- Mouser-Katykat-Sanikara complex
- Pits, mine
- Sanikara-Mouser-Rock outcrop complex
- Sanikara-Rock Outcrop complex
- Santerhill-Xerolls-Mouser complex
- Large dams

Source: Natural Resources Conservation Service SSURGO Soils data

Figure 19
Upper Los Gatos Creek Watershed Soils
Los Gatos Creek Watershed Maintenance Program EIR

Source: Horizon Water and Environment 2016
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Los Gatos Creek Watershed is not located within an area prone to earthquake-induced liquefaction (CGS 2002). Liquefaction effects in the program area are primarily considered very low due to predominantly loamy soils and limited development throughout the proposed program area. Isolated areas susceptible to earthquake-induced liquefaction in the proposed program area are the western side of the Lexington Reservoir; the Beardsley Creek/Lexington Reservoir confluence; the confluence of Hooker Gulch and Los Gatos Creek; the Los Gatos Creek canyon bottom; and the Lake Elsman Dam.

**Landslides.** In steeply sloped areas, rock slope failure or landslides may occur during substantial seismic events. Saturated soils and precipitation events increase the likelihood of a landslide being triggered. Earthquake-induced landslides can result in substantial property damage, injury, and loss of life. USGS mapping for the proposed program area lacks information on landslide probability or hazard, and instead identifies “Zones of Required Investigation” for landslide hazard areas where site-specific geotechnical studies are required for new construction. Zones of Required Investigation are based on historically mapped landslides and topography.

Nearly all of the program area is designated Zones of Required Investigation (CGS 1991, 2002). West of Los Gatos Creek, the watershed is labeled as “most susceptible to landslides” or “mostly landslides.” This includes the subwatersheds west of the Lexington Reservoir as well. East of the Lexington Reservoir, the Cavanee Creek subwatershed is also identified as “mostly landslides.” The eastern side of program area has a much lower susceptibility for landslides. Few, if any, large landslides have been mapped in these areas, but small, localized landslides may still occur.

**Regulatory Setting**

**Federal**

**Uniform Building Code.** The 1997 Uniform Building Code (UBC) was developed by the International Conference of Building Officials and is used in most states, including California, and local jurisdictions to set basic standards for acceptable design of structures and facilities. The UBC provides information on criteria for seismic design, construction, and load-bearing capacity associated with various buildings and other structures and features. Additionally, the UBC identifies design and construction requirements to address and mitigate potential geologic hazards. New construction generally must meet the requirements of the most recent version of the UBC.

**State**

**Alquist-Priolo Earthquake Fault Zoning Act.** The Alquist-Priolo Earthquake Fault Zoning Act (PRC § 2621 *et seq.*) was passed to reduce the risk to life and property from surface faulting in...
California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy directly on or across the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as “active,” and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are “sufficiently active” and “well defined.” Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

**Seismic Hazards Mapping Act.** The Seismic Hazards Mapping Act of 1990 (PRC §§ 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, such as strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the State of California is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within a seismic hazard zone until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

**California Building Standards Code.** Title 24 of the California Building Standards Codes (specifically Title 24 CCR, Part 2) specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. This code specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California. The seismic building requirements under the California Building Standards Codes are more stringent than those of the federal UBC.

**Local**

**Santa Clara County General Plan.** The SCC General Plan Health and Safety Element, Natural Hazards section, contains policies relevant to geology and soils (SCC 1994). Natural hazards include landslides, expansive clays, highly organic soils or saturated soils, ground shaking, ground failure, ground displacement along faults, water movement due to earthquakes, and inundation due to dam failure. The main objective of the Natural Hazards section is to protect life and property through establishment of building codes for structures, flood control projects, and emergency response capability of public safety agencies.
Santa Clara County Grading Ordinance. The SCC Grading Ordinance is contained in Section C, Chapter III of Division C12-400 of the County Ordinance Code. The Grading Ordinance establishes minimum requirements for grading and drainage alteration operations. The purpose of this ordinance is to protect surface water quality and neighboring properties and to prevent soil erosion from improper grading and drainage alteration work. A grading permit must be obtained from the County for any activity involving cuts or fills greater than 5 feet in vertical depth, a total volume of cut or fill material that exceeds 150 cubic yards, or grading activities that may affect a watercourse. All grading approvals are subject to the requirements of CEQA. Before issuance of a grading permit, the County also requires submittal of preliminary grading plans, a geologic report, compliance with the requirements of any federal and state agencies, and completion of other environmental forms.

Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the program would have a significant impact related to geology, soils, and seismicity 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 on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42);
    - 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 an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
  - Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994) creating substantial risks to life or property; and
  - 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.
Impact Analysis

Methodology

Impacts related to geology, soils, seismicity, and associated hazards were evaluated based on professional standards and review of soils and geologic information for the program area. The impact analysis assumes that the existing risks from seismic hazards, landslides, expansive soils, or other geologic hazards to existing facilities within the program area are part of the baseline condition and would not affect the program. Remediation of existing facilities from such geologic hazards would constitute capital improvements and is outside of the scope of the maintenance program. This analysis does consider risks associated with installation, replacement, and repair of culverts.

Environmental Topics Eliminated from Further Analysis

Septic Tanks/Alternative Wastewater Disposal Systems. This evaluation dismisses the criterion related to soil capability for handling septic tanks or alternative waste water disposal systems because the proposed program would not affect or create additional demand for septic tanks or alternative wastewater disposal systems.

Environmental Impacts

IMPACT: THE PROGRAM AREA IS SUBJECT TO ADVERSE SEISMIC EVENTS (LESS THAN SIGNIFICANT)

Several active faults are located within or near the program area, and much of the program area is designated as a major earthquake-induced landslide area. In the event of a seismic occurrence, substantial ground shaking and localized weak areas may result in unanticipated slope failures within the program area, potentially impacting program facilities, such as road culverts.

However, the proposed maintenance program does not involve new construction or maintenance activities at facilities that are temporarily or permanently occupied by people. Thus, the potential for impacts on people or property due to earthquake-induced ground shaking, ground failure, or landslides is considered low.

Adherence to applicable California Building Standards Code and County requirements for the proposed program, particularly for the replacement, repair, or construction of new culverts, would ensure protection of public health and property. Therefore, the potential for the program area to experience adverse seismic events would be less than significant.
**IMPACT: THE PROGRAM AREA WOULD BE SUBJECT TO ADVERSE EFFECTS RESULTING FROM UNSTABLE GEOLOGIC UNITS (LESS THAN SIGNIFICANT)**

Proposed maintenance activities would be conducted in some areas that exhibit poor infiltration and low to moderate liquefaction potential. Maintenance activities are not anticipated around the lower shores of the Lexington Reservoir and creek confluence locations near the Lexington Reservoir, where liquefaction risks are greatest.

Maintenance road culverts would be repaired, replaced, or in some instances installed in areas where no culverts exist. These efforts, along with other maintenance activities such as vegetation management, would ultimately improve conveyance and control of stormwater runoff along maintenance roads and stabilize these areas from erosion. In some areas, erosion control treatments would also be installed at culvert outfalls. Implementation of the proposed program would protect the maintenance roads from becoming unstable and reduce the risk of landslides, erosion, subsidence, or road collapse due to misdirected runoff. Maintenance activities would also ensure continued operation of impoundments to prevent failure and subsequent damage.

Maintenance activities would be required to adhere to applicable building codes and County requirements to maintain public health and safety. Additionally, the implementation of BMP GEN-2 and BMP GEN-3 would apply, resulting in minimizing areas of disturbance and erosion and sediment control measures. BMP GEN-4, requiring dust management controls and BMP VEG-3, minimizing local erosion increases from in-channel vegetation removal would also be implemented, further reducing any potential impacts.

**3.6 GREENHOUSE GAS EMISSIONS**

This section describes the existing greenhouse gas (GHG) and climate change context in the study area, which includes the proposed program area and the state of California. This section then describes the regulatory setting and evaluates the proposed program's GHG emission impacts. The impact evaluation begins by describing the methodology used to evaluate significance and then presents the impact analysis. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015).

No comments concerning greenhouse gas emissions were received during the NOP process.
Global, National, State, and Local Environmental Setting

Climate Change Science

The international scientific community has concluded with a high degree of confidence that human activities are causing an accelerated warming of the atmosphere. The resulting change in climate has serious global implications and consequently, human activities that contribute to climate change may have a potentially significant effect on the environment. In recent years, concern about climate change and its potential impacts has risen dramatically. That concern has translated into a range of international treaties and national and regional agreements aimed at diminishing the rate at global warming is occurring. The federal government has begun to tackle concerns about climate change through a range of initiatives and regulatory actions. Many states and local agencies, private sector interests, and other public and private interests have also taken initiative to combat climate change. At the state level, California has taken a leadership role in tackling climate change, as evidenced by the programs outlined in the Regulatory Setting section below.

Causes and Effects of Climate Change

The greenhouse effect naturally regulates the Earth’s temperature. However, human activity has increased the intensity of the greenhouse effect by releasing increasing amounts of greenhouse gasses GHGs into the atmosphere. GHGs can remain in the atmosphere for decades. The GHG emissions that are already in the atmosphere will continue to cause climate change for years to come, just as the warming we are experiencing now is the result of emissions produced in the past. Climatic changes are happening now and are projected to increase in frequency and severity before the benefits of GHG emission reductions will be realized. Increased concentrations of GHGs in the atmosphere result in increased air, surface, and ocean temperatures. Many of the effects and impacts of climate change stem from resulting changes in temperature and meteorological responses to those changes.

Rising Temperatures. The Intergovernmental Panel on Climate Change, which includes more than 1,300 scientists from the United States and other countries, estimated that over the last century, global temperatures have increased by about 1.3 degrees Fahrenheit (°F). The Intergovernmental Panel on Climate Change forecasts indicate that global temperatures can be expected to continue to rise between 2.5°F (low emissions scenario) and 10°F (high emissions scenario) over the next century. According to the California Climate Adaptation Strategy, average state temperatures are currently predicted to increase 1.8 to 5.4°F by 2050 and 3.6 to 9°F by 2100. Some regional models show average temperatures in California increasing as much as 10.8°F. Achieving the low emission scenarios has become unlikely, while the probability of reaching the medium and high scenarios is believed to be more likely.
Refined modeling of conditions in the San Francisco Bay Area conducted by Scripps Institute for Oceanography for the California Energy Commission suggests that by the end of the twenty-first century, temperatures will average 3°F greater under one scenario and warming ranges from about 3.5°F to 11°F under a second scenario (Horizon Water and Environment 2015).

The Town of Los Gatos has already experienced a rise in average temperatures. Winters are now shorter and warmer than they were 30 years ago. According to Cal-Adapt, a climate change projection modeling tool developed by California Energy Commission, temperatures in the Town of Los Gatos have historically averaged about 57.1°F. Temperatures are projected to rise between 3.3 and 5.6°F by 2090, based on average low and high emissions scenarios.

While temperatures are relatively low in the Town of Los Gatos compared to other areas in the state, the Town of Los Gatos will still experience temperature changes related to climate change. The Town of Los Gatos has historically experienced four extreme heat days per year (over 90°F), but by 2014 this number doubled and in 2015, one of the hottest years on record, this number increased to 19 extreme heat days per year. The number of extreme heat days per year will continue to fluctuate but models project a significant rise in the number of days exceeding what is now considered extremely hot for the given area. By 2090 the Town of Los Gatos is expected to experience 12 to 53 extreme heat days per year utilizing a low carbon emissions scenario and utilizing a high carbon emissions scenario, the number of extreme heat days could increase to 51 to 89 per year.

As of 2015 heat waves (a minimum five-day period exceeding the extreme heat threshold) were a rare occurrence in the Town of Los Gatos; however, the frequency of these events is predicted to increase with as many as ten heat waves per year occurring by 2090 (utilizing a high carbon emissions scenario) (Horizon Water and Environment 2015).

Precipitation Levels. Precipitation levels are difficult to predict compared to other indicators of climate change. Annual rain and snowfall patterns vary widely from year to year, especially in California. Generally, higher temperatures increase evaporation and decrease snowfall, resulting in a drier climate. According to Cal-Adapt, the Mediterranean seasonal precipitation pattern that the Town of Los Gatos area experiences is expected to continue, with most precipitation falling during winter from North Pacific storms. One of the four climate models projects slightly wetter winters, and another projects slightly drier winters with a 10 to 20 percent decrease in total annual precipitation. However, even modest changes would have a significant effect because California ecosystems are conditioned to historical precipitation levels and water resources are nearly fully utilized.

Reduced Snowpack. The Sierra Nevada snowpack acts as a large natural reservoir that stores water during the winter and releases it into rivers and reservoirs in the spring and summer. It is
expected that there will be less snowfall in the Sierra Nevada and that the elevations at which snow falls will rise. Similarly, there will be less snowpack water storage to supply runoff water in the warmer months.

It has already been documented that the Sierra Nevada snow line is rising. More precipitation is expected to fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack. According to Cal-Adapt, the spring snowpack in the Sierra Nevada decreased by 10 percent in the last century and if heat-trapping emissions continue unabated (a high carbon emissions scenario) the spring snowpack may be reduced by as much as 70 to 90 percent by 2100.

The Sierra Nevada snowpack provides approximately 80 percent of California’s annual water supply. Although the water supplied to the Town is procured primarily from surface water sources, the rapid decrease in snowpack and spring melt poses a threat to groundwater resources. Declining snow pack affects both surface and groundwater resources (surface water recharges groundwater basins); therefore, surface water supplied under contract from agencies that divert surface water supply from the Sierra may be affected.

**More Frequent and Extreme Storm Events.** Extreme weather is expected to become more common throughout California. More extreme storm events are expected to increase water runoff to streams and rivers during the winter months, heightening flood risks. Warmer ocean surface temperatures have caused warmer and wetter conditions in the Sierra Nevada, increasing flood risk. Strong winter storms may produce atmospheric rivers that transport large amounts of water vapor from the Pacific Ocean to the California coast. They often last for days and drop heavy rain or snow for days. As the strength of these storms increase and transport increased amounts of precipitation, the risk of flooding is increased.

**Other Causes and Effects.** Other anticipated effects related to climate change include diminished air quality; impacts on surface water quality from seawater intrusion into the Sacramento Delta; general decline in agricultural production resulting from increased scarcity of water supply; increased vulnerability of natural areas and agricultural production from rising temperatures and increases in potential pest infestation; increased growth rates and expanded ranges of weeds, insect pests, and pathogens due to elevated temperatures; increased energy demand, especially during hot summer months; and economic impacts resulting from reduced winter recreation (California Environmental Protection Agency 2006).

**Climate Change as a Cumulative Effect**

Global climate change is, as the name implies, a global phenomenon. Greenhouse gas emissions released to the atmosphere from a variety of human activities and natural processes that occur across the globe are contributing to global warming. While the U.S. emits the largest per capita
volume of GHGs of any country in the world, other major countries contribute substantial volumes of emissions that continue to grow on a per capita basis. Because climate change is a global phenomenon, it is highly unlikely that any one development project located anywhere in the world would have a significant individual impact on climate change. It is the sum total of contributions of development around the world that contribute to the problem. Hence, global climate change is inherently a cumulative effect.

The volume of GHG emissions generated by an individual project can be quantified. However, the precise indirect effects of a single project are difficult if not impossible to identify due to the complexity of local, regional, and global atmospheric dynamics and to the broad scale at which global warming impacts such as sea level rise, increase in weather intensity, decrease in snowpack, etc. are known to occur.

**Greenhouse Gas Types**

GHGs are emitted by natural processes and human activities. The human-produced GHGs most responsible for global warming and their relative contribution to it are carbon dioxide, methane, nitrous oxide and chlorofluorocarbons. The contribution of these GHGs to the U.S. inventory of GHGs in 2013 is summarized in Table 15, GHG Types and Their Contribution to Global Warming.

<table>
<thead>
<tr>
<th>Greenhouse Gas</th>
<th>Percent of all GHG</th>
<th>Typical Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CO₂)</td>
<td>82 percent</td>
<td>Combustion of fuels, solid waste, wood</td>
</tr>
<tr>
<td>Methane (CH₄)</td>
<td>10 percent</td>
<td>Fuel production/combustion; livestock, decay of organic materials</td>
</tr>
<tr>
<td>Nitrous Oxide (N₂O)</td>
<td>5 percent</td>
<td>Combustion of fuels, solid waste; agricultural and industrial processes</td>
</tr>
<tr>
<td>Chlorofluorocarbons (CFCs)</td>
<td>3 percent</td>
<td>Industrial processes</td>
</tr>
</tbody>
</table>

*Source:* United States Environmental Protection Agency 2016

*Note:* Percentages reflect weighting for global warming potential.
Greenhouse Gas Global Warming Potentials

Each type of GHG has a different capacity to trap heat in the atmosphere and each type remains in the atmosphere for a particular length of time. The ability of a GHG to trap heat is measured by an index called the global warming potential expressed as carbon dioxide equivalent. Carbon dioxide is considered the baseline GHG in this index and has a global warming potential of one. Methane has a global warming potential of 21 times that of carbon dioxide and nitrous oxide has a global warming potential of 310 times that of CO₂. The families of chlorofluorocarbons, hydrofluorocarbons and perfluorocarbons have a substantially greater global warming potential than other GHGs, generally ranging from approximately 1,300 to over 10,000 times that of CO₂. See Table 16, GHG Global Warming Potentials, for reference on the global warming potential of various GHGs. While CO₂ represents the vast majority of the total volume of GHGs released into the atmosphere, the release of even small quantities of other types of GHGs can be significant for their contribution to climate change.

Table 16 GHG Global Warming Potentials

<table>
<thead>
<tr>
<th>GHG</th>
<th>Atmospheric Lifetime (Years)</th>
<th>Global Warming Potential (100-Year Time Horizon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide CO₂</td>
<td>50-200</td>
<td>1</td>
</tr>
<tr>
<td>Methane CH₄</td>
<td>12 (+/- 3)</td>
<td>21</td>
</tr>
<tr>
<td>Nitrous Oxide N₂O</td>
<td>120</td>
<td>310</td>
</tr>
<tr>
<td>HFC-23</td>
<td>264</td>
<td>11,700</td>
</tr>
<tr>
<td>HFC-134a</td>
<td>14.6</td>
<td>1,300</td>
</tr>
<tr>
<td>HFC-152a</td>
<td>1.5</td>
<td>140</td>
</tr>
<tr>
<td>PFC Tetrafluoromethane CF₄</td>
<td>50,000</td>
<td>6,500</td>
</tr>
<tr>
<td>PFC Hexafluoroethane C₂F₆</td>
<td>10,000</td>
<td>9,200</td>
</tr>
<tr>
<td>Sulfur Hexafluoride SF₆</td>
<td>3,200</td>
<td>23,900</td>
</tr>
</tbody>
</table>


The GHG volume produced by a particular source is often express in terms of carbon dioxide equivalent (CO₂e). Carbon dioxide equivalent describes how much global warming a given type of GHG will cause, with the global warming potential of CO₂ as the base reference. It is useful because it allows comparisons of the impact from many different GHGs, such as methane, perfluorocarbons or nitrous oxide. If a project is a source of several types of GHGs, their individual global warming potential can be standardized and expressed in terms of CO₂e.
Inventories of Greenhouse Gases

California GHG Emissions Inventory. California is a substantial contributor of global greenhouse gases. Based on CARB’s most recent state GHG inventory, a net of about 459.28 million tons of CO₂e were generated in 2013 (California Air Resources Board 2015). In 2013, about 37 percent of all GHG gases emitted in the state came from the transportation sector. Industrial uses and electric power generation (in state generation and out of state generation for imported electricity) were the second and third largest categories at about 23 percent and 20 percent, respectively. The commercial and residential use sectors combined to generate about 12 percent of the 2013 emissions, while the agricultural sector contributed about eight percent.

Bay Area and Santa Clara County GHG Emissions Inventory. The Bay Area Air Quality Management District (air district) has developed an emission inventory for the Bay Area that includes direct and indirect GHG emissions due to human activities. The emissions are estimated for industrial, commercial, transportation, residential, forestry, and agriculture activities. Both direct GHG emissions from locally generated electricity in the Bay Area and indirect emissions from out-of-region generated electricity for consumption in the region are reported.

The Bay Area’s GHG inventory as of the 1990 baseline year was 87.7 million metric tons CO₂e per year. In 2011, 86.6 million metric tons CO₂e were emitted by the San Francisco Bay Area, including 83.9 million metric tons CO₂e within the air district boundaries and 2.7 million metric tons CO₂e from imported electricity. The transportation sector comprises 39.7 percent of the total emissions. The industrial/commercial sector comprises 14.0 percent, residential fuels comprise 7.7 percent, and the remaining three percent is attributable to off-road equipment and agriculture. Under a business-as-usual scenario, 2020 GHG emissions are projected to increase to 88.2 million metric tons per year and to 94.8 million metric tons per year by year 2029.

For Santa Clara County, GHG emissions in 2011 were 16.0 million metric tons, of which 47 percent were from transportation and 26 percent were from commercial/industrial sectors (Bay Area Air Quality Management District 2010a).

Policy and Regulatory Setting

State and regional policies and regulations pertaining to climate change are summarized below. These provide context for how climate change is being addressed and to identify policy and regulatory actions whose implementation would lessen the contribution of the proposed project to climate change. The federal government is also taking significant regulatory steps toward addressing climate change. Generally, California policy and regulations are as or more comprehensive than federal actions; therefore, this regulatory section focuses on state activity. A number of policies and programs are included in the Santa Clara County General Plan are directly or indirectly targeted to reduce GHGs.
State

State policy and regulatory guidance has grown out of its effort to meet goals under Executive Order S-03-05 and the landmark Global Warming Solutions Act, which was passed in 2006. Numerous additional legislative acts and executive orders provide further GHG emissions reduction guidance and have reinforced that CEQA is the appropriate evaluation tool for assessing climate change impacts of new development.

Executive Order S-03-05. The Governor signed this executive order on June 1, 2005. It recognizes the anticipated effects of climate change, such as increased temperatures, reduced Sierra Nevada snowpack, worsened air quality, and sea level rise among others. The executive order includes GHG emission reduction targets for the purpose of combating these effects. GHG emissions are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

California Assembly Bill 32 (Global Warming Solutions Act). In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. 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 consistent with Executive Order S-03-05. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directs the California Air Resources Board (CARB) to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

AB 32 Scoping Plan. In December 2008, CARB adopted the Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) CO₂e, or approximately 22 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. CARB’s original 2020 projection was 596 MMT CO₂e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008. The Scoping Plan also includes CARB recommended GHG reductions for each emissions sector of the state GHG inventory. CARB estimates the largest reductions in GHG emissions would be by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (26.1 MMT CO₂e);
- the Low-Carbon Fuel Standard (LCFS) (15.0 MMT CO₂e);
- energy efficiency measures in buildings and appliances (11.9 MMT CO₂e); and
- renewable portfolio and electricity standards for electricity production (23.4 MMT CO₂e).
In 2011, CARB adopted a cap-and-trade regulation. The cap-and-trade program covers major sources of GHG emissions in the state such as refineries, power plants, industrial facilities, and transportation fuels. The cap-and-trade program includes an enforceable emissions cap that will decline over time. The state distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. Enforceable compliance obligations started in 2013. The program applies to facilities that comprise 85 percent of the states GHG emissions.

With regard to land use planning, the Scoping Plan expects that reductions of approximately 3.0 MMT CO₂e will be achieved through implementation of Senate Bill (SB) 375, which is discussed further below.

**Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document.** In 2011, CARB released this document to provide a more in-depth analysis of the five alternatives to the Scoping Plan that were originally included in that document. The supplemental analysis was conducted in response to litigation brought against CARB which challenged the adequacy of the alternatives analysis contained in the Scoping Plan. The supplemental analysis included an update of the business-as-usual GHG emissions projections that were contained in the Scoping Plan. The update is based on more recent economic conditions (including the economic downturn) and on reduction measures from the Scoping Plan that are already in place). The updated 2020 business-as-usual usual emissions forecast of 507 MMT CO₂e is lower than that contained in the 2008 Scoping Plan. With this forecast, only a 16 percent reduction below business-as-usual levels would be needed to return to 1990 levels (e.g. 427 MMT CO₂e) by 2020.

**2014 Scoping Plan Update.** In response to comments on the 2008 Scoping Plan, and AB 32's requirement to update the Scoping Plan every five years, CARB revised and reapproved the Scoping Plan, and prepared the First Update to the 2008 Scoping Plan in 2014 (2014 Scoping Plan). The 2014 Scoping Plan contains the main strategies California will implement to achieve a reduction of 80 MMT of CO₂e emissions, or approximately 16 percent, from the state’s projected 2020 emission level of 507 MMT of CO₂e under the business-as-usual scenario defined in the 2014 Scoping Plan. The 2014 Scoping Plan also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the state’s GHG inventory. Several strategies to reduce GHG emissions are included: the Low Carbon Fuels Standard, the Pavley Rule, the Advanced Clean Cars program, the Renewable Portfolio Standard, and the Sustainable Communities Strategy.

**Executive Order B-30-15.** Issued on April 29, 2015, this order advances the intent of Executive Order S-03-05 by establishing a California GHG reduction target of 40 percent below 1990 levels by 2030. The new emission reduction is intended to be an interim target that maintains a
reduction trajectory towards meeting the state’s goal of reducing emissions to 80 percent below 1990 levels by 2050 as identified in Executive Order S-03-05. This is in line with the scientifically established levels needed in the U.S. to limit global warming below two degrees Celsius - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

**California Senate Bill 375 (Sustainable Communities Strategy).** This 2008 bill sets forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHGs. The focus is to reduce miles traveled by passenger vehicles and light trucks. CARB is required to set GHG reduction targets for each metropolitan region for the years 2020 and 2035. Each of California’s metropolitan planning organizations then prepares a sustainable communities strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning. Once adopted by the metropolitan planning organizations, the sustainable communities strategy is to be incorporated into that region’s federally enforceable regional transportation plan. If a metropolitan planning organization is unable to meet the targets through the sustainable communities strategy, then an alternative planning strategy must be developed which demonstrates how targets could be achieved, even if meeting the targets is deemed to be infeasible.

In 2013, the San Francisco Bay Metropolitan Transportation Commission and the Association of Bay Area Governments jointly approved the *Plan Bay Area*, which includes the region’s Sustainable Communities Strategy and the 2040 Regional Transportation Plan. *Plan Bay Area* includes a target of reducing GHGs to seven percent below 2005 emissions levels by 2020, and 15 percent below 2005 levels by 2035. If the GHG reduction target is not met, transportation projects would not be eligible for state transportation funding programmed after January 1, 2012.

Local agencies that adopt land use, housing, and transportation policies that are consistent with and facilitate implementation of the related GHG reduction strategies in a sustainable communities strategy benefit through potential CEQA streamlining for qualifying projects proposed within their boundaries. Adoption of such policies can be a part of a general plan update or other similar policy adoption process. However a local agency’s general plan is not required to be consistent with a sustainable communities strategy.

**California Senate Bill 97.** As directed by SB 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010. CEQA allows lead agencies to analyze and mitigate the significant effects of GHG emissions, such as in a general plan, or as part of a separate plan (e.g., a climate action plan) to reduce GHG emissions.
Title 24 Standards/Energy Conservation. California’s Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 to reduce California’s energy consumption. The Scoping Plan requires improved building energy efficiency with each new update to the Title 24, which is updated every three years. The standards were most recently updated in January 2013 and went into effect in July 2014. Energy efficient buildings require less electricity, natural gas, and other fuels, the use of which creates GHG emissions. The 2013 update requires new buildings to become even more energy-efficient than ever before by increasing the efficiency of new construction by 20 percent for residential uses and 25 percent for non-residential uses, compared to the previous 2008 Title 24 standards.

California Green Building Standards Code. The Green Building Standards Code (CALGreen), which requires all new buildings in the state to be more energy efficient and environmentally responsible, took effect on January 1, 2011. These comprehensive regulations will achieve major reductions in greenhouse gas emissions, energy consumption and water use.

Renewable Energy Legislation/Orders. The California Renewable Portfolio Standard Program requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet a portion of their retail sales with renewable power. SB 1078, adopted in 2002, required 20 percent of retail sales to be met with renewable power by 2017. The requirement was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded in September 2010 by requiring all utilities to meet a 33 percent target by 2020. Governor Brown then signed AB 350, the Clean Energy and Pollution Reduction Act of 2015, which increases the RPS requirement to 50 percent of all retail sales by 2030.

California Senate Bill 350 (Clean Energy and Pollution Reduction Act of 2015). This bill has several aspects. Among its requirements are that the State Energy Resources Conservation and Development Commission must establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. Local publicly owned electric utilities are now required to establish annual targets for energy efficiency savings and demand reduction consistent with this goal. The bill also is intended achieve GHG reductions through increased investments in transportation electrification and notes that reducing GHGs to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 consistent with Executive Orders S-03-05 and S-30-15 will require widespread transportation electrification.

California Assembly Bill No. 1493 (“Pavley I Rule”). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks by improving fuel efficiency requirements. Pavley I requirements
apply to these vehicles in the model years 2009 to 2016. CARB has estimated the effectiveness of Pavley I standards on vehicle emission factors and estimates that these standards will reduce GHG emissions in the transportation sector by 20 percent in 2020 and 25 percent in 2035 above and beyond a scenario without these standards.

**Advanced Clean Cars.** In January 2012, CARB adopted an Advanced Clean Cars program aimed at reducing both smog-causing pollutants and GHG emissions for vehicles model years 2017-2025. Advanced clean cars refers to suite of regulations that combine what were previously independent regulations that targeted GHG emissions reductions and smog emissions from passenger cars and light-duty trucks. The regulations focus on substantially increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies.

The advanced clean cars program would provide major reductions in GHG emissions. By 2025, the program is projected to result in a 34 percent reduction in GHG emissions from new passenger cars and trucks above and beyond a scenario without the advanced clean cars program.

**Executive Order S-01-07 Low Carbon Fuel Standard.** Issued on January 18, 2007, this order mandates that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020 and that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established. The LCFS has been developed and implemented by CARB. CARB has incorporated the GHG emissions reductions accruing to the LCFS into the 2014 Scoping Plan as described above.

**Executive Order S-13-08.** This Executive Order enhances the state's management of climate impacts from sea level rise, increased temperatures, shifting precipitation and extreme weather events. In December 2009, the California Natural Resources Agency released the 2009 California Climate Adaptation Strategy Discussion Draft. The document provides interim guidance to state and local agencies on planning for the impacts and risks of climate change.

**California Air Pollution Control Officers Association.** The California Air Pollution Control Officers Association (CAPCOA) has prepared three guidance documents that together describe methods for quantifying GHG emissions and mitigation measures. The first document, *CEQA and Climate Change*, was released in 2008 and describes methods to estimate and mitigate GHG emissions from projects subject to CEQA. This CAPCOA report evaluates several GHG thresholds that could be used to evaluate the significance of a project’s GHG emissions. The second document, *Model Policies for Greenhouse Gases in General Plans*, provides background information, examples, references, links, and a systematic worksheet to help local governments in moving toward GHG considerations in general plan updates, or in the development of specific climate action plans. In cooperation with the Northeast States for Coordinated Air Use

**Bay Area Air Quality Management District Guidance**

The air district is charged with managing air quality within its boundaries. The air district implements policies and programs designed to ensure that air quality meets standards established under federal and state laws.

The air district is the only regional agency that to date has developed a plan for GHG emissions reductions that can be utilized by the city. The air district has published comprehensive guidance on evaluating, determining significance of, and mitigating GHG impacts of projects and plans. The guidance is contained in the 2010 CEQA Air Quality Guidelines (Bay Area Air Quality Management District 2010). The 2010 version of the CEQA Air Quality Guidelines was the first to include draft thresholds of significance for GHG emissions and screening criteria designed to assess project types and intensities whose GHG emissions would not exceed project-specific GHG standards of significance. Two thresholds of significance were developed, a volumetric threshold and a service population threshold. For plan projects such as general plans or specific plans, the service population threshold is most applicable as described in the Thresholds of Significance section below.

In response to a lawsuit regarding the air district’s CEQA process for adopting the GHG thresholds of significance contained in its 2010 CEQA Air Quality Guidelines, the 2012 version of the CEQA Air Quality Guidelines omitted reference to GHG thresholds of significance and to project screening criteria. However, many local agencies continue to utilize the thresholds given that the lawsuit does not challenge the substantial evidence used by the air district to establish the thresholds. The air district also adopted the 2010 Clean Air Plan, which although not directed specifically at GHG emissions reductions, includes air quality strategies that would have GHG emission reduction co-benefits.

The current air district thresholds are based on GHG reductions needed within the air district by 2020, including from new land development projects, for the district to contribute its fair share to the statewide reductions identified in AB 32 and the Scoping Plan. The thresholds were supported by substantial evidence. The threshold determination applies only to year 2020 reduction goals; it is not designed to enable the district to meet the reduction target of 40 percent below business-as-usual or 80 percent below business-as-usual as identified in Executive Order S-03-05 and Executive Order B-30-15, respectively. However, the air district adopted Resolution No. 23-11 in 2013, which sets forth the air district’s goal to develop a regional climate protection
strategy for the purpose of reducing GHG emissions within the air district to 80 percent below business-as-usual conditions by 2050. Towards this end, the air district has begun to implement a climate action work program. Short-term tasks in the work program include, but are not limited to: 1) setting a GHG reduction goal of 80 percent below business-as-usual by 2050 and developing interim targets and performance objectives, including per capita targets, to support this goal; 2) updating the Bay Area GHG inventory and conducting forecasts for 2020, an interim year, and 2050; 3) initiating GHG monitoring; and 4) preparing a regional climate action strategy. The air district is not expected to adopt new CEQA thresholds of significance for GHG impacts in the near term.

More about the role of the air district’s guidance in assessing impacts of the proposed program is provided in the thresholds of significance section below.

Local

**Santa Clara County General Plan.** The following policies contained in the *Santa Clara County General Plan* (SCC 1994) are relevant to the proposed program:

**Policy HS 1** Ambient air quality for Santa Clara County should comply with standards set by state and federal law.

**Policy C-HS 3** Countywide or multi-jurisdictional planning by the cities and County should promote efforts to improve air quality and maximize the effectiveness of implementation efforts. Guidance and assistance from the BAAQMD shall be sought in the preparation of coordinated, multi-jurisdictional plans as well as in environmental review of projects that have potential for regionally-significant air quality impacts.

Santa Clara County is in the process of updating the Health Element of its General Plan. On August 8, 2014, the County released a draft version of the updated Health Element for public review. The following policies related to GHG emissions are relevant to the proposed program:

**Policy HE-G.1** *Air Quality Environmental Review.* Comply with the BAAQMD project- and plan-level thresholds of significance for air pollutants and GHG emissions.

**Policy HE-G.2** *Coordination with Regional Agencies.* Coordinate with BAAQMD to implement stationary and area source emission measures.

**Policy HE-G.3** *Fleet Upgrades.* Promote BAAQMD mobile source measures that reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.
Policy HE-G.4 Off-Road Sources. 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.

Policy HE-G.5 VMT Reduction. Support efforts to reduce vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion to reduce emissions from mobile sources. These efforts may include improved transit service, better roadway system efficiency, transportation demand management, parking and roadway pricing strategies, and growth management measures.

Policy HE-G.10 Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and GHG emissions.

Policy HE-G.20 Monitor for Vectors and Infectious Diseases. Continue to monitor specific vector-borne and infectious diseases, such as West Nile Virus, Dengue, and Lyme Disease, to better understand emerging public health threats due to climate change.

In 2007, the Santa Clara County Board of Supervisors signed the Cool Counties Climate Stabilization Declaration and established a set of aggressive GHG emission reduction goals for the County:

- Stop increasing the amount of emissions by 2010;
- Decrease emissions by 10 percent every 5 years from 2010 to 2050; and
- Reach an 80-percent reduction by 2050.

A Climate Action Plan was developed that focuses on county operations, facilities, and employee actions that will reduce not only GHG emissions but also energy and water consumption, solid waste, and fuel consumption. It focuses primarily on steps needed to reach the 10-percent reduction goal by 2015 but also identifies policies and actions that are needed to set the stage for reductions past 2015 (Santa Clara County 2009).

Standards of Significance

Based on Appendix G of the CEQA Guidelines and professional expertise, the program would result in a significant impact on GHGs if it would:
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD CEQA Guidelines included operation-related thresholds of significance for land use development and stationary-source projects. Stationary sources have a threshold of 10,000 MT CO₂e. For land use development projects, including residential, commercial, industrial, and public land uses and facilities, the threshold includes compliance with a qualified GHG reduction strategy or annual emissions of less than 1,100 MT CO₂e or efficiency performance criteria based on service population (BAAQMD 2010b). For the proposed program, 1,100 MT CO₂e is the threshold used to evaluate operational GHG emissions, if any occur.

**Impact Analysis**

**Methodology**

This section describes the methods used to evaluate whether the maintenance activities of the program would result in significant impacts related to GHG emissions. Emissions associated with maintenance activities, including operation of off-road equipment such as chainsaws, bulldozers, tractors, excavators, pumps, and generators, material hauling vehicles, and worker commute vehicles, have been quantified. Emissions were estimated using 2015 emission factors from CARB’s In-use Off-road Equipment 2011 Inventory Model, OFFROAD 2007, and EMFAC2011 (Horizon Water and Environment 2015).

As described in Chapter 2, Project Description, the proposed program would involve various routine maintenance activities that would be conducted on an annual basis. To make conservative emission estimates, this analysis assumes that one of each piece of off-road equipment type operating simultaneously for 8 hours per day, except for pumps that would operate 24 hours per day. This analysis assumes three worker commute round trips and 18 material hauling round trips per day with a total trip length of 40 miles per round trip. This analysis conservatively assumes that these activities could take place for 260 working days per year.

Table 17, Annual GHG Emissions from Program Activities, shows the annual emissions of criteria pollutants that could take place with the assumed maintenance program activities. Further details regarding the emission calculations can be found in Appendix D.
Table 17  Annual GHG Emissions from Program Activities

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Activity</th>
<th>Horsepower</th>
<th>Annual CO$_2$e Emissions (Metric Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chainsaw</td>
<td>8 hours</td>
<td>2.49</td>
<td>2</td>
</tr>
<tr>
<td>Excavator</td>
<td>8 hours</td>
<td>163</td>
<td>68</td>
</tr>
<tr>
<td>Rubber Tired Dozer</td>
<td>8 hours</td>
<td>255</td>
<td>111</td>
</tr>
<tr>
<td>Tractor</td>
<td>8 hours</td>
<td>96</td>
<td>39</td>
</tr>
<tr>
<td>Pumps</td>
<td>24 hours</td>
<td>53</td>
<td>139</td>
</tr>
<tr>
<td>Generator</td>
<td>8 hours</td>
<td>66</td>
<td>58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Trip Length</th>
<th>Annual CO$_2$e Emissions (Metric Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Trips</td>
<td>3 trips</td>
<td>40 miles</td>
</tr>
<tr>
<td>Hauling Trips</td>
<td>18 trips</td>
<td>40 miles</td>
</tr>
<tr>
<td>Total Annual Emissions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Horizon Water and Environment 2016

Note: Annual emissions are based on 260 working days per year.

Environmental Topics Eliminated from Further Analysis

Conflict with GHG Emission Reduction Plans. The State of California has implemented AB 32 to reduce GHG emissions. The proposed program activities would not conflict with the most recent list of CARB’s early action strategies; proposed maintenance activities are not considered a target sector for early action measures. The CARB Scoping Plan Update (CARB 2014) mentions water as a key focus area and calls for effective regional integrated planning that maximizes efficiency and conservation efforts in the water sector; it also calls for measures that reduce GHG emissions and maintain water supply reliability. The proposed program is consistent with the water focus area in the CARB Scoping Plan Update in that it would maintain the structural and functional integrity of SJWC facilities in the Los Gatos Creek Watershed and thereby maintain water supply reliability. SJWC would not be required to report proposed program GHG emissions to CARB because the annual GHG emissions would be well below the BAAQMD emission significance threshold.
Environmental Impacts

**IMPACT: PROGRAM ACTIVITIES WILL GENERATE GHG EMISSIONS (LESS THAN SIGNIFICANT)**

The annual CO$_2$e emissions estimate for the proposed maintenance program conservatively assumes that work activity would take place for 260 days per year (see Table 17, Annual GHG Emissions from Program Activities). The emissions associated with the proposed maintenance activities are 746 MT CO$_2$e per year. These annual GHG emissions are well below the BAAQMD mass emission significance threshold of 1,100 MT CO$_2$e per year. As defined in BAAQMD’s CEQA Guidelines, project-level emissions that are below the mass emissions thresholds are considered to be less than cumulatively considerable. Because emissions of GHG would be below the significance threshold, impacts would be less than significant.

3.7 **HAZARDS AND HAZARDOUS MATERIALS**

This section describes the existing conditions of the proposed program area and regulatory setting with respect to hazards and hazardous materials. The environmental setting section identifies areas potentially affected by known hazardous materials in soil or groundwater, as well as by wildfire hazards. This section also includes the significance criteria and methodology used to evaluate significance, and the potential impacts related to hazardous materials. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning hazards or hazardous materials impacts were received during the NOP process.

**Environmental Setting**

**Hazardous Materials in Soil and Groundwater**

This discussion of documented releases of hazardous materials is based on the results of database searches using the State Water Resources Control Board’s GeoTracker database and the Department of Toxic Substances Control EnviroStor database for the program area and general vicinity within approximately ¼ mile. This search distance was selected to include offsite cleanup sites that could have the potential to affect subsurface conditions at proposed
maintenance sites due to migration of contaminants in groundwater. The GeoTracker database includes the following types of hazardous materials site lists: leaking underground storage tank cleanup sites; spill, leak, investigation, and cleanup sites; permitted underground storage tank facilities; military sites; irrigated lands regulatory program; and other cleanup sites. The EnviroStor database includes federal Superfund, state response, voluntary cleanup, school cleanup, and hazardous waste corrective action sites.

The database searches did not identify any hazardous materials sites located at any of the various SJWC maintenance sites (SWRCB 2016; DTSC 2016). However, four known leaking underground storage tank cleanup sites are located approximately 0.25 miles from proposed maintenance sites. The California Department of Forestry and Fire Hornbrook Station is situated approximately 0.25 mile from the Hendry’s Intake Facility, and the local oversight agency granted case closure of a leaking underground storage tank cleanup sites case at that location in 1993. In addition, three other leaking underground storage tank cleanup sites were identified within 0.25 miles of proposed culvert maintenance sites near Lake Elsman: the Loma Prieta School District site at 23845 Summit Road, a private residence, and the Binter property at 24196 Loma Prieta Avenue. All of these cases were closed between 1995 and 2000 (SWRCB 2016).

**Transportation Routes**

SJWC transports hazardous wastes through the county by truck, primarily along major arterials and highways, for disposal at treatment, storage, and disposal facilities in other counties or outside California in compliance with federal and state regulations. County roads and city streets may be used to transport hazardous wastes from their sources to major highways. Haulers are required to use the most direct, safe route.

**Emergency Response and Evacuation**

Emergency response is the responsibility of the Santa Clara County Department of Environmental Health. In 2008, the county adopted the Santa Clara County Operational Area Emergency Operations Plan, which describes the county’s emergency operations organization, compliance with relevant regulations, and other guidelines. This plan also facilitates multi-agency and multi-jurisdictional coordination during emergency operations, public information functions, and resource management (Santa Clara County 2008). As described in this plan, the county is responsible for coordinating and directing response and recovery operations in the unincorporated areas of Santa Clara County, with the cities providing support and mutual aid as needed.

Through mutual aid agreements with nearby cities, the county receives emergency response support from several participating agencies. Hazardous materials emergency response is
provided by the City of Gilroy’s Department of Building, Life, and Environmental Safety; City of Santa Clara’s Fire Department; and the City of Sunnyvale’s Department of Public Safety Fire Services Bureau, each within its respective jurisdiction. Local fire agencies that assist and coordinate their activities with the Department of Environmental Health are the Santa Clara County Fire Department, Milpitas Fire Department, Mountain View Fire Department, and Palo Alto Fire Department (Unidocs 2014). These hazardous materials response teams are trained to respond to any level of hazardous materials incident in the county, including overturned tank trucks, fires involving hazardous materials and chemicals, incidents involving radioactive materials, downed electrical lines and ruptured natural gas lines, chlorine and toxic gas releases, fuel spills, and explosives and bombs. SJWC’s contractors coordinate with emergency response providers, as needed, during its routine maintenance activities.

In 2010, the county also adopted the Santa Clara County Catastrophic Mass Transportation/Evacuation Plan, which describes mass transportation evacuation operations in the aftermath of a catastrophic earthquake in the San Francisco Bay Area. This plan is an addition to the County’s Operational Area Emergency Operations Plan, and addresses local response to a moment magnitude 7.9 earthquake on the San Andreas Fault (Santa Clara County 2010). The Santa Clara County Sheriff’s Office is the lead agency for operations in unincorporated areas of the county, including the program area.

**Wildland Fire Hazards**

The primary fire season in the program area extends from late summer through fall, when conditions are driest and air temperatures are high. Fire hazards in Santa Clara County are influenced by topography and wind patterns. The terrain of the Santa Clara Valley results in prevailing winds that flow roughly parallel to the valley's northwest-southeast axis. According to the wildland fire threat area maps produced by the California Department of Forestry and Fire Protection, the wildfire threat for SJWC facilities located west of the Lexington Reservoir is considered very high and the wildfire threat for SJWC facilities located east and southeast of the Lexington Reservoir is considered high (CALFIRE 2007). The California Department of Forestry and Fire Protection has responsibility for the control of wildland fire hazards throughout the program area. An emerging cause for concern is the potential for fires started by mowing and use of power equipment (such as that used as part of the proposed maintenance program) around very dry vegetation.

**Nearby Schools**

Four schools are located within approximately 0.25 miles of the program area. Table 18, *Schools Within 0.25 Miles of Program Area*, lists these schools and their location.
Table 18  Schools Within 0.25 Miles of Program Area

<table>
<thead>
<tr>
<th>School</th>
<th>Street</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeside Elementary School</td>
<td>19621 Black Road</td>
<td>Los Gatos</td>
</tr>
<tr>
<td>Lexington Elementary School</td>
<td>19700 Old Santa Cruz Highway</td>
<td>Los Gatos</td>
</tr>
<tr>
<td>Los Gatos Preschool and Childcare</td>
<td>21530 Jessie Way</td>
<td>Los Gatos</td>
</tr>
<tr>
<td>Loma Prieta Elementary School</td>
<td>23800 Summit Road</td>
<td>Los Gatos</td>
</tr>
</tbody>
</table>

Source: Horizon Water and Environment 2016

Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act) (42 USC § 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, U.S. EPA has the authority to identify the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the “Superfund”) for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) (42 USC § 6901 et seq.) was enacted in 1976 as an amendment to the Solid Waste Disposal Act to address the nationwide generation of municipal and industrial solid waste. RCRA gives U.S. EPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, including underground storage tanks storing hazardous substances. RCRA also establishes a framework for the management of nonhazardous wastes. RCRA addresses only active and future facilities; it does not address abandoned or historical sites, which are covered by CERCLA (as described above).

Rodenticide Act require pesticide applicators to pass a licensing examination for status as “qualified applicators,” create a review and registration process for new pesticide products, and provide for thorough and understandable labeling that includes instructions for safe use.

**State**

**Hazardous Waste Control Act.** The Hazardous Waste Control Act of 1972 created the Hazardous Waste Management Program, which is similar to, but more stringent than, the federal program under RCRA. The Hazardous Waste Control Act is implemented by regulations contained in Title 26 of the California Code of Regulations. These regulations list more than 800 materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Under the Hazardous Waste Control Act and 26 California Code of Regulations, hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the Department of Toxic Substances Control.

**Pesticide Regulations.** U.S. EPA has delegated primary authority to California Department of Pesticide Regulation to enforce federal and state laws pertaining to the proper and safe use of pesticides (CDPR 2014a). County Agricultural Commissioners and their staffs are largely responsible for the in-field enforcement of California Department of Pesticide Regulation’s pesticide use regulations in California’s 58 counties. Personnel from the California Department of Pesticide Regulation’s headquarters and the department’s field staff provide training, coordination, technical, and legal support to the counties (CDPR 2014a).

Title 3 California Code of Regulations, Division 6 describes the role of the California Department of Pesticide Regulation and provides guidance related to pesticide regulatory programs; pesticides (including pesticide registration and the identification and use of restricted materials); licensing, work requirements, and pesticide-related worker safety during pest control operations; and environmental protection for groundwater, air quality, aquatic and marine environments, surface water, and compost (CDPR 2014b). The County Agricultural Commissioners, on behalf of the department, are responsible for enforcement of these human health and environmental protections in the field.

**General NPDES Pesticide Use Permit for Aquatic Weed Control.** SWRCB has adopted a general NPDES permit (Water Quality Order No. 2013-0002-DWQ, General Permit No. CAG990005) for the regulation of residual aquatic pesticides to control aquatic weeds in waters of the United States (SWRCB 2013). As described in the regulatory setting portion of Section 3.3, Biological Resources, waters of the United States include all waters currently used, used in the past, or susceptible to use in interstate commerce; all interstate waters; all other waters the use, degradation, or destruction of which would or could affect interstate or foreign commerce;
impoundments of and tributaries to waters of the United States and wetlands adjacent to waters of the United States; and flood protection channels that exchange water with waters of the United States (SWRCB 2013). This General Permit authorizes the discharge of the following aquatic pesticides: 2,4-D, acrolein, copper, diquat, endothall, fluridone, glyphosate, imazapyr, sodium carbonate peroxyhydrate, and triclopyr-based algaecides and aquatic herbicides. Aquatic pesticides that are applied to waters of the United States in accordance with FIFRA label requirements are not considered pollutants; however, pesticides or byproducts that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

To obtain coverage under the NPDES General Permit, a discharger must comply with all of the monitoring, reporting, and other restrictions detailed in the permit. First, an applicant must submit a Notice of Intent, a vicinity map, and an annual fee to the applicable RWQCB to apply for coverage under the permit. An applicant must comply with the specific monitoring requirements identified in the permit and must submit reports annually (at least) to the applicable RWQCB. The General Permit for weed control requires that dischargers comply with effluent limitations, including developing and implementing an aquatic pesticide application plan and complying with applicable receiving-water limitations (SWRCB 2013). A discharger covered by the permit must follow all pesticide label instructions and any terms contained in use permits issued by County Agricultural Commissioners. In addition, appicaters of a pesticide designated as a restricted material either must be licensed by California Department of Pesticide Regulation or must work under the supervision of a licensed professional (SWRCB 2013). All aquatic pesticides applied by SJWC under the NPDES General Permit are applied in accordance with permit requirements.

**Healthy School Act of 2000 (California Education Code, Sections 17608–17613).** The Healthy School Act of 2000 restricts the use of certain pesticides at school sites and requires noticing for application of approved pesticides at schools. Under Section 17610 of the California Education Code, the use of a pesticide on a school site is prohibited if that pesticide is granted a conditional registration, an interim registration, or an experimental use permit by the California Department of Pesticide Regulation, or if the pesticide is subject to an experimental registration issued by U.S. EPA, and (a) the pesticide contains a new active ingredient or (b) the pesticide is for new use. The use of a pesticide on a school site is prohibited if the California Department of Pesticide Regulation cancels or suspends registration, or requires phase-out of use, of that pesticide. Property owners who own properties where child daycare facilities are located must provide notice to the child daycare facility if they intend to personally apply any pesticide: (a) inside the rented premises on which the child daycare facility is located; (b) on a designated child daycare facility playground designated by the owner; (c) on an area designated for use by the child daycare facility; or (d) on an area within 10 feet of the perimeter of any child daycare facility.
Under Section 17611 of the California Education Code, each school site must keep records of all pesticide use at the school site for a period of 4 years, and make such information available to the public. Under Section 17612, the school designee must annually provide to all staff and parents/guardians of pupils written notification of the names of all pesticide products (as well as product active ingredients) that are expected to be applied at the school site in the upcoming year. The school designee must post a warning sign in each area of the school site where pesticides are to be applied, displaying the pesticide product’s name, manufacturer’s name, U.S.EPA’s product registration number, intended date and areas of application, and reason for the pesticide applications. Under the proposed program, pesticides (e.g., herbicides) could be applied at school sites that are located along access roads.

**Emergency Services Act.** Under the Emergency Services Act, the State of California developed a plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. This office coordinates the responses of other agencies, including U.S. EPA, the California Highway Patrol, the nine RWQCBs, the various air quality management districts, and county disaster response offices.

**California Occupational Safety and Health Administration Standards.** Title 8 of the California Occupational Safety and Health Administration regulations specifies that workers who may be exposed to contaminated soils, vapors that could be inhaled, or groundwater containing hazardous levels of constituents are subject to monitoring and personal safety equipment requirements that specifically address airborne contaminants. The primary intent of the Title 8 requirements is to protect worker health.

**Local**

**Certified Unified Program.** For unincorporated areas of Santa Clara County, the Department of Environmental Health’s Hazardous Materials Compliance Division is the local agency, known as the Certified Unified Program Agency, with responsibility for implementing federal and state laws and regulations pertaining to hazardous materials management (Unidocs 2013). The Certified Unified Program is the consolidation of six state environmental regulatory programs into one program under the authority of a Certified Unified Program Agency (Cal EPA 2012). A Certified Unified Program Agency is a local agency that has been certified by Cal EPA to implement the six state environmental programs within the local agency’s jurisdiction. This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994. The six consolidated programs are:

- Hazardous Materials Release Response Plan and Inventory;
- California Accidental Release Prevention Program;
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs; and

As the local Certified Unified Program Agency, the Department of Environmental Health’s Hazardous Materials Compliance Division maintains the records regarding location and status of hazardous materials sites in the county and administers programs that regulate and enforce the transport, use, storage, manufacturing, and remediation of hazardous materials. By designating a Certified Unified Program Agency, Santa Clara County has accurate and adequate information to plan for emergencies and/or disasters and to plan for public and firefighter safety.

**Santa Clara County General Plan.** The *Santa Clara County General Plan* contains strategies and policies related to hazardous materials and emergency response (Santa Clara County 1994):

- **Strategy #1 of the Hazardous Materials Element: Manage Hazardous Materials Safely and Efficiently**
- **Strategy #1 of the Emergency Preparedness Element: Plan for Immediate Disaster Response**

**Policy C-HS 14**  All feasible measures to safely and effectively manage hazardous materials and site hazardous materials treatment facilities should be used, including complying with all federal and state mandates.

**Policy C-HS 15**  To achieve a more effective, efficient and economical regulatory environment, all feasible means to simplify and coordinate locally implemented hazardous materials management regulations should be considered.

**Policy C-HS 17**  Local governments should comply with all federal and state regulations regarding emergency planning and preparedness.

**Policy C-HS 18**  Local government, business, and community organizations should cooperate in preparing the most effective emergency response plans and procedures feasible.
Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on hazards or hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the 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 wastes within 0.25 mile of an existing or proposed school;

- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and as a result, create a significant hazard to the public or the environment;

- Result in a safety hazard for people residing or working in the proposed Project area if the project is within the jurisdiction of an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport or private airstrip;

- 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.

Impact Analysis

Methodology

The proposed program maintenance activities were evaluated to determine their potential to disturb existing hazardous waste sites or hazardous materials; result in the transport, use, or disposal of hazardous materials; or affect emergency response plans. Based on a comparison of the reviewed information, the regulatory requirements, and the proposed program’s construction and operational activities, potential hazards and hazardous materials-related effects were evaluated qualitatively and, as necessary, mitigation measures were proposed.

Environmental Topics Eliminated from Further Analysis

Airport Proximity. Proposed program activities would not be implemented within the jurisdiction of an airport land use plan or within two miles of a public or private airstrip. The proposed maintenance program would not affect safety hazards for people residing or working near airstrips or within the area of airport land use plans.
Environmental Impacts

**IMPACT: MAINTENANCE PROGRAM ACTIVITIES WOULD INVOLVE THE USE AND TRANSPORT OF HAZARDOUS MATERIALS HAVING POTENTIAL FOR ACCIDENTAL RELEASE (LESS THAN SIGNIFICANT)**

Proposed maintenance activities would be temporary in any one location within the program area. Maintenance activities would generally be confined to small areas at intake facilities, culverts, impoundment and dam facilities, and areas proposed for debris removal, tree removal, and vegetation management. Maintenance activities would largely be conducted with hand tools, such as shovels and clippers. Tree removal, sediment removal, and culvert replacement would involve the use of fuels and lubricants for powered hand-held equipment such as chainsaws and heavy equipment such as excavators. Additionally, chemical herbicides would be sprayed for weed removal on dam faces and to establish fire breaks along SJWC-owned access roads.

Fuels, lubricants, and chemical herbicides are considered hazardous. Hazardous materials would be transported to and from the maintenance site and would be removed once maintenance activities are complete. Hazardous materials would not be stored permanently at any of the maintenance sites. Nonetheless, if hazardous materials were accidentally released during use or transport, a significant impact on humans or the environment could result.

BMPs GEN-5 (staging and stockpiling of materials), GEN-8 (on-site hazardous materials management), GEN-9 (existing hazardous materials management), GEN-10 (spill prevention and response), GEN-12 (vehicle and equipment maintenance), and GEN-13 (vehicle and equipment and fueling) would all apply. With the incorporation of these measures into the maintenance program, potential impacts would be less than significant.

**IMPACT: PROPOSED MAINTENANCE ACTIVITIES WOULD EMIT OR HANDLE HAZARDOUS MATERIALS WITHIN 0.25 MILES OF EXISTING SCHOOLS (LESS THAN SIGNIFICANT)**

Four schools are located within 0.25 mile of the program area. As part of the proposed program, SJWC would conduct herbicide control along SJWC-maintained access roads and haul equipment carrying hazardous materials (fuel and lubricants) to and from maintenance sites. Herbicides, fuels, and lubricants are considered hazardous materials that may adversely affect children at schools if the materials are handled improperly or children are inadvertently exposed to hazardous emissions.

Herbicide applications are highly regulated and BMP VEG-4 requires herbicides to be applied consistent with Federal Insecticide, Fungicide, and Rodenticide Act label instructions and use
Environmental Effects

conditions issued by U.S. EPA, the California Department of Pesticide Regulation, and the County Agricultural Commissioner. These conditions are designed to protect both the applicator and downwind bystanders (e.g., school children).

There are no schools adjacent to SJWC-maintained access roads at which herbicides are currently intended to be used. Given the required compliance with regulations associated with herbicide application, the potential for adverse impacts to school children from herbicide application is low. The estimated number of material hauling trips for maintenance equipment carrying fuel and lubricants is low due to the infrequency of maintenance activity and varying locations of annual maintenance work. However, as there is still potential for accidental release, the potential is considered as significant.

The implementation of BMPs GEN-4 and VEG-4 regarding standard herbicide requirements and dust management controls would apply. With the incorporation of these measures into the maintenance program, potential impacts would be less than significant.

**IMPACT:** MAINTENANCE PROGRAM ACTIVITIES MAY UNCOVER UNKNOWN HAZARDOUS MATERIALS AND EXPOSE SUCH MATERIALS TO THE PUBLIC OR THE ENVIRONMENT (LESS THAN SIGNIFICANT)

Four leaking underground storage tank sites in the upper Los Gatos Creek Watershed are located within 0.25 miles of proposed maintenance sites. These leaking underground storage tank sites have been closed by the responsible agencies and no longer pose a hazard to the public or environment from the maintenance activities. The potential exists, however, that previously unknown hazardous materials sites or hazardous material contamination may be discovered during ground-disturbing maintenance activities, such as repair and replacement of culverts, new culvert construction, and erosion control/soil stabilization activities. If hazardous levels of contaminants are encountered during maintenance work, a significant impact on maintenance workers, the public, and the environment could result.

If previously unknown hazardous materials or contamination, such as oil, batteries, or paint cans, are encountered at a maintenance site, measures for handling of hazardous materials as required by BMP GEN-9, would apply. With the incorporation of these measures into the maintenance program, potential impacts would be less than significant.

**IMPACT:** MAINTENANCE PROGRAM ACTIVITIES MAY IMPEDER EMERGENCY RESPONSE OR EVACUATIONS (LESS THAN SIGNIFICANT)

Proposed maintenance activities would be implemented in the primarily rural area of the upper Los Gatos Creek Watershed. Implementation of emergency response and evacuation plans for this area is the responsibility of Santa Clara County. The County’s Operational Area Emergency
Operations Plan and Santa Clara County Catastrophic Earthquake Mass Transportation/Evacuation Plan encompass the entire county, including the program area. Within the program area, emergency response is provided by five participating agencies and, in the event of a catastrophic earthquake, the County Sheriff’s Office would be responsible for coordinating evacuation procedures.

Hindrance of access on public roads, such as could result during construction work, may interfere with emergency response and evacuations, which could cause a significant impact. Most maintenance activities would occur on SJWC property with gated access to private roads. The only facilities open to the public that would to be maintained under the proposed program are the John Nicolas Trail Road (no vehicle access) and Ellege Road (private road with vehicle access for residents only). Maintenance activities, particularly road and culvert maintenance work, would temporarily impede access on the road being maintained; however, except for Ellege Road, this maintenance work would be conducted on private roads closed to public vehicle traffic.

Once maintenance equipment is transported from SJWC's equipment storage facility near Lake Elsman to the maintenance site on SJWC property, no program related activity would take place on public roads, which would be the primary evacuation roads. Therefore, the proposed maintenance program would not substantially interfere with implementation of emergency response or evacuation plans.

BMPs GEN-17 (planning for pedestrians, traffic flow, and safety measures) and GEN-18 (public safety measures), would apply to the program. With the incorporation of these measures into the maintenance program, potential impacts would be less than significant.

**IMPACT: PROGRAM ACTIVITIES MAY REPRESENT POTENTIAL FIRE HAZARDS FROM USE OF EQUIPMENT IN OR NEAR VEGETATED AREAS (LESS THAN SIGNIFICANT)**

Maintenance program work sites are located in a rural area characterized by woodlands, chaparral, and grasslands. As described in the environmental setting, the program area is designated by the state Department of Forestry and Fire Protection as a very high or high fire hazard area. Use of maintenance equipment in vegetated areas would present a potential ignition source and fire hazard.

As part of the proposed program, SJWC would implement BMP GEN-11, which requires that all internal combustion engines be equipped with spark arrestors. BMP GEN-11 also includes requirements during the high-fire-danger period that work crews have appropriate fire suppression equipment available at work sites; keep flammable materials at least 10 feet away from equipment that could spark, fire, or flame; and not use portable gasoline-powered tools.
within 25 feet of any flammable material unless a shovel or fire extinguisher is within immediate reach of the work crew. Implementation of these BMP requirements would minimize the wildfire risk during maintenance activities. In addition, the proposed program includes targeted watershed vegetation management and fuel management activities at SJWC-maintained facilities and structures and along SJWC-maintained roads to reduce potential fire fuel. These activities would occur primarily after the wet season but before the drier season (spring months) when such activities can be a source of fire ignition. These vegetation and fuel management efforts would thereby minimize potential wildfire hazards in the vicinity of SJWC facilities.

With the incorporation of these measures as outlined in BMP GEN-11 into the maintenance program, potential impacts would be less than significant.

### 3.8 Hydrology and Water Quality

This section discusses existing conditions and evaluates the proposed program’s potential effects related to hydrology and water quality. Federal, state, and local regulations related to hydrology and water quality are described. This evaluation is based on a review of the Los Gatos Creek Watershed Maintenance Program Manual (Appendix A), internal documentation from SJWC, and regional information provided by state and local agencies, including the county. Additionally, sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

Comments concerning hydrology or water quality impacts were received during the NOP process from members of the public requesting that the EIR consider potential impacts to existing hydrological conditions, local creeks, water quality of Los Gatos Creek, and that proposed grading at Hooker Gulch would not interrupt local water supply. Analysis of these potential impacts and measures to reduce potential impacts are included in this EIR section.

**Environmental Setting**

The upper Los Gatos Creek Watershed is located in the northern portion of the central Santa Cruz Mountains, a rugged and steep range that extends from the northern end of the San Francisco Peninsula south to the Watsonville area. The headwaters of the upper Los Gatos Creek Watershed are approximately 11 miles southeast of Los Gatos. Los Gatos Creek joins the Guadalupe River, downstream in San Jose, which ultimately drains to the San Francisco Bay. Under the proposed program, SJWC maintenance activities would occur in the upper Los Gatos Creek Watershed, defined as the area upstream of the Trout Creek/Los Gatos Creek confluence, just downstream of the Lexington Reservoir.
In terms of structure, the upper Los Gatos Creek Watershed has a prominent, northwest-southeast-trending ridge marking the southern boundary of the watershed. The eastern watershed boundary is a ridge that links Mount Thayer, Mount Umunhum, and Loma Prieta Mountain. Elevations in the upper Los Gatos Creek Watershed range from 560 feet above mean sea level (amsl) at the Trout Creek/Los Gatos Creek confluence downstream of the Lexington Reservoir, to approximately 3,800 feet amsl at Loma Prieta Mountain.

The watershed structure, topography, and drainage patterns in the program area are strongly influenced by the area’s geologic structure and faulting; the resistance of the underlying geologic materials to erosion, slope, aspect; the watershed’s orientation to dominant storm patterns; and the distribution of annual precipitation. The Lexington Reservoir is positioned in the main valley of the watershed with a north-south orientation. The Lexington Reservoir is the receiving water body for Beardsley Creek (also known as Lyndon Canyon Creek), Briggs Creek, and Aldercroft Creek on the west side of the lake and Limekiln Creek, Cavanee Creek (also known as Soda Springs Canyon Creek), and Hendry’s Creek on the east side of the lake. Hooker Gulch joins Los Gatos Creek upstream of the Lexington Reservoir. The primary sub-watersheds of the upper Los Gatos Creek Watershed are described in more detail below. The locations of SJWC facilities are discussed below.

Sub-watersheds

**Upper Los Gatos Creek (Upstream of Lake Elsman).** The region upstream of Lake Elsman represents the southernmost and easternmost headwaters of the watershed. This region has a drainage area of approximately 10 square miles, with a maximum elevation of approximately 3,800 feet amsl at Loma Prieta Mountain to the east, and a minimum elevation of about 1,150 feet amsl at the Lake Elsman spillway. Approximately 45 percent of the contributing watershed is forested, with the other areas being mostly grassland and mixed grassland/forest.

**Hooker Gulch.** Hooker Gulch is positioned about half-way between Lake Elsman (approximately three miles upstream) and the Lexington Reservoir (approximately two miles downstream). The Hooker Gulch sub-watershed is approximately three square miles in area, with a maximum elevation of about 3,500 feet amsl at Mount Thayer to the east and a minimum elevation of 760 feet amsl at the confluence of Hooker Gulch with Los Gatos Creek. SJWC owns and operates a dam and intake facility (the Hooker Intake Facility) for their water supply operations at the downstream end of Hooker Gulch (approximately 1,000 feet upstream of its confluence with Los Gatos Creek). Approximately 40 percent of the Hooker Gulch sub-watershed is covered in forest, with the other areas being mostly grassland and mixed grassland/forest.
3.0 Environmental Effects

**Hendry’s Creek.** The outlet (mouth) of Hendry’s Creek occurs just upstream of the upper extent of the Lexington Reservoir. SJWC owns and operates a small weir and intake facility at lower Hendry’s Creek, approximately 2,100 feet upstream of the creek’s confluence with the Lexington Reservoir. The Hendry’s Creek sub-watershed is approximately two square miles in area, with a maximum elevation of approximately 2,700 feet amsl at the eastern edge of the watershed and a minimum elevation of 700 feet amsl at the creek’s confluence with Los Gatos Creek. Approximately 43 percent of the Hendry’s Creek sub-watershed is forested, with the other areas being mostly grassland and mixed grassland/forest.

**Cavanee Creek.** Cavanee Creek (also known as Soda Springs Creek) is a direct tributary to the Lexington Reservoir from the eastern side of the watershed. Before reservoir construction, Cavanee Creek was a direct tributary to Los Gatos Creek, similar to Hendry’s Creek and Hooker Gulch upstream in the watershed. The Cavanee Creek sub-watershed is approximately seven square miles in area, with a maximum elevation of approximately 3,500 feet amsl at Mount Thayer at the southeastern edge of the watershed and a minimum elevation of approximately 880 feet amsl near the creek mouth. Approximately 45 percent of the Cavanee Creek subwatershed is covered in forest.

**Briggs Creek.** Briggs Creek drains a portion of the watershed area west of the Lexington Reservoir and supplies water to Lake Cozzens and Lake Kittredge (also known as Howell Reservoir) farther upstream, which are owned and maintained by SJWC. These lakes were built in the 19th century for water supply purposes and continue to be used as water supply sources today. They are located “off line” of Briggs Creek; a diversion provides Briggs Creek water to these reservoirs and a channel downstream of Lake Cozzens provides any lake discharges back into Briggs Creek. The Briggs Creek sub-watershed has a drainage area of approximately one square mile. Approximately 57 percent of this watershed is covered by forests.

**Beardsley Creek.** Similar to Cavanee and Briggs Creeks, Beardsley Creek (also known as Lyndon Canyon Creek) was previously a direct tributary to Los Gatos Creek, but it now flows directly into the western arm of the Lexington Reservoir. SJWC owns and operates a weir and intake facility along Beardsley Creek, approximately one-third of the watershed distance upstream of the Lexington Reservoir. Approximately seven square miles of watershed area is upstream of the intake facility. Approximately 56 percent of the Beardsley Creek subwatershed upstream of the intake is forested, and its headwaters are encompassed by the Sanborn-Skyline County Park. SJWC also owns and operates the Lake Ranch Reservoir in the headwaters of the Beardsley Creek sub-watershed. This sub-watershed has a maximum elevation of 3,000 feet amsl, at the western edge of the watershed, and a minimum elevation of approximately 650 feet amsl at the Lexington Reservoir spillway. SJWC’s Lake Ranch Reservoir provides runoff storage in the upper portion of the Beardsley Creek subwatershed.

**Trout Creek.** Trout Creek is a tributary that joins Los Gatos Creek downstream of the Lexington Reservoir. SJWC owns and operates a weir, intake, and pump facility at lower Trout
Creek. The Trout Creek sub-watershed is approximately one square mile in area, with a maximum elevation of approximately 2,500 feet amsl at the northwestern edge of the watershed, a maximum elevation of approximately 630 feet amsl at the Trout Creek Intake Facility, and a minimum elevation of approximately 460 feet amsl at the creek’s confluence with Los Gatos Creek. Because the Trout Creek Intake Facility has a lower elevation than MWTP, a pump is used to convey the raw water by means of a 16-inch-diameter pipe to MWTP. Approximately 45 percent of the Trout Creek subwatershed is forested, with the other areas being mostly grassland and mixed grassland/forest.

**Precipitation Patterns**

Similar to the general rainfall pattern in Northern California, precipitation in the program area generally occurs between October and April, with the remainder of the year being fairly dry. Precipitation in the upper Los Gatos Creek Watershed is almost always in the form of rain. The steep slopes and ridges of the Santa Cruz Mountains create orographic rainfall effects, with higher peaks receiving more precipitation. A rain shadow effect is also observed on the lee side of the mountains, with less rainfall as watershed elevations descend into the Santa Clara Valley. Historic rainfall conditions indicate a large variation in mean annual rainfall across the watershed, as displayed in Table 19, Annual Precipitation in the Upper Los Gatos Creek Watershed.

**Table 19  Annual Precipitation in the Upper Los Gatos Creek Watershed**

<table>
<thead>
<tr>
<th>Sub-watershed Areas</th>
<th>Mean Annual Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Gatos Creek headwater upstream from Lake Elsman</td>
<td>54.3</td>
</tr>
<tr>
<td>Los Gatos Creek Watershed upstream from Ostwald Intake</td>
<td>52.4</td>
</tr>
<tr>
<td>Hooker Gulch</td>
<td>53.5</td>
</tr>
<tr>
<td>Hendry’s Creek</td>
<td>45.1</td>
</tr>
<tr>
<td>Cavanee Creek</td>
<td>51.4</td>
</tr>
<tr>
<td>Beardsley Creek/Lyndon Canyon</td>
<td>46.9</td>
</tr>
<tr>
<td>Trout Creek</td>
<td>38.1</td>
</tr>
</tbody>
</table>

*Source:* USGS 2016

*Note:* Mean annual precipitation in inches.
3.0 **Environmental Effects**

**Flow**

Streamflow in Los Gatos Creek is perennial, continuing even during extended dry seasons, and is influenced by releases and flow management at Lake Elsman in the upper watershed. Table 20, *Estimated Peak Discharges in the Upper Los Gatos Creek Watershed*, provides estimated peak discharges at various locations in the upper Los Gatos Creek Watershed, based on regional regression equations.

**Groundwater Supplies, Quality, and Recharge**

No state-designated groundwater aquifers or basins are present within the program area (California Department of Water Resources 2016). Although the SJWC does not operate groundwater recharge or pumping facilities in the upper Los Gatos Creek Watershed, private residences and communities in the program area may operate groundwater wells for water supply. Information on private groundwater wells and pumping activities is not publicly available. Considering the minimal land development in the program area, there are likely few threats to groundwater quality, which likely reflects the influence of natural conditions.

**Water Quality**

Upper Los Gatos Creek and its tributaries are minimally influenced by anthropogenic contaminants. Most of the upper Los Gatos Creek Watershed is undeveloped and managed as open space by the Midpeninsula Regional Open Space District, SCVWD, and the County. The open space district operates four open space preserves in the program area. Sierra Azul Open Space Preserve has restrictions on vehicles, pets, and camping.

Most of the drainage area to Lake Williams and Lake Elsman is undeveloped, and public access is not permitted to the reservoirs or watershed area. During warm summer days, water quality may degrade in standing pools and reservoirs, such as the pool that forms behind the Ostwald Intake Facility’s inflatable dam. As the water temperature increases, concentrations of dissolved oxygen decline, and nutrients and bacteria increase. Algae and aquatic plants may become established under these conditions and release nutrients during various life cycle stages. Nutrients are a particular concern because of the potential for biological fouling of intake structures and the development of taste and odor issues in the water. Algal control measures were implemented periodically at the Ostwald Intake Facility and some of the reservoirs; however, the last occurrence of this practice was in 2007. There are no current plans to apply for an aquatic pesticide application permit.

Runoff and sedimentation from fire roads on the ridgelines, as well as natural erosion and sediment transport processes likely influence turbidity in tributaries and the main stem Los Gatos Creek during storm events.
### Table 20  Estimated Peak Discharges in the Upper Los Gatos Creek Watershed

<table>
<thead>
<tr>
<th>Location</th>
<th>Peak Discharge Event</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-year</td>
<td>5-year</td>
</tr>
<tr>
<td>Hooker Gulch</td>
<td>180</td>
<td>390</td>
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<td>Hendry’s Creek</td>
<td>80</td>
<td>180</td>
</tr>
<tr>
<td>Cavanee Creek</td>
<td>240</td>
<td>530</td>
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<tr>
<td>Beardsley Creek</td>
<td>160</td>
<td>370</td>
</tr>
<tr>
<td>Trout Creek</td>
<td>60</td>
<td>140</td>
</tr>
</tbody>
</table>

**Source:** USGS 2016

**Note:** Peak discharge event in cubic feet per second. Peak discharge estimates are based on regional regression analysis and not on actual gaged flow.
Anthropogenic activities that pose the highest risk in the watershed and can affect the raw water quality of SJWC’s supply are faulty septic systems and pollutant discharges to the creek. SJWC closely monitors the quality of water received at each intake, and most of the program area is private property with no septic systems.

SJWC relies on the San Francisco Bay RWQCB and State Water Resources Control Board Division of Drinking Water to regulate discharges to Los Gatos Creek and the water treatment activities of the communities upstream of the Lexington Reservoir. SJWC relies on the County Department of Health Services to regulate and monitor septic system activities.

**Regulatory Setting**

**Federal**

**Clean Water Act Section 404.** Section 404 of the CWA prohibits the discharge of dredged and fill materials into waters of the United States, including wetlands, without prior USACE authorization. “Discharge of dredged material” and “discharge of fill material” are defined in Title 33, Section 323.2 of the Code of Federal Regulations (33 CFR Section 323.2). Waters of the United States, including wetlands, are defined in 33 CFR Section 328.3. USACE jurisdiction in wetlands and other waters of the United States is described in more detail in Section 3.3, Biological Resources.

USACE does not consider “incidental fallback,” or small volumes of dredged material that become redeposited within waters of the United States during dredging or excavation activities, to be a discharge of dredged material. As a result, the incidental fallback associated with excavating sediment from a stream channel using long-reach excavators or similar equipment from a top-of-bank location or within the channel would not be regulated by USACE under CWA Section 404. Other CWA sections are implemented by state agencies as described below.

**Regional General Permit.** USACE commonly issues a regional general permit for routine maintenance activities, such as those involved in the proposed program, conducted over a watershed or county area that are similar in nature and cause only minimal individual and cumulative environmental impacts. A regional general permit is typically valid for five years from the date of issuance and may be renewed at USACE’s discretion.

**State**

**Porter-Cologne Water Quality Control Act.** California’s Porter-Cologne Act was enacted in 1969 and, together with the federal CWA, provides regulatory guidance to protect water quality
and water resources. The Porter-Cologne Act established SWRCB and divided California into nine regions, each overseen by an RWQCB. The Porter-Cologne Act established regulatory authority over waters of the state, which are defined as “any surface water or groundwater, including saline waters, within the boundaries of the State.” More specifically, SWRCB and its nine RWQCBs have jurisdiction over the bed and banks of a stream channel, its riparian corridor, and its beneficial uses. The San Francisco Bay RWQCB has jurisdictional authority to implement the Porter-Cologne Act in Santa Clara County. All waters of the United States in the program area also are considered waters of the state and are subject to San Francisco Bay RWQCB jurisdiction under the Porter-Cologne Act. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 303, 401, and 402 to SWRCB and RWQCBs, as described further below.

The program area is in the Santa Clara Basin, which is covered under the larger San Francisco Bay Water Quality Control Plan, or Basin Plan (San Francisco Bay RWQCB 2013). Beneficial uses for the upper Los Gatos Creek Watershed, as identified in the Basin Plan, are shown in Table 21, Beneficial Uses in the Upper Los Gatos Creek Watershed.

The Basin Plan contains qualitative and quantitative water quality objectives for bacteria, dissolved oxygen, oil and grease, pH, salinity, sediment and suspended material, tastes and odors, temperature, and other criteria to protect beneficial uses established in the Basin Plan. The following key water quality objectives established in the Basin Plan apply to the proposed program:

- Dissolved oxygen in non-tidal waters: coldwater habitat – 7.0 milligrams per liter (mg/L); warmwater habitat – 5.0 mg/L;
- Temperature: The temperature of any cold or warm freshwater habitat shall not be increased by more than 5 degrees Fahrenheit (°F) (2.8 degrees Celsius [°C]) above the natural receiving water temperature;
- Turbidity: Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 Nephelometric Turbidity Units; and
- pH: The pH shall not be depressed below 6.5 or raised above 8.5, which encompasses the pH range usually found in waters within the basin; controllable water quality factors shall not cause changes greater than 0.5 unit in normal ambient pH levels.
### Beneficial Uses in the Upper Los Gatos Creek Watershed

<table>
<thead>
<tr>
<th>Water Body</th>
<th>MUN</th>
<th>FRSH</th>
<th>GWR</th>
<th>COMM</th>
<th>COLD</th>
<th>MIGR</th>
<th>RARE</th>
<th>SPWN</th>
<th>WARM</th>
<th>WILD</th>
<th>REC-1</th>
<th>REC-2</th>
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</thead>
<tbody>
<tr>
<td>Los Gatos Creek</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Lexington Reservoir</td>
<td>E</td>
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<td>Beardsley Creek</td>
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<td>Lake Elsmans</td>
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<td>Austrian Gulch Creek</td>
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</tr>
</tbody>
</table>

**Source:** San Francisco Bay RWQCB 2013

**Note:**
- E: Existing beneficial use; P: Potential beneficial use; MUN: municipal and domestic water supply; FRSH: freshwater replenishment; GWR: groundwater recharge; COMM: commercial and sport fishing; MIGR: fish migration; RARE: preservation of rare and endangered species; SPWN: fish spawning; WARM: warm freshwater habitat; WILD: wildlife habitat; REC-1: water contact recreation; REC-2: noncontact water recreation.
Clean Water Act

Section 303 and Total Maximum Daily Load Program. Under Section 303, the RWQCBs, in conjunction with USEPA, are responsible for:

- identifying “impaired water bodies” (those that do not meet established water quality standards);
- identifying the pollutants causing impairment;
- establishing priority rankings for waters on the list; and
- developing and implement pollution control plans, also called Total Maximum Daily Loads (TMDLs), to improve water quality.

The Section 303(d) list is updated every 3 years. The current Section 303(d) list does not specifically identify water quality impairments in the upper Los Gatos Creek Watershed, but does identify potential impairments in the Los Gatos Creek and Guadalupe River Watersheds and the San Francisco Bay, the ultimate receiving water bodies of the upper Los Gatos Creek Watershed. According to the most recent (2010) Section 303(d) list, Los Gatos Creek is listed as impaired by diazinon and the Guadalupe River is listed as impaired by trash (SWRCB 2010).

The San Francisco Bay RWQCB has prepared, or is in the process of preparing, TMDLs for water quality impairments identified on the Section 303(d) list. U.S. EPA approved the mercury TMDL for the Guadalupe River in 2010 (USEPA 2010). The following TMDLs have been established for the San Francisco Bay and/or its tributaries: San Francisco Bay Mercury (San Francisco Bay RWQCB 2006), San Francisco Bay PCBs (San Francisco Bay RWQCB 2008), and Urban Creeks Diazinon and Pesticide-Related Toxicity (San Francisco Bay RWQCB 2005).

The upper Los Gatos Creek Watershed is relatively undeveloped and is not a source of anthropogenic contaminants from urban or industrial developments, such as PCBs, dioxins, diazinon, or trash. In addition, the watershed does not exhibit mercury or selenium contamination based on water quality testing conducted by SJWC for compliance with federal and state drinking water regulations; the watershed does not contribute to mercury or selenium contamination in San Francisco Bay. Dioxins may be present in the watershed because the contaminant is transported by wind currents; however, there are no known sources of dioxins in the program area. If dioxin concentrations are present, they likely represent the background conditions for the region.

Section 401. All projects that have a federal component and may affect water quality in the state (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) also must comply with CWA Section 401. The purpose of Section 401 is to evaluate water quality when considering activities associated with dredging or placement of fill materials into waters of the United States. Section 401 compliance involves obtaining a CWA Section 401
Water Quality Certification to confirm that any such discharge will comply with the applicable provisions of the CWA, including state water quality standards. Section 401 Water Quality Certification is issued by the RWQCBs. For the proposed program, the San Francisco Bay RWQCB would issue a Section 401 Water Quality Certification.

**Section 402.** As authorized under CWA Section 402, the RWQCBs regulate point-source and non-point-source discharges into surface waters (other than dredged or fill material) through the NPDES permit program. Applicants can acquire either general permits (those that cover a number of similar or related activities) or individual permits for discharges to waters of the United States. Examples of activities covered under the NPDES permit program include general construction activities, aquatic weed pesticide applications, and stormwater drainage. Permits are valid for a 5-year period. As discussed in Section 3.7, Hazards and Hazardous Materials, all aquatic pesticides applied by SJWC are done so in accordance with requirements of the Aquatic Weed Pesticide Use NPDES General Permit (Order No. 2013-0002-DWQ).

**License for Diversion and Water Use.** Under California Water Code, Division 2, Section 5101, SWRCB requires each person or organization that uses diverted surface water or pumped groundwater from a known subterranean stream after December 31, 1965, to file a Statement of Water Diversion and Use. This documentation is commonly referred to as a “water right.”

SJWC has water rights dating back to January 10, 1947. With these rights, SJWC diverts up to 6,240 acre-feet per year from Los Gatos Creek (SWRCB 1976). The water right permit stipulates that SJWC maintain minimum base flows downstream of Austrian Dam (one cubic foot per second [cfs]) and Ostwald Dam (two cfs) year-round (Horizon Water and Environment 2015).

**Local**

**Santa Clara County General Plan.** The *Santa Clara County General Plan* (Santa Clara County 1994) outlines several policies pertaining to water supply, water quality, and watershed management. These policies were developed to ensure that water quality and quantity are maintained and watershed resources are protected:

**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 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 14** Use and disposal of agricultural chemicals, such as fertilizers, pesticides and herbicides, shall be managed to minimize the threat of water pollution.

**Policy R-RC 18** Comprehensive watershed management plans should be jointly developed to assure that cumulative impacts upon water quality, reservoir operations, and watershed resources are assessed, avoided or adequately mitigated.

**Standards of Significance**

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality;
- Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of the site or area (including through the alteration of the course of a stream or river) in a manner that would result in substantial flooding, erosion or siltation;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows;
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Contribute to inundation by seiche, tsunami, or mudflow.
Impact Analysis

Methodology

Potential short-term and long-term impacts to hydrology and water quality were assessed qualitatively, based on the degree to which the proposed program maintenance activities could result in violations of water quality standards, impairment of beneficial uses, or water quality conditions that could be harmful to aquatic life or human health. Potential temporary and permanent impacts from proposed program maintenance activities were evaluated based on the beneficial uses established by the San Francisco Bay RWQCB.

Environmental Topics Eliminated from Further Analysis

Groundwater Supplies. Implementation of the proposed maintenance program would not utilize groundwater supplies or involve any action that would change the volume or elevation of groundwater aquifers in the program area. There would be no impact on groundwater supply.

Flood Hazards and Housing. The proposed maintenance program does not include the construction or modification of any houses or other structures in a flood hazard area.

Dam Failure. The proposed maintenance activities would occur within the designated 100-year flood zone of many channels within the program area. Program maintenance activities would not result in any reduction of the flood holding or conveyance capacity within the channels maintained, however. On the contrary, maintenance activities would restore SJWC facilities to their operational design and conveyance capacity and would enhance the stability of SJWC dams and intakes. The proposed maintenance activities would therefore reduce the potential for flooding.

The potential for earthquake-induced dam failure in the program area and resultant flooding is considered low based on evaluation of the structural integrity of the dams during the Loma Prieta Earthquake (ABAG 1995; USGS 1993). The proposed maintenance program would implement measures to ensure the integrity of dams in the program area by maintaining intakes, outfalls, and dam faces (e.g., vegetation and burrow management). These management activities at Lake Elsman, Lake Cozzens, Lake Kittredge, and the Lake Ranch Reservoir would reduce the potential risk of flooding from dam failure to people and structures in the program area.

Tsunamis, Seiche, and Mudflow. Because of the distance from San Francisco Bay and because the lowest elevation in the program area is more than 600 feet amsl, the program area is not vulnerable to tsunamis. Seiches could occur in the lakes/reservoirs in the program area and could cause substantial erosion around the lake rim, as well as increase suspended materials in
the water column. The relatively small surface areas of Lake Williams, Lake Elsman, Lake Cozzens, Lake Kittredge, and the Lake Ranch Reservoir (ranging from 3 to 109 acres) render the development of a seiche highly improbable. All ground-disturbing activities would be conducted during the driest period of the year, when lake levels are at their lowest, and in dewatered or dry areas. If an earthquake-induced seiche were to occur during maintenance activities, the proposed program activities would not exacerbate conditions caused by a seiche and workers for the maintenance program would not be at significant risk of being inundated by a seiche because most of the maintenance work at reservoirs is not conducted behind the dam or within the reservoir. The program area has steep slopes and mountainous topography that present an existing mudflow risk to local residents and maintenance program workers. Most program activities would occur in the dry season and would be temporary in nature. Road maintenance and repairs would be conducted to county standards, which include preventing mudflows and mudslides. In the long term, proposed program activities, particularly road and culvert repairs, would minimize the program area’s potential mudflow risks.

**Environmental Impacts**

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES HAVE THE POTENTIAL TO DEGRADE WATER QUALITY (LESS THAN SIGNIFICANT)**

The proposed program’s facility maintenance activities, facility repairs, and vegetation management activities have the potential to violate water quality standards or degrade water quality. The specific proposed maintenance program activities that would pose a water quality threat are discussed below.

**Ground-disturbing Activities.** Ground-disturbing activities such as sediment removal at the Hooker Intake Facility, Lake Elsman emergency culvert outfalls, and culvert repairs present an opportunity for movement of sediment to downstream surface waters in program area. Relocating up to two cubic yards of sediment at the Ostwald, Hendry, Upper and Lower Cavanee, Beardsley, and Trout Intake Facilities would not result in substantial risks for sediment erosion and transport because of the small volume of material that would be moved. Ground-disturbing maintenance work at Hooker Gulch, the Lake Elsman emergency culvert outfalls, and the culvert repair sites would take place during the dry summer months, when there is little risk for sediment erosion and transport.

The proposed program would implement BMP GEN-7 to minimize potential sediment relocation/removal impacts at the program intake facilities by restricting the timing of activities and the type of equipment used. In addition, implementation of BMP GEN-1, BMP GEN-2, BMP GEN-3, BMP GEN-6, and BMP VEG-3, would minimize the area of ground-disturbing activities, limit ground-disturbing activities to dry periods, require appropriate erosion and
sediment control measures, and minimize in-channel vegetation removal. These measures would adequately prevent against erosion and sediment transport during and after proposed program maintenance activities.

**Disturbance of Existing Contamination (Sediment Handling and Disposal).** The program area is largely undeveloped and there are no known hazardous materials sites at the proposed program maintenance sites, as described in Section 3.7, Hazards and Hazardous Materials. Previously unknown hazardous materials sites or hazardous material contamination may be discovered, however, during ground-disturbing maintenance activities such as repair/replacement of culverts, new culvert construction, and erosion stabilization activities. If hazardous levels of contaminants are encountered during maintenance work at a site in a water body, a significant impact on water quality could result.

As described in Chapter 2, Project Description, sediment excavated as part of maintenance efforts would be beneficially reused within the upper Los Gatos Creek Watershed as upland or construction fill. For example, sediment removed from the Hooker Intake Facility would be placed at a nearby upland disposal site that has been used for the same purpose in the past. Placement of fill on land is regulated by the San Francisco Bay RWQCB as a discharge under the Porter-Cologne Act. SJWC would be subject to permit requirements for disposal or beneficial reuse of excavated sediment and would not proceed with sediment removal work until gaining approval from the San Francisco Bay RWQCB.

To ensure that sediment excavation, handling, disposal, or reuse activities would not harm water quality, SJWC would implement BMP GEN-4, BMP GEN-5, BMP GEN-9, and BMP GEN-20. These measures would prevent mobilization of sediment during and after maintenance activities and would require proper disposal of hazardous materials, if encountered. Handling and disposal of spoil materials would be conducted in accordance with federal, state, and local regulations to protect water quality.

**Dewatering Activities.** The installation, operation, and removal of dewatering systems potentially required for the proposed program’s sediment removal/relocation activities at the Hooker Intake Facility and Lake Elsman emergency culvert outfalls could result in water quality impacts. Site dewatering at other proposed maintenance sites is not likely to be necessary because of the lack of water during the summer dry season, when maintenance activities would take place. Installation and removal of flow diversion structures would require disturbance to the streambed and banks, which could result in increased turbidity in the water column and migration of sediment to areas downstream. If not monitored and maintained, temporary instream coffer dams constructed in the channel could fail, releasing sediment, sand, gravel, and water into the work site and downstream. If not monitored and maintained, flow bypass mechanisms could displace sediment at the intake and increase turbidity locally from the discharged water. If not secured properly, the outlet discharge from the bypass pipe could cause
erosion at the release site, also mobilizing sediment. These issues could exceed water quality standards during construction. Implementation of BMP GEN-14 and BMP GEN-16 would minimize impacts on water quality by prescribing measures to ensure that sediment is not transported unnecessarily during dewatering, flow bypass, and flow restoration. These measures would adequately protect water bodies from pollutants related to channel dewatering.

**Accidental Release of Hazardous Materials.** Most of the proposed program’s vegetation management activities would be conducted by hand or with small gas-powered tools such as weed cutters, chainsaws, and power pruners. Proposed sediment removal, road repair, and culvert replacement/repair activities, however, could require the use of heavy machinery, sometimes at the top of channel banks or within the stream channel. Fuel and lubricants such as oil and grease are used in excavation and transportation equipment and vehicles. During sediment removal activities, equipment and worker vehicles would be stored and refueled in staging areas on access roads, adjacent to the stream channel. If hazardous materials (e.g., fuels, oils) were accidentally released directly or indirectly into the stream channel, the sediment and water in and around the work site could be significantly degraded. Fine sediments contained within stream channels are particularly apt at absorbing pollutants such as petroleum products. Water in the channels can transport pollutants downstream and carry them through the soil into underlying groundwater, thus affecting a larger area. Accidental release of maintenance-related hazardous materials would potentially result in a significant impact on water quality.

BMP GEN-5, BMP GEN-8, BMP GEN-10, BMP GEN-12, BMP GEN-13, and BMP GEN-20 would minimize the potential for accidental releases of hazardous materials by requiring appropriate material staging/stockpiling, onsite hazardous materials management, spill prevention and response, vehicle and equipment maintenance and fueling, and work site housekeeping.

**Vegetation Management Effects on Water Temperature.** Proposed vegetation maintenance activities would involve removal of dead, decaying, and hazard trees; weed management with herbicides; and pruning and removal of understory brush in the middle- and upper-story canopy levels. These activities would be implemented along maintenance roads and surrounding water supply facilities such as intakes. Where vegetation management is implemented alongside water bodies, such as at intake facilities on creeks, the canopy shading the water may be exposed to increased sunlight. If shading is completely removed from a creek channel, for example, increased exposure to sunlight may cause water temperatures to increase and exceed Basin Plan water quality objectives (e.g., increase of 5ºF above background conditions). As described in Chapter 2, Project Description, SJWC would develop an annual vegetation management work plan and prioritize sites based on the degree of overgrowth and fire risk, and all work would be conducted to professional arboriculture standards; BMPs VEG-1 and BMP VEG-2 would also be implemented. Vegetation management activities would be selective and targeted. Because of the dense forest canopy developed around each of the proposed program work sites, it is unlikely
that maintenance activities would remove the canopy over stream channels to such an extent that water temperatures would rise increase more than 5 ºF. Furthermore, although not required to reduce this impact a less-than-significant level, the canopy would be restored in accordance with BMPs prescribing revegetation and planting after vegetation management activities are conducted. Therefore, with implementation of these measures, vegetation management activities would not permanently affect water quality and would not exceed water quality objectives.

**Use of Herbicides.** As part of the proposed program’s vegetation management activities, herbicides would be applied in the program area. Accidental release of herbicides or transport of applied herbicides, in stormwater runoff, to local surface waters would pose a significant water quality impact. Implementation of BMP VEG-4 would limit the application areas to outside of the stream channel and open water, restrict the application timing based on weather (rain-event) considerations, require herbicide application consistent with regulatory requirements, and minimize the application area. These measures would adequately protect against potential impacts on water quality from the use of herbicides in the program area.

**Other Construction-Related Pollutants.** Trash and debris from maintenance activities would pose a potential water quality risk if transported to surface waters in the program area. Implementation of BMP GEN-20 would minimize the potential for trash and debris to be transported to waters in the program area by requiring that trash and debris be removed from the work site daily or within 72 hours of work completion.

Therefore, with implementation of BMPs, the proposed program would have less-than-significant adverse impacts to water quality.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES WILL ALTER EXISTING DRAINAGE PATTERNS (BENEFICIAL IMPACT)**

The proposed maintenance program would involve sediment removal, culvert and road crossing improvements, and related activities within existing drainage patterns in the program area’s stream channels and drainages. Without maintenance, sediment accumulation and erosion would increase and degrade site conditions such that flooding could occur, particularly along access roads. Additionally, erosive forces could redirect runoff such that new drainage pathways could be created and cause further damage to access roads, intake facilities, and water quality. The proposed maintenance program would implement routine maintenance activities to prevent runoff flows from causing erosion, siltation, and flooding. Maintenance activities would direct runoff to culverts and drainages and help protect water quality and beneficial uses. In addition, maintenance activities would follow stormwater management BMPs and county guidelines for road maintenance. Implementation of the proposed program would have long-term environmental benefits by minimizing erosion, siltation, and flooding caused by the existing drainage patterns. Therefore, potential impacts would be beneficial.
3.9 Noise

This section describes the existing noise environment in the vicinity of the program area, identifies sensitive receptors, presents relevant noise and vibration regulations, and evaluates potential noise and vibration impacts of the proposed program. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning noise impacts were received during the NOP process.

Environmental Setting

Noise Background. Noise is defined simply as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), with 0 dB corresponding approximately to the threshold of human hearing and 120–140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum (20–20,000 Hertz [Hz]). As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear’s decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).

Noise Exposure and Community Noise. An individual’s noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. However, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

- \( L_{\text{eq}} \): the equivalent sound level is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value. The \( L_{\text{eq}} \) is the constant sound level that would contain the same acoustic energy as the varying sound level during the same time period (i.e., the average noise exposure level for the given time period).
3.0 Environmental Effects

- **L_{max}**: the instantaneous maximum noise level for a specified period of time.

- **L_{dn}**: the 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night (i.e., “penalizing” nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noise.

**Effects of Noise on People.** The effects of noise on people can be placed in three categories:

- Subjective effects such as annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants may experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called “ambient noise” level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 2009):

- It is widely accepted that the average healthy ear can barely perceive a noise level change of 3 dBA.
- A change in noise level of 5 dBA is a readily perceptible increase in noise level.
- A 10-dBA change is perceived as twice as loud as the original source.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. Sound level is measured in decibels, and the decibel scale is logarithmic rather than linear. Thus, two noise sources do not combine in a simple linear fashion, but rather logarithmically. For example, if two identical noise sources produce simultaneous noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

**Noise Attenuation.** Stationary-point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (or lessen) at a rate of 6–9 dBA per doubling of distance from the source, depending on environmental conditions (e.g., atmospheric conditions and noise barriers, either vegetative or manufactured).
**Vibration Background.** Groundborne vibration propagates from the source through the ground to adjacent buildings by means of surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hz. Most environmental vibrations consist of a composite, or spectrum, of many frequencies. The normal frequency range of most groundborne vibrations that can be felt generally starts from a low frequency of less than 1 Hz and extends to a high of about 200 Hz. Vibration information for this analysis has been described in terms of peak particle velocity, measured in inches per second, or the vibration level measured with respect to root mean square vibration velocity in decibels, with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with increasing distance away from the source. Groundborne vibration generally is limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Motor vehicles rarely create enough groundborne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events occur or the greater their duration, the more annoying the vibration becomes.

**Existing Noise Environment**

The program area includes some small unincorporated communities with schools, churches, lodging, and single-family rural residences. In addition, the area includes vineyards, parklands, and open space areas. State Route 17, which runs through the middle of the program area, is a major roadway with a substantial amount of traffic noise. In addition, the Montevina Water Treatment Plant is located along State Route 17 and at the northern end of the Lexington Reservoir; the plant also serves as a source of noise because of its operations.

The existing noise environment in the program area is attributed to various stationary and mobile sources. These include noise originating from regional roadway traffic, local vehicular and truck traffic, and the operation of stationary and mobile noise sources associated with the unincorporated communities and local agricultural activities. Other, less prevalent sources of noise that contribute to the existing noise environment in the program area are landscaping activities (e.g., leaf blowing, lawn mowing) and equipment associated with maintaining nearby open space/recreational lands.
Sensitive Receptors

Some land uses and their occupants are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, places of worship, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are considered to be more sensitive to noise than are commercial and industrial land uses. Sensitive receptors in the vicinity of the program area include rural residents and occupants of a few places of worship, schools, and lodges scattered throughout the upper Los Gatos Creek Watershed. Maintenance activities would occur mostly along creeks, access roads, culverts, and SJWC-owned dam facilities.

Regulatory Setting

Federal

Federal Highway Administration Noise Criteria. In accordance with 40 CFR, Part 205, Subpart B, the Federal Highway Administration has established noise limits for medium- and heavy-duty trucks (more than 4.5 tons gross vehicle weight rating). The federal truck pass-by noise standard is 80 dBA at 15 meters (approximately 49.2 feet) from the vehicle pathway centerline. These standards are implemented through regulatory controls on truck manufacturers.

Federal Transit Administration Noise and Vibration Guidelines. The Federal Transit Administration (FTA) has established guidelines on noise and vibration impact assessments for construction and maintenance equipment. The guidelines contain procedures for assessing impacts at different stages of project development, with a focus on noise and vibration impacts during operations; however, construction impacts are also covered (Federal Transit Administration 2006).

State

California Department of Transportation Noise Criteria. Caltrans establishes noise limits for vehicles licensed to operate on public roads. For heavy-duty trucks, the Caltrans pass-by standard is consistent with the federal limit of 80 dBA at 15 meters (49.2 feet) from the roadway centerline. The Caltrans pass-by standard for light-duty trucks and passenger cars (less than 4.5 tons gross vehicle weight rating) is also 80 dBA at 15 meters (49.2 feet) from the centerline. These standards are implemented through regulatory controls on vehicle manufacturers and through legal sanction of vehicle operators by state and local law enforcement officials.
California Noise Insulation Standards. Title 24 CCR establishes noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise, collectively known as the California Noise Insulation Standards. The noise insulation standards set forth an interior standard of 45 dBA $L_{dn}$ in any habitable room. The standards require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA $L_{dn}$. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Local

Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans, and noise ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are generally considered to be the most sensitive type of land use to noise, and industrial/commercial areas are generally considered to be the least sensitive.

Santa Clara County Code of Ordinances. Local noise ordinances typically set forth standards related to construction activities, nuisance-type noise sources, and industrial property line noise levels. Noise regulations and standards that apply to land uses within the unincorporated portions of Santa Clara County are provided below.

Section B11-154(b)(6) of the Santa Clara County Code of Ordinances applies to construction and demolition, which encompass the work associated with the proposed program maintenance activities. This section of the code specifies that, where technically and economically feasible, construction activities will be conducted in a manner such that the maximum noise levels at affected properties will not exceed those levels specified in Table 22, Santa Clara County Code of Ordinances Noise Standards.

Section B11-154(b)(7) of the Santa Clara County Code of Ordinances applies to vibrations. This section prohibits vibration as follows:

- Vibration. Operating or permitting the operation of any device that creates a vibrating or quivering effect that:
  - Endangers or injures the safety or health of human beings or animals; or
  - Annoys or disturbs a person of normal sensitivities; or
  - Endangers or injures personal or real properties.
## Table 22  Santa Clara County Code of Ordinances Noise Standards

<table>
<thead>
<tr>
<th>Timing</th>
<th>Single- and Two-Family Dwelling Residential Area</th>
<th>Multifamily Dwelling Residential Area</th>
<th>Commercial Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily except Sundays and legal holidays, from 7:00 a.m. to 7:00 p.m.</td>
<td>75 dBA (mobile equipment) 60 dBA (stationary equipment)</td>
<td>80 dBA (mobile equipment) 65 dBA (stationary equipment)</td>
<td>85 dBA (mobile equipment) 60 dBA (stationary equipment)</td>
</tr>
<tr>
<td>Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays</td>
<td>50 dBA</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
</tbody>
</table>

**Source:** Santa Clara County Code of Ordinances Section B11-154 (b)(6)

**Note:** “Mobile” equipment is defined as less than 10 days of operation; “stationary” equipment is operated for periods greater than 10 days.

### Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on noise and vibration if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (specific thresholds are provided in the impact analysis below);
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels (specific thresholds are provided in Table 22 above);
- Result in a substantial permanent increase in ambient noise levels in the proposed Project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the proposed project vicinity above levels existing without the project;
- Be located within the jurisdiction of an airport land use plan or, where such a plan has not been adopted, be located within 2 miles of a public airport or public use airport such that the proposed project would expose people residing or working in the proposed project area to excessive noise levels; or
- Be located within the vicinity of a private airstrip, such that the proposed project would expose people residing or working in the proposed project area to excessive noise levels.
Impact Analysis

Methodology

Noise Analysis. Maintenance activity noise sources would include various pieces of heavy equipment and other machinery. To establish an approximate estimate of noise levels, the FTA recommends that the noisiest two pieces of equipment be used to analyze the anticipated noise levels at sensitive receptors, assuming the following:

- full power operation for a full 1 hour,
- no obstructions to the noise travel paths,
- typical noise levels from construction equipment, and
- all pieces of equipment operate at the center of the work area.

Using these simplifying assumptions, the noise levels at specific distances can be obtained using the following equation:

$$L_{eq\ (equip)} = EL_{50ft} - 20 \log_{10} (D/50)$$

Where:

- $L_{eq\ (equip)}$ = the noise emission level at the receiver at distance D over 1 hour.
- $EL_{50ft}$ = noise emission level of a particular piece of equipment at a reference distance of 50 feet.
- $D$ = the distance from the receiver to the piece of equipment, in feet.

To add the two noisiest pieces of equipment together, the following equation applies:

$$L_{total} = 10 \log_{10} (10^{L_1/10} + 10^{L_2/10})$$

Where:

- $L_{total}$ = the noise emission level of two pieces of equipment combined.
- $L_1$ = the noise emission level of equipment type 1.
- $L_2$ = the noise emission level of equipment type 2.
These equations were used to compare proposed program maintenance activities to the noise emission limits established by the county. The following assumptions were used to evaluate noise effects of proposed program maintenance activities:

- While the above calculations apply to maintenance equipment, truck traffic to and from the maintenance work sites could also create additional noise for residences and commercial establishments located along haul routes.

- Using typical equipment noise emission levels from Table 12-1 of FTA’s *Transit Noise and Vibration Impact Assessment* (Federal Transit Administration 2006), the two noisiest pieces of equipment used for SJWC’s maintenance activities would be a heavy truck and excavator/bulldozer.

- Using the equations described above, the estimated distance between the maintenance work site and the nearest sensitive receptors would need to be at least 274 feet to meet the single-family residence mobile daytime standard of 75 dBA and 1,538 feet to meet the stationary daytime standard of 60 dBA.
  - Three maintenance sites are located closer than 274 feet to a residence: Hooker Bypass Road culvert (site H1), Ellege Road culvert (site E3), and Cathermola Road culvert (site C20).
  - One culvert maintenance site (M1) is located approximately 1,530 feet from a residence.
  - At all other work areas, the nearest sensitive receptor is located more than the minimum distance for mobile daytime activity.

- It was assumed that most work would not take longer than 10 days at any one maintenance site.

**Vibration Analysis.** Construction activity associated with the operation of heavy equipment and vibratory pile driving may generate localized groundborne vibration and noise. Vibration from ground-disturbing construction activity is typically below the threshold of perception when the activity is more than 50 feet from the receiver. The impact of vibratory pile driving could affect nearby buildings and sensitive receptors. Based on methods described by the Federal Transit Administration (2006), the vibration levels at specific distances can be calculated using the following equation:

\[
L_{eq}(\text{equip}) = EL_{50ft} - 20\log_{10}(D/50)
\]

Using the most sensitive building types and land use categories, the peak particle velocity would have to exceed 0.12 inch per second and the \( L_{eq} \) would have to exceed 65 VdB to result in any
building damage or vibrational disturbances. For industrial buildings, the peak particle velocity would have to exceed 0.5 inch per second to result in any building damage or vibrational disturbances (Caltrans 2009). The typical annoyance level for single-family residences is 78 VdB.

Potential vibration from proposed program maintenance activities was evaluated using the following assumptions:

- Using typical equipment noise emission levels from Table 12-2 of FTA’s *Transit Noise and Vibration Impact Assessment* (Federal Transit Administration 2006), the pieces of equipment that would produce the greatest vibration would be the truck and excavator/bulldozer.

- Using the equations described above, the estimated distance between the maintenance activity area and the nearest sensitive receptors would need to be at least 50 feet to meet the annoyance level threshold of 78 dBA.

- The distance between each maintenance site and the nearest building would need to be at least 21 feet to meet the building vibration level threshold of 0.12 inch per second.

- No maintenance sites have sensitive receptors or buildings within these distances.

**Environmental Topics Eliminated from Further Analysis**

**Airport Proximity.** Because the program area is not located near an airport or airstrip, the significance criteria pertaining to airport land use plans, airports, and airstrips are not applicable to this proposed program.

**Environmental Impacts**

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES MAY GENERATE NOISE LEVELS THAT EXCEED NOISE ORDINANCE STANDARDS (LESS THAN SIGNIFICANT)**

The noisiest equipment associated with program maintenance activities are trucks and excavators/bulldozers. FTA’s noise assessment guidance (Federal Transit Administration 2006) was applied to evaluate potential effects of this equipment on sensitive receptors (single-family residences). Based on the calculations described in the methodology section, sensitive receptors located less than 274 feet from program maintenance work sites could be subjected to noise levels that exceed the Santa Clara County Noise Ordinance standard for daytime mobile and stationary sources of 75 dBA. Sensitive receptors located farther away would be exposed to estimated noise levels below the Santa Clara County Noise Ordinance standards for daytime mobile- and stationary-source noise levels.
Noise levels from program maintenance activities may exceed Santa Clara County Noise Ordinance levels at the following culvert maintenance sites: Hooker Bypass Road culvert (site H1), Ellege Road culvert (site E3), and Cathermola Road culvert (site C20). These maintenance sites would be located less than 274 feet from single-family residences. All other maintenance activities would meet Santa Clara County Noise Ordinance levels based on the location of the nearest sensitive receptor (assumed to be a single-family residence).

BMP GEN-19 will be required as part of the program and will ensure the minimization of noise disturbances to residential areas. This BMP will require work to be conducted on weekdays between 8:00 AM and 5:00 PM. Advance notification will be provided one week before the start of construction to adjacent properties within 275 feet of a proposed maintenance site where heavy equipment will be used. Powered equipment will be equipped with mufflers and excessive idling of vehicles will be prohibited. With implementation of these measures, potential impacts would be less than significant.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES HAVE THE POTENTIAL TO EXPOSE PERSONS TO EXCESSIVE GROUNDBORNE VIBRATION AND GROUNDBORNE NOISE (LESS THAN SIGNIFICANT)**

Proposed maintenance activity equipment associated with the greatest groundborne vibration and groundborne noise levels are trucks and excavators/bulldozers. FTA’s vibration assessment guidance (Federal Transit Administration 2006) was applied to evaluate potential effects of this equipment on buildings and nearby sensitive receptors. Based on the calculations described in the methodology section, groundborne vibration and groundborne noise levels are estimated to meet both FTA’s building threshold and human annoyance threshold at distances of 21 feet and 50 feet, respectively.

No buildings or residences are present at these distances from proposed program maintenance activities. Thus, the impact of program-related groundborne vibration and groundborne noise would be less than significant.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES HAVE THE POTENTIAL TO RESULT IN TEMPORARY INCREASES IN AMBIENT NOISE LEVELS (LESS THAN SIGNIFICANT)**

No new permanent sources of noise are proposed under the program; all maintenance activities would be temporary and are estimated to extend for less than 10 days in any given location.

Noise associated with program maintenance activities would not substantially increase existing ambient noise levels in most areas of the upper Los Gatos Creek Watershed. The noise levels
would be temporary and not continuous. In any given work day, construction equipment used would generate short bursts of noise followed by periods of no noise. Thus, a time-weighted cumulative noise exposure level would be substantially lower than the short-term noise levels estimated to be generated by maintenance equipment. The cumulative noise levels generated by maintenance activities would not result in a substantial increase in ambient noise levels.

As previously described, maintenance activities would temporarily result in an increase in existing ambient noise levels at residences near the Hooker Bypass Road culvert (site H1), Ellege Road culvert (site E3), and Cathermola Road culvert (site C20). BMP GEN-19 would apply, reducing potential impacts. With implementation of these measures, potential impacts would be less than significant.

### 3.10 Public Services and Utilities

This section discusses the existing conditions, regulatory setting, and effects of the proposed program related to public services and utilities. Public services are police and fire services, emergency services, and solid waste services; utilities are underground and overhead utilities, including water supply, energy resources (electricity and natural gas), and telecommunications. Refer to Section 3.8, Hydrology and Water Quality, for a discussion of stormwater management issues. For analysis of potential impacts on parks and other recreational uses, refer to Section 3.11, Recreation. The proposed maintenance program would have no effect on schools or wastewater services, and these topics are therefore not discussed further in this section. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning public service or utility impacts were received during the NOP process.

**Environmental Setting**

**Police Protection**

Law enforcement and public safety services in the program area are provided by county departments. The Santa Clara County Sheriff’s Department is the primary law enforcement agency for unincorporated areas of the county. The Sheriff’s Department also provides law enforcement services for the Santa Clara County Parks Department. The California Highway Patrol, whose jurisdiction includes state highways (i.e., State Route 17) and roads in unincorporated areas of the county, also provides law enforcement and emergency assistance in the program area.
**Fire Protection**

The Santa Clara County Fire Department provides fire, safety, and hazardous materials services for approximately 100 square miles throughout developed and unincorporated portions of the county, including the program area. The Fire Department operates 15 fire stations and employs more than 288 fire prevention, suppression, investigation, administration, and maintenance personnel.

Medical support for 911 emergencies and police and fire services in the county are provided by Santa Clara County Ambulance.

**Solid Waste**

Five permitted and active Class III landfills are located in Santa Clara County. All of the landfills listed in Table 23, Landfill Capacities in Santa Clara County, process compostable yard waste except the Zanker Material Processing Facility.

**Water Supply**

As stated in the Los Gatos Creek Watershed Maintenance Program Manual (Appendix A), during average rainfall years, surface runoff from the Los Gatos Creek Watershed provides approximately 10 percent of SJWC’s net annual water supply. The SJWC service area covers approximately 140 square miles and serves a population of approximately one million people in greater San Jose and Santa Clara County. SJWC serves residential, municipal, industrial, and business water customers as well as residential fire services and other water companies.

SJWC’s primary facilities in the watershed are reservoirs and impoundments where water is stored; intakes where water is diverted out of stream channels; pipelines where water is conveyed to the treatment plant sited near the Lexington Reservoir, where watershed-derived water is treated before distribution. Due to the limited development of the program area, nearly all of the raw water from the Los Gatos Creek Watershed serves users downstream of the Lexington Reservoir. Raw water and treated water pipelines owned by SJWC convey water throughout the watershed. Residents within the program area meet their water supply needs through privately owned wells.

**Energy Resources**

Pacific Gas and Electric Company (PG&E) provides natural gas and electricity to most of northern California, including the program area. PG&E produces and purchases electricity from both renewable and nonrenewable resources, with power derived from fossil fuels and nuclear
and hydroelectric sources. PG&E has an electricity generation portfolio that totals 6,000 megawatts. As of 2006, 44 percent of this power derived from hydroelectric resources, 54 percent from the Diablo Canyon nuclear power plant, and two percent from fossil fuels (PG&E 2014).

### Table 23  Landfill Capacities in Santa Clara County

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Maximum Permitted Throughput (tons per day)</th>
<th>Maximum Permitted Capacity (cubic yards)</th>
<th>Remaining Capacity (cubic yards)</th>
<th>Estimated Closure Date</th>
<th>Waste Types Accepted/Permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newby Island Sanitary Landfill</td>
<td>4,000</td>
<td>50,800,000</td>
<td>18,274,953</td>
<td>June 2025</td>
<td>Construction/demolition, industrial, mixed municipal, sludge (biosolids), tires, green materials, contaminated soil</td>
</tr>
<tr>
<td>Kirby Canyon Recycling and Disposal Facility</td>
<td>2,600</td>
<td>36,400,000</td>
<td>57,271,507</td>
<td>December 2022</td>
<td>Mixed municipal, industrial, construction/demolition, tires, green materials</td>
</tr>
<tr>
<td>Guadalupe Sanitary Landfill</td>
<td>1,300</td>
<td>28,600,000</td>
<td>11,055,000</td>
<td>January 2048</td>
<td>Construction/demolition, mixed municipal, industrial, green materials</td>
</tr>
<tr>
<td>Zanker Road Class III Landfill</td>
<td>1,300</td>
<td>1,300,000</td>
<td>700,000</td>
<td>August 2014</td>
<td>Construction/demolition, green materials, industrial, tires</td>
</tr>
<tr>
<td>Zanker Material Processing Facility</td>
<td>350</td>
<td>540,100</td>
<td>540,100</td>
<td>December 2018</td>
<td>Construction/demolition, other designated waste</td>
</tr>
</tbody>
</table>

*Source:* California Department of Resources Recycling and Recovery (CalRecycle) 2016

*Note:* Class III landfills accept material that is contaminated and classified as non-commercial, commercial, or industrial waste.
Although most of the program area is undeveloped, several residential communities and isolated residences are scattered throughout the watershed. PG&E’s underground natural gas pipelines and overhead electrical lines provide service to these residences. If not visibly apparent, the location of these lines within work sites can be determined through coordination with SJWC, the County utility department, and PG&E.

**Telecommunications**

Santa Clara County is served by multiple telecommunications companies, including AT&T, Pacific Bell, Sprint, and others. Some overhead telecommunications lines traverse portions of the program area.

**Regulatory Setting**

**State**

**California Integrated Waste Management Act.** To conserve water, energy, and other natural resources and to protect the environment by reducing the incineration or landfill disposal of waste, the California Integrated Waste Management Act of 1989 requires cities and counties to reduce, reuse, and recycle (including composting) solid waste generated in the state to the maximum extent feasible. The act requires development of countywide integrated waste management plans. A countywide integrated waste management plan must include elements that address source reduction and recycling, household hazardous waste, and non-disposal facilities for the county and each city within the county.

The California Integrated Waste Management Act is overseen by the California Department of Resources Recycling and Recovery (CalRecycle). Partnering with local governments, industries, and the public, CalRecycle has developed strategic directives to reduce waste generation and landfill disposal; decrease GHG emissions; promote the highest and best use of materials; combat illegal dumping and remediate illegal dump sites; and regulate the handling, processing, and disposal of solid waste (CalRecycle 2009). All of these strategic directives support the California Global Warming Solutions Act of 2006.

**California Utility Notification Requirements.** Title 8 California Code of Regulations Section 1541 requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electricity, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) before opening an excavation.

California law (California Government Code § 4216 et seq.) requires owners and operators of underground utilities to become members of and participate in a regional notification center,
such as Underground Service Alert – Northern California (USA North). USA North receives reports of planned excavations from public and private parties and transmits the information to all participating members that may have underground facilities at the location of an excavation. USA North members mark or stake their facilities, provide information, and give clearance to dig (USA North 2016).

Local

Santa Clara County General Plan. The County General Plan Health and Safety Chapter, Parks and Recreation (Part 2, Chapter G), contains several policies relevant to public services and utilities (SCC 1994). The county officially adopted a countywide trails master plan as part of the General Plan; it outlines design standards and considerations to ensure access for emergency vehicles, wildfire suppression, proper drainage, culvert installation, and erosion control on all county trails (SCC 1995).

The Santa Clara County General Plan also includes several policies on solid waste disposal in the Resource Conservation Chapter, Solid Waste Management (Part 2, Chapter H):

Policy C-RC 63   Santa Clara County shall strive to reduce the quantity of solid waste disposed of in landfills and to achieve or surpass the requirements of state law.

Policy C-RC 64   Countywide 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 “Zero Waste 2020 Vision.” The county developed the “Zero Waste 2020 Vision” to encourage local governments to adopt policies and develop plans that motivate community members to eliminate waste. This vision statement and action plan were developed to provide county jurisdictions with a working document that could be used to guide decision-making policies and programs toward achieving zero waste by 2020 (Santa Clara County 2010).

The county’s vision is that, by 2020, all discarded materials in the county will be recovered for their highest and best use, and no materials will be sent to landfills or incinerators. Implementation of Zero Waste actions to achieve the county’s vision is based on the following guiding principles:
3.0 **Environmental Effects**

- Waste Reduction: Reduce the Amount of Materials to be Managed; and
- Recycling and Composting: Manage Materials to Minimize Environmental Impacts Downstream, as follows:
  1. All organic materials shall be recovered and productively used;
  2. Recovered materials shall be directed to their highest and best use; and
  3. Materials sent to landfill shall be minimized.

The county encourages local governments to ensure that construction and demolition debris is sent to a facility that can recover the materials.

**Standards of Significance**

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on public services and utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
  - Police protection
  - Fire protection
  - Other public facilities
- Have insufficient water supplies available to serve the proposed Project from existing entitlements and resources, or require new or expanded entitlements;
- Be served by a landfill with insufficient permitted capacity to accommodate the proposed Project’s solid waste disposal needs; or
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

According to Appendix F of the CEQA Guidelines, it is also appropriate to evaluate the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Accordingly, the program would cause a significant impact related to energy conservation if it would:

- Fail to include means for avoiding or reducing wasteful and/or unnecessary consumption of energy.
Impact Analysis

Methodology

Potential impacts of the program were evaluated qualitatively based on the potential for the proposed maintenance activities to disrupt existing public services and utilities systems, resulting in an environmental impact. These activities were identified and evaluated as temporary, short-term impacts; no long-term impacts of the program on public services and utilities were identified.

Environmental Topics Eliminated from Further Analysis

Performance of Public Services and Utilities. The proposed program would not involve construction of any new facilities or involve any long-term activities that would result in increased demand for police, fire, or other public services. The primary goal of the program is to maintain water supply facilities and access to those facilities.

Sediment removal from the impoundments and other ground-disturbing activities would generally occur in areas void of underground utilities and pipelines. Culvert maintenance activities would occur on private access roads and would involve excavation work that could potentially disrupt existing underground utility lines. Before undertaking any excavation activities, SJWC would coordinate with internal sources and outside utility companies to confirm locations of underground communication lines and water supply pipelines.

Vegetation management activities would have the potential to affect overhead utility lines during the removal or pruning of vegetation, particularly trees. Overhead utility lines would be visible to maintenance personnel and would be avoided appropriately.

Environmental Impacts

IMPACT: PROGRAM MAINTENANCE ACTIVITIES WOULD BENEFICALLY SUPPORT WATER SUPPLY AND DISTRIBUTION FACILITIES (BENEFICIAL)

The goals of the program are to protect the quality of SJWC's source water supplies in the upper Los Gatos Creek Watershed; maintain the structural and functional integrity of SJWC facilities in the upper Los Gatos Creek Watershed; and reduce reliance on imported water supplies by keeping local supplies available. The program would not involve construction of new or expanded water supply facilities or include construction of new housing or other facilities that demand water supply.
Maintenance activities would ensure continued operation of SJWC’s water supply and distribution facilities in the program area and would benefit water resources downstream, such as SCVWD’s Lexington Reservoir and water supply system. The impact on water supply, distribution facilities, and water quality would therefore be a beneficial impact of the program.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES WOULD CONTRIBUTE DEBRIS TO LANDFILL CAPACITY (LESS THAN SIGNIFICANT)**

Solid waste generated by program maintenance activities would include excavated sediment from behind intakes, vegetative debris from vegetation management activities, and debris generated by culvert replacement/repairs and access road maintenance.

Most of the sediment removed from behind intakes would be placed immediately downstream of the intake weir and allowed to continue to migrate downstream in the creek channel. Annually, less than two cubic yards of sediment are relocated at intakes. Minimal sediment removal (a maximum of one cubic yard) would also occur at spring diversion boxes near Lake Kittredge and the Ostwald Intake Facility. The Hooker Intake Facility is the one exception. At the Hooker Intake Facility, 250–661 cubic yards of sediment would be removed from behind the intake and reused as road grading material or disposed of at an upland location. Removed sediment would remain in the sub-watershed. The proposed upland disposal site is an upland meadow located approximately 500 feet east of the Hooker Intake Facility. Removing sediment from the Hooker Intake Facility and disposing of it at an upland location would require approval from federal, state, and local regulatory agencies. Potential effects and regulatory compliance requirements for the proposed upland sediment disposal are discussed in Section 3.3, Biological Resources; Section 3.7, Hazards and Hazardous Materials; and Section 3.8, Hydrology and Water Quality.

Vegetative debris, such as trimmed branches, from vegetation management activities would be chipped and spread onsite. Hazard trees, and downed trees and logs would be left onsite and relocated to avoid impact on downstream facilities and property; trees and logs would be left onsite to provide habitat where possible. Excess soil generated during culvert maintenance work would also be reused throughout the watershed with proper erosion controls in place. No vegetative debris or excess soils would be disposed of at a landfill.

Metal and wood debris associated with culvert replacement and repairs would be sorted and reused or recycled at one of the county landfills, all of which accept construction and demolition debris. Recycling of this debris would not exceed local landfill capacity.

In conclusion, the program would not require a substantial amount of debris disposal at a landfill. Because sufficient capacity is remaining at nearby landfills and the amount of debris requiring disposal would be small, effects on landfill capacity would be minimal. The proposed program would comply with statutes and regulations related to solid waste disposal, as described
in Section 3.3, Biological Resources, Section 3.7, Hazards and Hazardous Materials, and Section 3.8, Hydrology and Water Quality, of this EIR. Therefore, the impact on landfill capacity would be less than significant.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES WOULD REQUIRE CONSUMPTION OF ENERGY (LESS THAN SIGNIFICANT)**

The program would require the use of fuels (primarily gasoline, diesel, and motor oil) for various maintenance activities, including vehicle travel, sediment removal at the Hooker Intake Facility, culvert maintenance, and new culvert installation. Fuel for construction worker commute trips would be minimal when compared to the fuel used by construction equipment and for hauling. Because maintenance work would vary from year to year, the precise amount of energy consumption required by the program is uncertain. However, considering the relatively short durations of the various maintenance activities and implementation of various mitigation measures and BMPs, this impact would be less than significant.

**3.11 Recreation**

This section presents an overview of recreational resources adjacent to proposed maintenance sites and elsewhere within the program area and a discussion of the program’s environmental impacts associated with the recreation resources. This section also summarizes regulations and policies related to recreation and evaluates the potential impacts of the program on recreational resources. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2105). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

Comments concerning recreational impacts were received from Santa Clara County Parks Department during the NOP process requesting that the EIR consider potential impacts to trails within the *Santa Clara County Countywide Trails Master Plan* and the proposed program’s overall consistency with this countywide trails plan. Potential impacts are included in the analysis of this EIR section and Chapter 4, Other CEQA Requirements, includes a discussion of program’s consistency with the countywide trails plan.

**Environmental Setting**

Approximately 62 percent of the watershed is open space land owned by Mid-peninsula Regional Open Space District, SCVWD, and the county, with a large portion of this area
available for recreational use. Recreational areas include the Lexington Reservoir County Park, which is owned by SCVWD and managed by the Santa Clara County Parks Department; four open space preserves operated by Mid-peninsula Regional Open Space District: Bear Creek Redwoods Open Space Preserve, Felton Station Open Space Preserve, El Sereno Open Space Preserve, and the Sierra Azul Open Space Preserve; and Sanborn County Park, which is operated by the Santa Clara County Parks Department.

No routine maintenance activities would occur in any of the open space preserves; therefore, they are not discussed further. Recreational uses at the county parks and other trails and access roads are described below.

**Lexington Reservoir County Park**

Lexington Reservoir County Park encompasses 914 acres of park land and reservoir and is located just south of Los Gatos. The land is owned by SCVWD but the park is managed by the Santa Clara County Parks Department. Recreational activities include non-power and electric motor boating, picnicking, fishing, bicycling, jogging and hiking. Gasoline and diesel-powered boats, swimming, and wading are not allowed in the Lexington Reservoir. Most of the reservoir's recreational amenities, including multi-use trails, are located north of the reservoir (Santa Clara County 2014a).

**Sanborn County Park**

Sanborn County Park is located northwest of the Lexington Reservoir off of Sanborn Road, south of Saratoga. It is owned and operated by the County Parks Department. Sanborn County Park covers approximately 3,688 acres and contains more than 15 miles of trails. The Lake Ranch Reservoir is located in the central portion of the park. Recreational activities at Sanborn County Park include hiking, picnicking, camping, and fishing. The park contains an outdoor amphitheater, family campsites, and water and electric RV hook-ups. No swimming is allowed in the Lake Ranch Reservoir. The John Nicholas Trail is a designated public trail within the park, approximately 2.5 miles long, and is accessible from both Black Road and Sanborn Road. The trail connects the Skyline Trail and the Lake Ranch Reservoir and is part of the Bay Area Ridge Trail and the Juan Bautista de Anza National Historic Trail. This multiple-use trail is available for use by hikers, bikers, and equestrians; no vehicle access is allowed. The trail entrance at Black Road provides parking for three or four cars.

Proposed program facilities located in Sanborn County Park are the Lake Ranch Reservoir, Beardsley Intake Facility, and 25 culvert maintenance sites along the John Nicholas Trail.
**Other Trails and Access Roads**

There are numerous paved and non-paved, private access roads throughout the program area. Most of these access roads are gated and not intended for public access but some are open to the public. Although these roads are not formal public recreational trails, non-gated roads are known to be used by the local community for a variety of recreational activities, including walking, jogging, biking, dog-walking, and bird watching.

**Regulatory Setting**

**Local**

**Santa Clara County General Plan.** The *Santa Clara County General Plan’s* recreation policies are contained in the Parks and Recreation Chapter of Part 3: Rural Unincorporated Area Issues and Policies (Santa Clara County 1994). The following recreation policies are relevant to the proposed program:

**Policy R-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 clear relationship of elements, using scenic roads, bikeways and trails as important linkages; and

d) Give structure and livability to the urban community.

**Policy R-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 R-PR-5** Water resource facilities, utility corridors, abandoned railroad tracks, and reclaimed solid waste disposal sites should be used for compatible recreational uses, where feasible.
Policy R-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 R-PR-11  Park planning and development should take into account and seek to minimize potential impacts on adjacent property owners.

Strategic Plan – Santa Clara County Parks and Recreation System. The Santa Clara County Parks Department strategic plan was developed to accomplish the following purposes: to identify and prioritize outdoor recreation values and needs; strategically direct department activities to provide for outdoor recreation needs in a way that respects fiscal, human, and natural resources; and identify how the department’s existing funding may be augmented to ensure that the county’s parks system continues to be an important contributor to the quality of life for county residents. The strategic plan estimates that Sanborn County Park is operating below capacity (Horizon Water and Environment 2015).

Sanborn County Park Trails Master Plan. The Sanborn County Park Trails Master Plan, adopted in 2008, defines an expanded trail system to meet the changing recreational needs of county residents. Sanborn County Park is operating below its visitor capacity, and the Sanborn County Park Trails Master Plan identifies opportunities to attract and serve more park visitors. The master plan proposes to double the length of the existing 19-mile trail system, which currently accommodates hikers and equestrians. The John Nicholas Trail shares the same trail alignment as two regional trails: the Bay Area Ridge Trail and the Juan Bautista de Anza National Historic Trail. The master plan identifies a potential trail segment that would connect the John Nicholas Trail to other multi-use trails east of the Lake Ranch Reservoir (Santa Clara County 2008).

Standards of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on recreational 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.
Impact Analysis

Environmental Topics Eliminated from Further Analysis

Recreational Facility Construction. The program does not include recreational facilities or require the construction or expansion of recreational facilities that could have an adverse physical effect on the environment.

Environmental Impacts

IMPACT: PROGRAM MAINTENANCE ACTIVITIES MAY DISRUPT USE OF EXISTING PARKS OR RECREATIONAL FACILITIES (NO IMPACT)

Twenty-five culvert maintenance and repair sites are proposed by the maintenance program along the John Nicholas Trail in Sanborn County Park. Program activities at these sites would not result in permanent removal or deterioration of this trail. Culverts would be repaired or replaced to provide adequate drainage and prevent trail erosion, thereby improving the overall conditions of the trail. Following coordination with the Santa Clara County Parks and Recreation Department, access to sections of the trail may be closed temporarily for up to a three-week period once per year for the first two to three years of the ten year maintenance program. During this three-week period, the identified culverts along the trail would be repaired. Short-term closure of this trail may also temporarily increase use of other nearby recreational facilities.

Given the number of alternative recreational facilities in the vicinity of the program area (e.g., other trails in Sanborn County Park, Lexington County Reservoir Park, and Sierra Azul Open Space Preserve) and relative underutilization of Sanborn County Park, potential impacts related to disrupted use of the park and increased use of other nearby recreational facilities would not be substantial and would not result in physical deterioration of these other recreational facilities.

3.12 Traffic

This section summarizes the environmental and regulatory setting related to traffic in the context of the proposed maintenance program. This section also presents the impact methodology and evaluates the potential traffic impacts associated with the program. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2105). Additionally, referenced program BMPs are thoroughly described in Appendix A, Los Gatos Creek Watershed Maintenance Program Manual.

No comments concerning traffic impacts were received during the NOP process.
Environmental Setting

Regional Access

U.S. Highway 101 (U.S. 101) is a north-south freeway traversing Santa Clara County from south of Gilroy to north of Palo Alto through downtown San Jose and Mountain View. The freeway includes four mixed-flow lanes in each direction, including high-occupancy vehicle lanes, also known as diamond or carpool lanes, that restrict use to vehicles with two or more persons (carpools, vanpools, and buses) or motorcycles during the peak morning (5:00 a.m. to 9:00 a.m.) and evening (3:00 p.m. to 7:00 p.m.) commute periods. Northbound U.S. 101 is the peak commute direction in the morning, and southbound U.S. 101 is the peak commute direction in the evening.

I-280 is a north-south freeway extending from the U.S. 101 interchange in San Jose north to San Francisco, extending between approximately Alpine Road in Palo Alto and U.S. 101 in San Jose through Cupertino. East of the U.S. 101 interchange, I-280 becomes I-680. The freeway includes four or five mixed-flow lanes in each direction, including HOV lanes north of the I-280/I-880/State Route 17 interchange. Northbound I-280 is the peak commute direction in the morning, and southbound I-280 is the peak commute direction in the evening.

I-880 is a north-south freeway extending from San Jose at the I-280/I-880/State Route 17 interchange to Oakland, entering the county from the north at the northern Milpitas city limit. This freeway includes three or four mixed-flow lanes in each direction. Northbound I-880 is the peak commute direction in the morning, and southbound I-880 is the peak commute direction in the evening.

State Route 87 is a north-south freeway extending from the State Route 85/State Route 87 interchange in south San Jose to the U.S. 101/State Route 87 interchange north of downtown San Jose; State Route 87 is located entirely within San Jose. This freeway includes three mixed-flow lanes in each direction, including high occupancy vehicle lanes during peak periods. Northbound State Route 87 is the peak commute direction in the morning, and southbound State Route 87 is the peak commute direction in the evening.

State Route 17 is a north-south freeway extending from San Jose at the I-280/I-880/State Route 17 interchange to Santa Cruz; it exits the county at Skyline Boulevard in the Santa Cruz Mountains south of Los Gatos. The freeway includes two or three mixed-flow lanes in each direction and passes by the western side of the Lexington Reservoir. Northbound State Route 17 is the peak commute direction in the morning, and southbound State Route 17 is the peak commute direction in the evening.
State Route 35 (also referred to as Skyline Boulevard) is a north-south, two-lane road that begins in San Francisco at the State Route 1 interchange, travels along the ridge of the Santa Cruz Mountains, and ends at State Route 17 at the southern end of the upper Los Gatos Creek Watershed. State Route 35 generally serves as the southern boundary of the watershed.

State Route 85 is a north-south freeway located entirely within the county and extending from the State Route 85/U.S. 101 interchange in Mountain View to the State Route 85/U.S. 101 interchange in south San Jose, traveling through Los Gatos and Saratoga. This freeway includes three or four mixed-flow lanes in each direction, including high occupancy vehicle lanes during peak periods. Northbound State Route 85 is the peak commute direction in the morning, and southbound State Route 85 is the peak commute direction in the evening.

**Local Roads**

The Old Santa Cruz Highway starts at State Route 17 just west of the Lexington Reservoir, continues southeast, and ends at Summit Road. This road is the old highway to Santa Cruz that was later replaced by State Route 17. The two-lane highway winds through residential and wooded areas. Bike lanes are not available on this roadway.

Alma Bridge Road is a two-lane road that follows the eastern perimeter of the Lexington Reservoir. It intersects with State Route 17 north of the reservoir and with Aldercroft Heights Road south of the reservoir.

Black Road is a two-lane road that intersects with Montevina Road near State Route 17 and continues westward, passes Lakeside Elementary School and the Los Gatos Saratoga Observation Nursery Room, provides connectivity to the John Nicholas Trail, and ends at Skyline Boulevard (State Route 35).

Montevina Road is a two-lane road. It intersects with Bear Creek Road, continues north, and winds through a rural residential area west of Lexington Reservoir. The road dead-ends at Montevina Ridge Trail in El Sereno Open Space Preserve. Bike lanes are not available.

Aldercroft Heights Road is a two-lane road that connects with the Old Santa Cruz Highway and ends near Hooker Gulch.

Bear Creek Road is a two-lane road that connects with State Route 17, winds through Bear Creek Redwoods Open Space Preserve, and intersects with State Route 35 to the south.

**SJWC Private Roads**

As discussed in other sections of this EIR, SJWC owns and maintains several roads throughout the upper Los Gatos Creek Watershed. SJWC-maintained roads that would undergo
maintenance work are Ellege Road, Cathermola Road, Sears Road, and Hooker Bypass Road.
With the exception of Ellege Road, all SJWC maintenance roads are gated. No public vehicle
access is allowed on the John Nicholas Trail, Cathermola Road, Sears Road, or Hooker Bypass
Road. Public access is only allowed on the John Nicholas Trail (pedestrian recreational access
only) and Ellege Road (private residential access only). The John Nicholas Trail is unpaved and
is maintained by SJWC.

Pedestrian, Bicycle, and Equestrian Access

As discussed in Section 3.11, Recreation, public access for pedestrians and bicyclists is available
in several areas of the watershed. Such opportunities include the Bear Creek Redwoods Open
Space Preserve, El Sereno Open Space Preserve, Sierra Azul Open Space Preserve, Lexington
Reservoir County Park, and Sanborn County Park. Equestrian access is also available at Bear
Creek Redwoods Open Space Preserve, El Sereno Open Space Preserve, and Sierra Azul Open
Space Preserve. The John Nicholas Trail Road (unpaved) within Sanborn County Park is
maintained by SJWC in partnership with the County Parks Department. Within the program
area, none of the local roads have bike lanes or sidewalks.

Regulatory Setting

State

Regional Transportation Planning. The State of California requires each transportation
planning agency to prepare and adopt a regional transportation plan (California Government
Code Section 65080) directed at achieving a coordinated and balanced regional transportation
system, including mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods
movement, and aviation facilities and services.

California Streets and Highways Code. The California Streets and Highways Code provides
the standards for administering the statewide system of streets and highways. Designated state
route and interstate highway facilities are under the jurisdiction of Caltrans, except where facility
management has been delegated to the county transportation authority.

Local

Santa Clara County General Plan. The Santa Clara County General Plan includes a
transportation chapter that addresses both the rural, unincorporated parts of the county and the
urban areas. The following transportation-related policies are applicable to evaluating the
program’s impacts on the transportation system:
Policy C-TR 3 In order to safeguard mobility and achieve other transportation-related goals and objectives stated in the Vision of the General Plan, the following set of coordinated strategies should guide decision-making and implementation efforts:

- Develop land use patterns that support alternative transportation;
- Manage travel demand, system efficiency, and congestion;
- Expand system capacity and improve system integration; and
- Support new transportation technologies.

Policy C-TR 12 It is the goal of this plan to achieve a level of service (LOS) no lower than D at peak travel periods on city streets, county roads, expressways and state highways. However, in certain instances, a lower LOS may be acceptable when LOS D cannot practically be achieved.

Policy R-TR 9 Rural roads should be designed and built to standards that will assure driving safety and provide access for emergency vehicles.

Policy 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.

Policy R-TR 14 Environmental impacts of roadway construction and expansion should be mitigated to a less than significant level.

Santa Clara Valley Transportation Authority. VTA serves as the Congestion Management Agency for Santa Clara County. As the Congestion Management Agency, VTA is responsible for managing the County’s plan to reduce traffic congestion and improve air quality. VTA is authorized to set state and federal funding priorities for transportation improvements described in the Santa Clara County Congestion Management Program and the county’s transportation system. The closest local intersection currently monitored in the Congestion Management Program system is the Saratoga-Los Gatos (State Route 9)/Santa Cruz Avenue intersection in Los Gatos, approximately 2 miles outside the northern portion of the program area. Under the most recent Congestion Management Program monitoring analysis, this intersection is reported to be operating at LOS D+ (VTA 2012). State Route 17, the closest Congestion Management Program freeway to the program area, bisects the upper Los Gatos Creek Watershed.

VTA forwards the county’s prioritized list of projects to the Metropolitan Transportation Commission (Metropolitan Planning Organization for the San Francisco Bay Area) to be incorporated into the regional list to receive state and federal funding.
**Congestion Management Program.** The Congestion Management Program specifies a network of highways and roadways for which LOS standards are established. The Congestion Management Program includes all freeways, state highways, and major arterials in the county. The program sets LOS standards for both roadway segments and intersections. The LOS standard for all freeways and state highways is LOS E, and any facility operating at LOS F (most congested) is deemed deficient. The LOS standard for Congestion Management Program intersections is LOS D, and intersections operating at LOS E or F are operating at unacceptable conditions. The Congestion Management Program also promotes the use of alternative transportation modes and identifies ways to reduce future travel demand (VTA 2013).

VTA requires that impacts of proposed development projects on the Congestion Management Program system be addressed. VTA’s Transportation Impact Analysis Guidelines require that a transportation impact analysis be completed for projects that are expected to generate 100 or more new a.m. or p.m. weekday or weekend peak-hour trips (VTA 2014).

**Standards of Significance**

Based on Appendix G of the State CEQA Guidelines, the program would result in a significant impact on transportation or traffic 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, pedestrians 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;

- 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.
Impact Analysis

Methodology

Traffic impacts associated with implementation of the program were identified by evaluating proposed activities in the context of local and regional circulation patterns; impacts to existing roadway configurations, lane closures, local traffic operation requirements during maintenance activities; and relevance to standard traffic control plan requirements and strategies. The criteria for determining the significance of potential impacts are outlined below.

In accordance with the Transportation Impact Analysis Guidelines (VTA 2014), LOS on individual roadway segments was not evaluated because the proposed program would not generate more than 100 or more new a.m. or p.m. weekday or weekend peak-hour trips.

Environmental Topics Eliminated from Further Analysis

Change in Air Traffic Patterns. The program would not result in a change in air traffic patterns because program maintenance work sites are not located near an airport. The closest airport to the program area is the Mineta San Jose Airport, located approximately 12 miles north.

Conflict with Alternative Transportation Facilities. The only pedestrian facility in the program area is the John Nicholas Trail in Sanborn County Park. The proposed program includes maintenance of culverts along this trail. Section 3.11, Recreation, addresses potential effects on recreational use of the John Nicholas Trail from proposed maintenance activities. No bicycle lanes or sidewalks would be affected by program activities. In addition, no public transit lines operate within the program area. The program would take place almost entirely on SJWC-owned property that is managed to protect water supply resources. Therefore, policies, plans, or programs related to alternative transportation facilities do not apply to the program area.

Environmental Impacts

IMPACT: PROGRAM MAINTENANCE ACTIVITIES MAY DISRUPT LOCALIZED TRAFFIC AND CIRCULATION (LESS THAN SIGNIFICANT)

The proposed program would result in temporary traffic impacts from maintenance vehicle and haul trips associated with proposed maintenance activities. Maintenance-related traffic would consist primarily of daily commute trips by maintenance workers and periodic delivery and removal of materials to and from the maintenance sites over the course of the ten-year program period. The number of maintenance workers and vehicles would vary by maintenance activity, phase, and material needs.
The ways by which proposed program activities are likely to affect traffic volumes on local roads are discussed below.

**Temporary Lane Closure.** Most of the proposed program maintenance activities would occur along or across SJWC-maintained private access roads. Culvert maintenance proposed along Cathermola Road, Sears Road, and Hooker Bypass Road would not affect traffic because these roads are gated, and no public access is allowed. Proposed culvert maintenance along the John Nicholas Trail in Sanborn County Park would affect recreationalists only; this road is closed to vehicle traffic.

New culvert installation and repair/replacement of existing culverts along Ellege Road (sites E3, E7, and E9 in Figure 2-7a), could require temporary lane closures. Ellege Road is an unpaved private road that is used by SJWC and six residences near Lake Cozzens and Lake Kittredge. Temporary lane closures could lead to delays or traffic hazards for those residents. Implementation of BMP GEN-19 would ensure that SJWC notify nearby residents in advance of such activities. Implementation of BMP GEN-17 would also ensure that access to private roads is maintained and, if maintenance activities would block access temporarily for brief periods, those property owners would be notified before work begins at culvert sites E3, E7, and E9.

**Maintenance Worker Trips.** Maintenance workers would likely drive motor vehicles to access the work sites, which would add vehicle traffic to area roadways. SJWC maintenance personnel typically uses a three-person crew and a single four-wheel-drive truck. During the peak maintenance season, the work crew may consist of five to six workers, and up to two to three crews may be working at any given time (three trucks maximum). If each worker drove independently to the work site, based on the anticipated number of workers (three to eighteen workers, depending on the maintenance activity), the number of additional vehicles on local roads generated by maintenance at any given location would be quite small. More likely, workers would convene at either SJWC’s office on South Bascom Avenue in San Jose or the Montevina Water Treatment Plant and then travel in SJWC vehicles to a particular maintenance site. Thus, even the maximum number of additional trips likely to result from maintenance activities is unlikely to result in a noticeable change in traffic flow or intersection LOS on regional or local access roads.

**Maintenance Activity Mobilization and Materials Deliveries.** Heavy equipment would be used to conduct proposed program maintenance activities at the Hooker Intake Facility and the culvert maintenance sites. Haul trucks (flatbed and/or dump trucks) would deliver materials from SJWC’s equipment storage facilities along the Lake Elsman access road to the maintenance site. This type of traffic could result in short-term increases in traffic volumes on roadways and intersections of public roads leading to maintenance sites on SJWC property.
The specific impact of heavy equipment traffic on roadways would depend on the number and type of vehicles, the number of travel lanes on the roadways, existing traffic volumes on these roadways, the terrain, and other factors.

Temporary traffic increases are common to all maintenance projects, however, and generally are not considered a significant impact because of their limited duration and intermittent occurrence. It should also be noted that most of the proposed program maintenance sites and staging areas, including the Hooker Intake Facility, are located behind locked gates and accessible to SJWC staff only; thus the, staging of equipment and materials would not affect public roads. Furthermore, implementation of BMP GEN-17 and BMP GEN-18 would minimize the effects of program traffic on public roadways near the maintenance sites by requiring planning for circulation flow and safety measures. By adhering to these measures, temporary impacts of maintenance activity mobilization and material delivery traffic would be less than significant.

**Truck Trips Associated with Disposal of Excess Materials.** Traffic in the program area may also increase as a result of trucks hauling excavated or mulched materials elsewhere in the watershed for reuse or disposal.

When conducting maintenance activities at culvert sites along the John Nicholas Trail, for efficiency purposes, SJWC would likely work at up to 10 sites per year over a three-week period. Culvert replacement and repair efforts may generate metal and wood debris that may require off-hauling to a local landfill or recycling facility. This analysis conservatively assumes that up to three haul trips per hour may be necessary over the course of six hours of active hauling (maximum of 18 haul trips per day) for the 10 sites.

Considering the maximum number of daily maintenance worker truck trips (three trips) and the few truckloads of debris for landfill disposal that would be generated by maintenance activities (up to 18 trips per day), the total maximum worker and haul truck trips would be approximately 21 per day over an 8-hour workday. With implementation of program BMPs, impacts on traffic and circulation from program activities would be less than significant.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES COULD INCREASE TRAFFIC HAZARDS (LESS THAN SIGNIFICANT)**

Increases in safety hazards in the proposed program area may result from the increased potential for conflicts between residential traffic and maintenance vehicles; conflicts between the movement of traffic and maintenance activities; and confusion of drivers and pedestrians caused by temporary alterations in otherwise familiar roadway conditions. However, the proposed program would not require road or lane closures along public roads.
Culvert maintenance activities at road crossings on Cathermola Road, Sears Road, and Hooker Bypass Road would not subject the public to traffic hazards because these roads are not publicly accessible. As described in the previous impact discussion, temporary lane closure may be necessary on Ellege Road (private road) during construction at the three culvert sites. Although residents that live immediately adjacent to Lake Cozzens and Lake Kittredge would continue to have access to their driveways from Ellege Road (through implementation of BMP GEN-17), culvert construction work could create minor, temporary traffic hazards for these residents and other pedestrians that use this private road. Upon completion of maintenance work, all sites would be re-opened and traffic flow would be restored. Furthermore, SJWC will be required to install construction signs at work areas to warn pedestrians and drivers passing by and provide advanced notification to adjacent properties before the start of construction, as required by BMP GEN-18 and BMP GEN-19.

Adherence to these measures would ensure proper planning of traffic management during maintenance activities along Ellege Road. These planning and signage measures would adequately guard against increased hazards during proposed program construction work in publicly accessible areas.

The program does not propose any changes that would permanently reconfigure or alter roadways, and therefore would not result in a permanent impact on roadway safety conditions. Thus, by adhering to BMP GEN-17, BMP GEN-18, and BMP GEN-19, the program’s effect on traffic safety hazards would be less than significant.

**IMPACT: PROGRAM MAINTENANCE ACTIVITIES COULD RESULT IN TEMPORARY INADEQUATE EMERGENCY ACCESS (NO IMPACT)**

The program does not propose construction of any structures that would permanently block or constrain publicly accessible roadways or emergency access routes. All proposed program maintenance work would occur on private roads. Culvert improvement work on Ellege Road would temporarily affect access for six residences. Maintenance work in Sanborn County Park (John Nicholas Trail) would temporarily affect access for recreational users. Maintenance work would be limited to a maximum of 15 days (three weeks), however, and emergency access would not be restricted. Therefore, the program would not result in a permanent impact on emergency access.

### 3.13 Effects Found Not Significant

The following resource topics have been eliminated from further analysis based on the nature and scope the proposed program. A brief summary and description of these resource topics
dismissed from further review is provided in this section. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2105).

**Agricultural and Forestry Resources**

According to the California Department of Conservation, the program area is land designated as “other land,” which commonly includes low-density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing or other agricultural uses (California Department of Conservation 2014a). Some portions of the upper Los Gatos Creek Watershed are land designated as “water,” “urban and built-up land,” “grazing,” or “Unique Farmland.” None of the proposed maintenance activities would occur on land designated as “grazing” or “Unique Farmland.” Similarly, none of the activities would conflict with or result in cancellation of a Williamson Act contract (California Department of Conservation 2014b). As a result, the proposed program would not alter land use designations or farmland/timberland classifications at either the local or state level. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, forest lands, or lands under a Williamson Act contract would be converted by, or conflict with the proposed program. As such, no impact on agricultural or forestry uses would occur.

**Land Use and Planning**

The proposed maintenance program would not result in division of an established community or conflict with any applicable land use plans, policies, or ordinances. The watershed area is designated as Hillsides; Regional Parks, Existing; or Other Public Open Lands (Santa Clara County 2013). Hillsides land use is defined by the Santa Clara County General Plan (Policy R-LU-16) as follows (Santa Clara County 1994):

> [M]ountainous lands and foothills unsuitable and/or unplanned for annexation and urban development. Lands so designated shall be preserved largely in natural resource-related and open space uses in order to: (a) support and enhance rural character; (b) protect and promote wise management of natural resources; (c) avoid risks associated with the natural hazards characteristic of those areas; and (d) protect the quality of reservoir watersheds critical to the region’s water supply.

The Santa Clara County Zoning Ordinance designates land within the program area as Hillsides (HS), Hillside Scenic Roads (HS-sr), Hillside Santa Clara Valley Viewshed (HS-d1), and Hillside Santa Clara Valley Viewshed Scenic Roads (HS-d1-sr) (Santa Clara County 2012). The purpose
of the Hillside (HS) district is to preserve mountainous lands unplanned or unsuited for urban development, primarily in open space, and to promote uses that support and enhance a rural character, which protect and promote wise use of natural resources (Santa Clara County 2014).

The purpose of the Scenic Roads (–sr) combining district is to protect the visual character of scenic roads in Santa Clara County through special development and signage regulations. The –sr combining district applies to all designated scenic roads in unincorporated Santa Clara County. On designated scenic roads other than U.S. 101, any structure including signs that are located within 100 feet of the right-of-way shall be subject to design review, as described in Chapter 5.50 of the Santa Clara County zoning ordinance.

The Santa Clara Valley Viewshed (-d) combining district is intended to conserve the scenic attributes of hillside lands most immediately visible from the valley floor. It is intended to minimize the visual impacts of structures and grading on the natural topography and landscape, using a combination of supplemental development standards, design guidelines, design review, and use of process incentives for smaller and less visible projects.

The proposed program includes a variety of maintenance activities, such as maintenance and repair of dams; vegetation management; targeted fuel management; limited herbicide spraying; access road maintenance, including culvert repair; intake maintenance and sediment removal at water supply intakes; and other general facility maintenance work at SJWFC facilities. Such activities would not result in division of an established community or conflict with the program area’s land use designations or zoning districts.

Santa Clara County’s Tree Preservation and Removal Ordinance (County Code § C16.1 to § C16.17) requires an administrative permit before removing protected trees on private or public property in designated areas of Santa Clara County. Any person or entity proposing to remove a protected tree is required to file for an administrative permit no less than ten days before removal or, for heritage trees, 90 days before removal. A protected tree on any private or public property consists of any of the following:

a) Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the county:

1) Parcels zoned "Hillsides" (three acres or less)

2) Parcels within a "-d" (Design Review) combining zoning district

3) Parcels within the Los Gatos Specific Plan area.
b) Any tree having a main trunk or stem measuring 18.8 inches or greater in circumference (6 inches or more in diameter) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 37.7 inches in circumference of all trunks (12 inches or more of the diameter) in the "h1" New Almaden Historic Preservation zoning district.

c) Any heritage tree, as that term is defined in §C16-2 of the Tree Preservation Ordinance.

d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to §C16-17(e) of the Tree Preservation Ordinance.

e) Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural & site approval (ASA), design review, special permit or subdivision.

f) On any property owned or leased by the County of Santa Clara, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceeds 20 feet in height.

g) Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.

Removal of any significant trees would be subject to the requirements of the Santa Clara County Code and thus require a permit. Under the proposed maintenance program, most of the trees that would be removed are dead or dying trees, or trees that are otherwise hazardous; these trees are not considered protected and would not require a tree removal permit. Nonetheless, in the event that protected trees must be removed to conduct proposed maintenance, SJWC would comply with the county's Tree Preservation Ordinance and apply for an administrative permit. Refer to Section 3.3, Biological Resources, for additional discussion regarding this topic.

The proposed program would not conflict with local regulations, land use plans, or any plans adopted for the purpose of avoiding or mitigating environmental effects. The program would not result in any impacts to land use and planning resources.

**Mineral Resources**

Proposed maintenance activities would not take place in areas that have any mineral, oil, or gas-resource production designation, capability, or activity. According to CDC's Division of Mines and Geology, most of the program area is classified as Mineral Resources Zone-1 (MRZ-1). These are areas where adequate information indicates that no significant mineral deposits are present, or where there is little likelihood for mineral resources to be present. The Lexington Quarry West Aggregates is situated east of the northern end of Lexington Reservoir. This quarry is classified as MRZ-2, an area where adequate information indicates that significant mineral
deposits are present (Horizon Water and Environment 2015); however, no maintenance activities are proposed to take place at or near this quarry. In addition, the proposed program would not involve any activities that could directly affect mineral production sites or prevent future availability of mineral resources. Therefore, no impact on mineral resources would result from the proposed program.

**Population and Housing**

The proposed program would not involve the construction of new housing or generate any long-term employment opportunities that could cause substantial population growth. Maintenance activities would be conducted by existing SJWC employees or contracted workers who would be employed temporarily in the program area. These jobs would likely be filled by the local workforce; therefore, no growth in new long-term employment opportunities or substantial population growth would result from the proposed program’s maintenance activities.

Furthermore, the proposed maintenance activities would be confined to existing culverts, dam facilities, intake facilities, access roads, and the vegetation near these facilities. Although residences are located near some facilities, including Lake Kittredge and Lake Cozzens, no residents would be displaced by the program, either temporarily or permanently. Therefore, the proposed program would not displace existing housing or people, such that replacement housing would be needed elsewhere. As such, no impacts related to housing displacement would occur from the proposed program.
4.0 OTHER CEQA REQUIREMENTS

4.1 INTRODUCTION

This chapter describes other aspects and potential impacts of the program that have not already been described, as required by State CEQA Guidelines. This chapter includes a discussion of plan consistency, irreversible impacts, and potential growth-inducing impacts of the proposed program. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2015).

4.2 PLAN CONSISTENCY

In accordance with State CEQA Guidelines Section 15125(d), this chapter describes land use plans and policies applicable to the proposed program, as well as the program’s consistency with applicable plans. The Santa Clara County General Plan (SCC 1994) is addressed in this section.

The program is located in an unincorporated area of Santa Clara County south of the Town of Los Gatos. Most of SJWC’s maintenance activities would be conducted at existing SJWC facilities on land owned by SJWC or Santa Clara County. There are no federal or state land use plans that directly apply to the proposed program because the program does not propose activities on land subject to federal or state jurisdiction; therefore, federal and state plans and policies are not discussed further in this chapter.

Chapter 2, Project Description, describes the permits and approvals required for the program. Sections 3.1 through 3.13 of Chapter 3, describe pertinent resource-specific plans (e.g., air quality management plans are discussed in Section 3.2, Air Quality; plans to reduce greenhouse gas emissions are discussed in Section 3.6, Greenhouse Gas Emissions; and habitat conservation plans are discussed in Section 3.3, Biological Resources).
Plans and Policies Relevant to the Proposed Program

Santa Clara County General Plan

The Santa Clara County General Plan (Santa Clara County 1994), as amended, sets forth the long-term land use policies for land under the county’s jurisdiction. The general plan includes General Plan Books A and B and the 2000 Stanford University Plan. General Plan Book A addresses strategic regional and countywide issues and policies that focus particularly on the county’s future growth and development. General Plan Book B includes a discussion of issues and policies related to rural unincorporated areas, urban unincorporated areas, and the South County Joint Area Plan (adopted by the county and the cities of Morgan Hill and Gilroy). Chapters within General Plan Book B’s “Rural Unincorporated Area Issues & Policies” discussion that may be relevant to the program include the following:

- Parks and Recreation: This chapter addresses three types of areas and facilities that can contribute to meeting future recreation demand and to maintaining the county’s natural resources: regional parks and public open space lands, trails, and scenic highways. Some of the strategies employed to address increased recreation demand include developing parks and public open space lands, facilitating inter-jurisdictional coordination, implementing the planned trail network, and protecting scenic highway corridors.

- Resource Conservation: This chapter describes issues and policies for the following topics: water supply, quality and watershed management; habitat and biodiversity; agriculture and agricultural resources; mineral resources; heritage resources; and scenic resources.

- Health and Safety: This chapter includes a range of rural area public health and safety issues for the following resources: air quality, noise, natural hazards, and wastewater disposal.

- Land Use Policies: This chapter includes land use policies for resource conservation areas such as hillsides, open space reserves, existing regional parks, and other public open space lands.

Plan Consistency Evaluation

Approach to Analysis

The plan consistency evaluation is based on the applicability of relevant land use plans and policies to the proposed program as they relate to plans and policies of local jurisdictions.
However, because policies in a land use plan are subject to interpretation, it can be difficult to determine whether a proposed program is consistent or inconsistent with such policies. Furthermore, because land use plans often contain policies emphasizing different (and sometimes competing) legislative goals, a project may be consistent with a general plan taken as a whole, even though it may appear to be inconsistent with specific policies within the plan. The board or commission that enacts the plan or policy will generally determine the meaning of such policies. Policy consistency interpretations prevail if they are “reasonable,” even though other reasonable interpretations may also exist. In light of these considerations, the consistency evaluation in this EIR represents the best attempt to advise the decision-makers as to whether the program is consistent with applicable land use plans and policies. Direct and indirect physical impacts resulting from program implementation are not addressed in this section, but in the appropriate topic sections of the EIR.

**Consistency with Santa Clara County Plans and Policies**

The *Santa Clara County General Plan* sets forth the county’s comprehensive, long-term land use policies and is applicable to projects within its jurisdictional boundaries. The proposed program, located entirely within the county, involves a variety of routine maintenance activities that would occur at SJWC facilities and potentially affect resources adjacent or near those facilities throughout the upper Los Gatos Creek watershed. Many of the policies of the General Plan are related to development, and the proposed project, a maintenance program, is not relevant to many policies. Furthermore, to the extent relevant General Plan policies were adopted to project resources, the proposed project is not in conflict, as all potential impacts have been fully mitigated.

Routine maintenance activities include dam maintenance and repair; intake maintenance, including flashboard repair, gate repair, and sediment removal at intakes; vegetation management such as weed removal; access road maintenance including culvert repair, drainage ditch maintenance, and grading for erosion control; and general facility maintenance including fence repairs and general debris removal. These activities would be conducted to maintain existing operations at SJWC facilities and manage vegetation at these facilities, including providing defensible fire protection and fuel management at SJWC facilities. The overall goal of the routine maintenance program is to protect the quality of SJWC’s source water supplies in the upper Los Gatos Creek Watershed. Thus, the proposed program would benefit SJWC customers within Santa Clara County. Through implementation of BMPs, included as part of the program, and mitigation measures identified in this EIR, the program would not adversely affect land uses within the county and, overall, would be consistent with the intent of the *Santa Clara County General Plan*. 
Any conflict between the program and *Santa Clara County General Plan* policies that relate to physical environmental issues are discussed in Sections 3.1 through 3.13 of Chapter 3 of this EIR. The compatibility of the proposed program with *Santa Clara County General Plan* policies that do not relate to physical environmental issues will be considered by decision makers as part of their conclusion to approve or disapprove the program. Any potential conflicts identified as part of the plan consistency review process would not alter the physical environmental effects of the proposed program.

**Santa Clara County Countywide Trails Master Plan Update.** The *Santa Clara County Countywide Trails Master Plan Update* (Santa Clara County 1995), referred to as the countywide trails plan, is an element of the Parks and Recreation Section of the *Santa Clara County General Plan*. Responsibility for construction of and long-term management of individual trails varies; however, the County Parks Department provides general oversight for the overall county trail system. Numerous county trails pass through or adjacent to the program area. As identified throughout Sections 3.1 through 3.13 of Chapter 3 of this EIR, proposed maintenance activities would have no long-term significant adverse impacts on existing or proposed trails and any temporary impacts would be reduced to less-than-significant levels with BMPs required by mitigation measures or mitigation measures identified in this EIR. Therefore, the proposed program would be consistent with the countywide trails plan.

### 4.3 Irreversible Impacts

State CEQA Guidelines Section 15126.2(c) requires that an EIR must identify any irreversible impacts (also referred to as irreversible environmental changes) that may be caused by a proposed project, including current or future commitments to using non-renewable resources, secondary impacts, and growth-inducing impacts that commit future generations to similar uses. Section 15126 of the State CEQA Guidelines states that significant, irreversible environmental changes associated with a proposed project may include:

- uses of non-renewable resources during the initial and continued phases of the project that may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely;

- primary impacts and, particularly, secondary impacts (such as highway improvement that provides access to a previously inaccessible area) that commit future generations to similar uses; and

- irreversible damage that may result from environmental accidents associated with the project.
An irretrievable commitment of nonrenewable resources would occur as a result of the proposed program. Implementation of the program would involve maintenance activities requiring the temporary use of heavy equipment, which would require the use of fossil fuels, and would involve the permanent use of raw materials, including nonrenewable resources. Future use of such resources would not be compulsory if alternative means of watershed maintenance were implemented to alleviate the need for the program. The routine practices to be implemented under the program would likely reduce the need for larger and more complex maintenance projects that could be required over time if routine maintenance activities were deferred. In addition, the proposed program is not anticipated to have secondary impacts that would commit future generations to similar uses or result in irreversible damage.

### 4.4 Growth Inducement

Section 15126.2(d) of the State CEQA Guidelines requires an EIR to include a detailed statement of a proposed project’s anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the project area. The analysis also must address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. A proposed project is considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The proposed program would not involve new development that could directly induce population growth, and it would not involve the extension of infrastructure, or develop new water supplies, that could indirectly induce population growth. The program would not involve construction of new housing or create a demand for additional housing, such as through commercial development. Minimal additional staffing is expected to be required to carry out the maintenance activities under the program. Furthermore, on its own, the program would not displace any existing housing units or persons. The proposed maintenance activities would be limited to lands owned by SJWC, Santa Clara County, Mid-peninsula Regional Open Space District, and SCVWD, and no housing exists within the limits of the maintenance activities. Therefore, the program would not result in any growth-inducing impacts.
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5.0 CUMULATIVE IMPACTS

5.1 INTRODUCTION

This section assesses potential cumulative impacts of the proposed program. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2105).

5.2 CUMULATIVE IMPACTS

A cumulative impact refers to the combined effect of “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (State CEQA Guidelines § 15355). Cumulative impacts reflect the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (State CEQA Guidelines § 15355[b]).

State CEQA Guidelines Section 15130(a) requires that an EIR address the cumulative impacts of a proposed project when:

- the cumulative impacts are expected to be significant and
- the project’s incremental effect is expected to be cumulatively considerable, or significant, when viewed in combination with the effects of past, current, and probable future projects.

An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR.
State CEQA Guidelines Section 15130 requires an analysis of cumulative impacts to contain the following elements:

- Either a list of past, present, and probable future projects producing related cumulative impacts, or a summary of projections contained in an adopted local, regional, or statewide plan that describes or evaluates conditions contributing to the cumulative effect;

- A definition of the geographic scope of the area affected by the cumulative effect, and a reasonable explanation for the geographic limitation used;

- A summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available; and

- A reasonable analysis of the combined (cumulative) impacts of the relevant projects.

The discussion of cumulative impacts is not required to provide as much detail as the discussion of effects attributable to the project alone. Rather, the level of detail should be guided by what is practical and reasonable. In addition, Section 15130(e) of the State CEQA Guidelines directs that, if a cumulative impact is adequately addressed in a previous EIR for a general plan and the proposed project is consistent with that general plan, the project EIR need not analyze that cumulative impact further.

Lead agencies may use a “list” approach to identify related projects or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (State CEQA Guidelines § 15130[b]), known as the “projection” approach.

**Methods Used in this Analysis**

As described above, Section 15130 of the State CEQA Guidelines provides two recommended approaches for analyzing and preparing an adequate discussion of significant cumulative impacts:

- the list approach, which involves listing past, present, and probable future projects producing related or cumulative impacts, including those projects outside the control of the lead agency; or

- the projection approach, which utilizes a summary of projections contained in an adopted general plan, a related planning document, or an adopted environmental document that evaluated regional or area-wide conditions contributing to the cumulative impact.
This discussion combines the projection approach and the list approach for the proposed program. Table 24, Planning Documents Considered for Cumulative Impact Analysis, provides an overview of the planning documents used in the analysis. The southwestern portion of Santa Clara County is the geographic area considered for the cumulative impact analysis, except where an alternate geographic area was appropriate (e.g., global climate change was considered on a regional and global scale). Table 25, Projected Population and Housing Growth Near Program Area, shows population and housing growth projections in the cities served by SJWC.

**Other SJWC Projects in the Los Gatos Creek Watershed**

SJWC is undertaking two capital improvement projects to upgrade its water supply, treatment, and delivery system in the Los Gatos Creek Watershed. These projects are not part of the proposed maintenance program and have independent utility and function apart from the proposed program. Environmental review and compliance for these projects has been conducted independent of the planning and environmental evaluation of the proposed program.

**Montevina Water Treatment Plant Improvement Project.** The MWTP Improvements Project involves several upgrades to the existing MWTP, focused on water quality improvements. Components of this project include improving the flash mixer, hydraulic flocculation system, and granular media filter system; constructing a new membrane filter building; adding a plate settling system, powdered activated carbon system, sludge thickeners, screw presses, and pumps; replacing the septic tank system; adding a new plant exit; and renovating the operations building. These components of this project would all take place within the footprint of the existing treatment plant. Construction of this project is anticipated to be completed by spring 2017.

The environmental effects of this project are described in an Initial Study /Mitigated Negative Declaration (IS/MND) prepared by SJWC in January 2015 for the SWRCB as the CEQA lead agency (State Clearinghouse No. 2015012058) (SWRCB 2015). The IS/MND for the MWTP Improvements Project concluded that this project could result in significant but mitigable effects during the construction phase, including adverse effects on nesting birds and special-status species (e.g., western pond turtles), effects on California bay forest and protected trees, and noise effects on nearby residents. This IS/MND also concluded that this project would not have significant cumulative impacts.

**Ostwald Water Line Replacement.** The Ostwald Water Line Replacement Project involves replacing 1,700 linear feet of SJWC’s existing 30-inch-diameter raw water transmission line downstream from the Ostwald Intake Facility. The existing wrapped-steel pipeline will be replaced with a new 30-inch-diameter, ductile iron pipeline with polyethylene encasement for corrosion protection. The replacement pipeline will be installed within the same alignment as the
Table 24  Planning Documents Considered for Cumulative Impact Analysis

<table>
<thead>
<tr>
<th>Document</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Clara County General Plan 1995-2012 (1994)</td>
<td>The 1995-2010 General Plan is the most current adopted general plan for Santa Clara County. The broad purpose of the Santa Clara County General Plan is to express policies that will guide decisions on future growth, development, and conservation of resources through 2010. It specifically addresses the unincorporated areas of the county. The vision for the General Plan consists of four basic themes that encompass and articulate the fundamental policy directions of the plan. Within these four themes, the plan established the following major planning goals: Social and Economic Well-Being; Managed, Balanced Growth; Livable Communities; and, Responsible Resource Conservation.</td>
</tr>
<tr>
<td>Town of Los Gatos 2020 General Plan (2010)</td>
<td>The General Plan is the Town of Los Gatos’ policy document to assist and guide local decision makers. It addresses issues that are important to the community; explains how natural resources and physical features shall be maintained and enhanced; and directs how its citizens incorporate them into infill projects, new projects, and community investments. Many of the issues identified in the General Plan are sustainability issues, including open space, hillside preservation, environmental quality, conservation of natural plant and animal life, resource conservation, and community design.</td>
</tr>
<tr>
<td>City of Monte Sereno General Plan (2009)</td>
<td>The General Plan is the principal policy document to guide future conservation, enhancement, and development in Monte Sereno. It represents the basic policy direction of the City Council on community values, ideals, and aspirations to govern a shared environment through 2025. The General Plan addresses all aspects of development, including land use, transportation, housing, public facilities and infrastructure, and open space. The following Guiding Principles serve as the foundation to the General Plan: Community Character; Environmental Sustainability; Enhanced Mobility; Quality Public Services; and, Community Safety.</td>
</tr>
<tr>
<td>Document</td>
<td>Summary</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>City of Saratoga General Plan (2014)</td>
<td>The General Plan was adopted in 1983, but several elements of the General Plan have been updated since that time. In the last few years, the Circulation and Scenic Highway Element, Safety Element, and Noise Element were updated. The General Plan represents the wishes and desires of the citizens of Saratoga and will be the basis of future decisions within the city for the next 5-10 years. The document provides citizens, public bodies, and City staff with the needed direction to make decisions about the future development and character of the city. The format of the General Plan was designed to allow the citizens to ascertain the guiding goals and policies without having to comb through the entire document.</td>
</tr>
</tbody>
</table>

*Source:* Horizon Water and Environment 2016
existing pipeline. Temporary equipment access to the pipeline alignment will be necessary to remove the old pipeline and construct the new pipeline. Site conditions dictate the southwest side of the pipe alignment for this access. Existing operations access routes will be used to the maximum extent possible. The contractor will employ an open trenching technique to excavate, remove, and replace the existing pipeline.

Table 25  Projected Population and Housing Growth Near Program Area

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Population</th>
<th>Projected Annual Pop. Growth</th>
<th>Households</th>
<th>Projected Annual Housing Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
<td>2020</td>
<td>2030</td>
<td></td>
</tr>
<tr>
<td>Los Gatos</td>
<td>29,413</td>
<td>30,200</td>
<td>31,800</td>
<td>0.4</td>
</tr>
<tr>
<td>Monte Sereno</td>
<td>3,341</td>
<td>3,500</td>
<td>3,600</td>
<td>0.4</td>
</tr>
<tr>
<td>Saratoga</td>
<td>29,926</td>
<td>30,800</td>
<td>31,600</td>
<td>0.3</td>
</tr>
<tr>
<td>Unincorporated Santa Clara County</td>
<td>89,960</td>
<td>93,500</td>
<td>97,500</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Source: Horizon Water and Environment 2016

Note: Projected Annual Population Growth and Housing Growth displayed in %.

The environmental effects of Ostwald Water Line Replacement Project are described in an IS/MND currently being prepared by SJWC. Although not yet published for public review at the time of preparation of this EIR, potential impacts during construction of the Ostwald Water Line Replacement Project have been preliminary identified as less than significant or able to be reduced to a less-than-significant level with mitigation. This project’s IS/MND is also expected to conclude that this project would not have significant cumulative impacts (Rodigari, Francois. Email message to consultant, 4 May 2016).

Cumulative Setting

In the following discussion, resource topics that may involve significant cumulative impacts are evaluated in relation to related current and future projects, as well as the proposed program. The cumulative impact discussion is limited to these topics.
**Air Quality**

The SFBAAB has been designated by the BAAQMD as being in non-attainment under both federal and state standards for ozone and PM$_{2.5}$. The air basin is also designated as being in non-attainment for PM$_{10}$ under state standards. Several pollutants are undesignated at either the federal or state level: 1-hour NO$_2$ and 24-hour PM$_{10}$ concentrations under federal standards, and hydrogen sulfide and visibility-reducing particles under state standards. As growth takes place in the county, increased emissions of these and other pollutants could result in continued non-attainment status or new non-attainment designations.

BAAQMD has adopted specific quantitative and qualitative criteria that it recommends using to evaluate air quality impacts. BAAQMD-adopted CEQA thresholds for operational impacts of criteria pollutant emissions are summarized in Section 3.2, Air Quality. BAAQMD’s cumulative operational criteria for air pollutant and precursor emissions, including GHGs, are identical to its individual project thresholds. These thresholds represent the levels at which a project’s individual emissions of criteria air pollutants, precursors, or GHGs would result in a cumulatively considerable contribution to the SFBAAB’s existing air quality conditions.

As described in Section 3.2, Air Quality, and Section 3.6, Greenhouse Gas Emissions, maintenance activities by the proposed program would result in increased air pollutant emissions from on-road and off-road vehicles, including increases in nitrogen oxides (NO$_x$), PM$_{10}$, and PM$_{2.5}$ emissions. These emissions would be expected to decrease over time as a result of lower emissions in vehicles as the fleet is turned over. The emissions were less than the BAAQMD’s CEQA significance thresholds and, therefore, would not result in a cumulatively considerable contribution to the SFBAAB’s existing air quality conditions.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EMISSIONS OF ROG, NOX, PM10, AND PM2.5 (LESS THAN SIGNIFICANT)**

Air pollutant emissions from the program and other past, present, and reasonably foreseeable future projects in the air basin (including the MWTP Improvements Project and Ostwald Water Line Replacement Project) may contribute to existing and potential future nonattainment designations. This represents a cumulative impact.

As described in Section 3.2, Air Quality, none of the criteria pollutant emissions have been estimated to exceed BAAQMD’s mass emission threshold. This threshold applies to both project-level and cumulative impacts. Therefore, the proposed program’s criteria emissions are not considered a considerable contribution to the cumulative impact. Therefore, emissions of criteria pollutants would be below the relevant thresholds and would not make a significantly considerable contribution to cumulative impacts.
CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EMISSIONS OF TOXIC AIR CONTAMINANTS (LESS THAN SIGNIFICANT)

The estimated Bay Area lifetime cancer risk from toxic air contaminants (TACs) based on air pollution measurements is approximately 300 in one million (BAAQMD 2014). This is caused by a variety of emission sources and exceeds the BAAQMD threshold of 100 in one million. As such, this is considered a cumulatively significant air quality impact.

Maintenance activities proposed by the program and other nearby projects, such as the MWTP Improvements Project and Ostwald Water Line Replacement Project, would involve ground disturbance and diesel-fueled vehicle usage that would emit diesel particulate matter. The program's emissions of TACs would be limited in duration and extent by implementation of BMP VEG-4 and BMP GEN-21 requiring standard herbicide use requirements and asbestos exposure precautions. Therefore, program-related TAC emissions would not be substantial and would not make a considerable contribution to this cumulative impact.

Biological Resources

Although the general plans of the county and other jurisdictions contain policies addressing conservation and preservation of open space, ongoing development in the county is anticipated to result in the loss of riparian habitat, wetlands, and other sensitive natural communities. These outcomes likely will lead to direct take or loss of habitat for both common and special-status species.

The program area comprises mostly open space and forested watershed lands in the areas where most of the SJWC facilities are present and maintenance activities would occur. In these watershed areas, the riparian, aquatic, and wetland habitats represent the highest quality habitats available to many species in the region.

As a result, development within the county and nearby projects (including the MWTP Improvements Project and Ostwald Water Line Replacement Project), along with the proposed program, could result in cumulative effects on special-status species and sensitive habitats.

CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EFFECTS ON BIOLOGICAL RESOURCES (LESS THAN SIGNIFICANT WITH MITIGATION MEASURES)

The proposed program has the potential to impact special-status plant species, including Santa Clara Valley dudleya, bent-flowered fiddleneck, Santa Cruz Mountains pussypaws, Mt. Hamilton fountain thistle, San Francisco collinsia, and Santa Cruz Mountains beardtongue.
Because other development projects in the county could also result in adverse effects on these plant species, a cumulative impact on special-status plants could occur. As described in Section 3.3, Biological Resources, implementation of BMPs would prohibit use of ground-disturbing equipment in fuel management areas where special-status plants may occur. Implementation of this measure would ensure that the program’s contribution to this cumulative impact would not be considerable.

Additionally, the program has the potential to impact the following special-status animal species: California red-legged frog, bald eagle, golden eagle, western pond turtle, and western red bat. Nearby projects, including the MWTP Improvements Project and Ostwald Water Line Replacement Project, along with other development envisioned in the county’s general plan and the general plans of the Town of Los Gatos, City of Saratoga, and Town of Monte Sereno, could also result adverse effects on some of these same special-status species. As described in Section 3.3, Biological Resources, implementation of applicable BMPs and mitigation measures would minimize the program’s effects on these species. These measures would require avoidance and minimization measures, protective measures, pre-construction surveys, and creation/restoration of aquatic habitat, which would reduce construction-related disturbances to special-status species. Implementation of these measures would ensure that the program’s contribution to cumulative impacts on special-status animal species would not be considerable.

As described in Section 3.3, Biological Resources, the proposed program may result in temporary or permanent impacts on woody riparian habitat over the ten year course of the maintenance program. Similarly, other development projects in the county may also result in loss of woody riparian habitat. Implementation of BMPs and mitigation measures would minimize such effects to a less-than-significant level. These measures would also ensure that the program’s contribution to cumulative impacts on riparian habitat would not be considerable.

**Cultural Resources**

The Santa Clara County General Plan contains policies regarding preservation of important cultural resources. While development activities countywide could lead to cumulative effects on cultural resources, routine maintenance activities are not anticipated to result or lead to the cumulative loss of significant historic, archeological, or paleontological resources.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EFFECTS ON CULTURAL RESOURCES (LESS THAN SIGNIFICANT)**

Impacts on cultural resources, including historic, archaeological, and paleontological resources, could occur primarily through ground-disturbing maintenance activities such as culvert repair.
and sediment removal. With maintenance activities of the program, the use of heavy equipment for sediment removal and excavation work during culvert replacement or new culvert installation could affect unknown cultural resources.

BMP CUL-6 prescribes measures to address potential effects on historic, archeological, and paleontological resources. With implementation of these measures, the program would not make a significant considerable contribution to cumulative impacts related to cultural resources.

**Greenhouse Gas Emissions**

Anthropogenic emissions of GHGs are widely accepted in the scientific community as contributing to global warming. According to *Climate Change 2013: The Physical Science Basis: Summary for Policymakers* (IPCC 2013), the Earth’s climate system is warming. Global average air and ocean temperatures, as well as global average sea level, are rising. Each of the last three decades has been successively warmer than any preceding decade since 1850; in the northern hemisphere, 1983-2012 was likely the warmest 30-year period of the last 1,400 years. While some of the increase is explained by natural occurrences, the 2013 IPCC report asserts that human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and increasing scientific understanding of the climate system.

Climate change is a global problem, and GHGs are global pollutants. IPCC was established by the World Meteorological Organization and the United Nations Environment Program to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. IPCC predicts that substantial increases in temperatures globally may affect the natural environment in California in the following ways, among others:

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento–San Joaquin River Delta, resulting from ocean expansion;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infectious diseases, and the risk of respiratory problems caused by deteriorating air quality;
- Reduced snowpack and streamflow in the Sierra Nevada, affecting winter recreation and water supplies;
- Potential increase in the severity of winter rainfall events, affecting peak streamflows and flooding;
Changes in growing-season conditions that could affect California agriculture, causing variations in crop quality and yield; and

Changes in distribution of plant and wildlife species resulting from changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California’s climate and ecosystems are occurring at a time when California’s population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission 2006). As such, the numbers of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a “business as usual” scenario, are expected to increase. Changes similar to those noted above for California are also predicted to occur in other parts of the world, with regional variations in resources affected and vulnerability to adverse effects.

Because no single project could emit enough GHG emissions on its own to result in a measurable impact related to climate change, GHG emissions are largely a cumulative issue. Therefore, the cumulative GHG emissions threshold is identical to the thresholds used for the proposed program. See Section 3.6, Greenhouse Gas Emissions, for the program’s impact analysis.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EFFECTS OF GHG EMISSIONS (LESS THAN SIGNIFICANT)**

The accumulation of GHG emissions in the atmosphere is primarily a cumulative impact. As discussed above, the increasing concentrations of GHGs in the atmosphere that are currently present and are anticipated in the future will likely result in cumulatively significant impacts with regard to climate change. Maintenance activities proposed by the program would involve combustion of fossil fuels, which would generate GHGs. As discussed in Section 3.6, Greenhouse Gas Emissions, program emissions would not exceed significance thresholds for project-level and cumulative impacts compared to annual GHG emission significance thresholds. Therefore, the program would not make a significant considerable contribution to this cumulative impact.

**Noise**

As the county grows, the number of noise sources will multiply, and ambient noise levels are likely to increase in a variety of locations, particularly in urban areas and along transit corridors. In general, noise levels are considered to be a localized issue; as such, this increase in noise sources in the county would not combine with increased noise levels in the program area to a substantial degree. Construction activities for the MWTP Improvements Project and the
Ostwald Water Line Replacement Project, however, could take place concurrently with program maintenance activities, resulting in a potentially significant cumulative impact.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE NOISE EFFECTS (LESS THAN SIGNIFICANT)**

As described in Section 3.9, Noise, the program maintenance activities would not substantially increase existing ambient noise levels in most areas of the upper Los Gatos Creek Watershed. As described previously, these maintenance activities would result in a temporary increase in existing ambient noise levels at some individual residences near a few culverts. In addition, construction of the MWTP Improvements Project and the Ostwald Water Line Replacement Project could also result in temporary increases in existing ambient noise levels at nearby residences. However, because the program maintenance activities would not affect the same residences as would construction at the MWTP or the Ostwald Water Line Replacement Project, no cumulative noise impacts are anticipated. Furthermore, implementation of BMP GEN-19 would minimize temporary increases in ambient noise levels by requirement measures to minimize noise disturbances. No new permanent sources of noise would result from the program. For these reasons, the program’s contribution to cumulative noise impacts would not be significantly considerable.

**Traffic**

Automobile traffic congestion is already a severe problem throughout the Santa Clara County. Providing an adequate automotive transportation network and reducing automobile traffic by providing alternative means of transportation are identified as key issues to be addressed in the general plans of the county and various jurisdictions. Traffic conditions may worsen as development in the county continues. Proposed maintenance activities by the program would generate increased vehicle trips and haul trips, which could contribute to traffic congestion in the county. In the event that construction activities for the MWTP Improvements Project and the Ostwald Water Line Replacement Project take place concurrently with the program maintenance activities, a potentially significant cumulative impact related to increased traffic volumes could occur.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE DISRUPTION OF AUTOMOBILE TRAFFIC PATTERNS (LESS THAN SIGNIFICANT)**

The program would generate traffic in the form of maintenance worker trips, maintenance activity mobilization and materials deliveries, and trips to dispose of excess materials generated from culvert repair work. Road and culvert maintenance activities may result in temporary lane
closures on Ellege Road. Similarly, construction of the MWTP Improvements Project and the Ostwald Water Line Replacement Project would generate temporary traffic along some of the same roads affected by the proposed program. Maintenance activities of the program, the aforementioned projects, and other development throughout the county could result in a significant cumulative effect on automobile traffic patterns. Implementation of BMP GEN-17, BMP GEN-18, BMP GEN-19, and BMP GEN-20 would ensure that access to driveways and private roads is maintained to the extent possible. These measures would also ensure that, in the event that access is blocked temporarily, property owners are properly notified before the commencement of maintenance activities. With implementation of these BMPs as required by mitigation measures, the program would not make a considerable contribution to cumulative impacts related to traffic.

**Water Resources**

Increasing development in the county may lead to a variety of impacts on water resources, including increased demand for water supplies, new sources of point-source and non-point-source pollution, increased area of impervious surface and volume of stormwater runoff, and potential flooding impacts. The geographic scope of the area potentially affected by the proposed program for water quality includes various water bodies in the upper Los Gatos Creek Watershed, including those that would be maintained under the program. These water bodies are upper Los Gatos Creek (upstream of Lake Elsman), Hooker Gulch, Hendry’s Creek, Cavanee Creek, Briggs Creek, Beardsley Creek, and Trout Creek. This undeveloped watershed is not affected by or a source of anthropogenic contaminants. The purpose of the proposed maintenance activities is to ensure greater reliability in water supply and deliver. In this way, the program will provide a cumulative benefit to water resources within the regional context. Although the proposed maintenance activities would not result in substantial effects related to hydrology and water quality (see Section 3.8, Hydrology and Water Quality), in the event that construction activities for the Ostwald Water Line Replacement Project take place concurrently with maintenance activities at the Ostwald Intake Facility, cumulative construction-related impacts on Los Gatos Creek could occur.

**CUMULATIVE IMPACT: THE PROGRAM WOULD CONTRIBUTE TO CUMULATIVE EFFECTS ON WATER QUALITY (LESS THAN SIGNIFICANT)**

As described in Section 4.9, Hydrology and Water Quality, ground-disturbing maintenance activities such as sediment removal at the Hooker Gulch Intake Facility, Lake Elsman emergency culvert outfalls, and culvert repairs, present the potential for movement of sediment to downstream surface waters in the program area. Ground-disturbing activities would occur during the summer months, when there is little risk for sediment erosion and transport.
5.0 Cumulative Impacts

The program area is largely undeveloped and no known hazardous materials sites are present. However, in the event that previously unknown hazardous materials sites are discovered during ground-disturbing maintenance activities, a significant impact on water quality could occur. During dewatering activities at the Hooker Intake Facility and Lake Elsman emergency outfalls, installation and removal of flow bypass mechanisms could disturb the stream bank and bed, resulting in turbidity in the water column. Small gas-powered tools would be used during vegetation management activities and heavy equipment would be used during sediment removal and culvert repair, possibly near stream channels; if sediment or contaminants were accidentally released directly or indirectly into the stream channel, water within these channels could be degraded. Similarly, accidental release of herbicides or transport of applied herbicides via stormwater runoff to local surface waters could degrade water quality. Furthermore, proposed maintenance activities at the Ostwald Intake Facility could result in cumulative water quality impacts to Los Gatos Creek due to soil disturbance.

Implementation of the following BMPs would limit the potential for these impacts to substantially degrade water quality or violate water quality standards or waste discharge requirements: BMP GEN-1, BMP GEN-2, BMP GEN-3, BMP GEN-4, BMP GEN-5, BMP GEN-6, BMP GEN-7, BMP GEN-8, BMP GEN-9, BMP GEN-10, BMP GEN-12, BMP GEN-13, BMP GEN-14, BMP GEN-16, BMP GEN-20, BMP VEG-1, BMP VEG-2, BMP VEG-3, BMP VEG-4, as well as additional biological resources’ mitigation measures.

In the long term, maintenance activities would provide water quality benefits to the watershed by reducing existing erosion in the program area. Therefore, with implementation of the above-mentioned BMPs and mitigation measures, the program’s contribution to cumulative impacts on water quality would not be significantly considerable.
6.0 ALTERNATIVES

6.1 INTRODUCTION

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the proposed project that can feasibly attain most of the identified project objectives but would reduce or avoid one or more of the project’s significant impacts. This chapter describes the alternatives to the proposed program that were considered and evaluated for their potential environmental impacts.

CEQA’s requirements for consideration of alternatives are presented. The chapter then continues with a description of the alternatives development process and an analysis of the alternatives carried forward. Finally, the chapter concludes with identification of the environmentally superior alternative. Sources used for this section include a preliminary environmental analysis prepared on the program by Horizon Water and Environment (Horizon Water and Environment 2105).

6.2 CEQA REQUIREMENTS FOR ALTERNATIVES EVALUATION

CEQA Guidelines section 15126.6(a) requires a description of reasonable alternatives to the proposed project, or to the location of the project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. It also requires an evaluation of the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project, but must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. CEQA Guidelines section 15126.6(b) further requires that the discussion of
alternatives focus on those alternatives capable of eliminating any significant adverse environmental impacts or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly. CEQA Guidelines section 15126.6 (e) stipulates that a no project alternative be evaluated along with its impacts.

CEQA Guidelines section 15126.6(d) requires the EIR to present enough information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. CEQA Guidelines section 15126.6(e) requires the identification of an environmentally superior alternative. If the “No Project” alternative is the environmentally superior alternative, then the environmentally superior alternative amongst the remaining alternatives must be identified.

6.3 ALTERNATIVES DEVELOPMENT PROCESS

The proposed program’s goals and objectives and significant environmental impacts are relevant to developing suitable alternatives that aim to achieve the primary project goals and objectives and result in fewer or less intense environmental effects.

Program Goals and Objectives

The maintenance program was developed to achieve the following goals:

1. Protect the quality of SJWC’s source water supplies;
2. Maintain the structural and functional integrity of SJWC facilities; and
3. Reduce reliance on imported water supplies.

The following objectives are used to achieve the overarching goals above:

- Maintain existing water impoundment, water supply intake, flood control, and roadway facilities in the upper Los Gatos Creek Watershed to perform their operational functions.
- Prevent roadway flooding, reduce safety hazards, and minimize potential threats to the structural integrity of roadways and facilities within the upper Los Gatos Creek Watershed by maintaining numerous culverts and clearing debris blockages at roadside culverts.
- Remove sediment at SJWC facilities in the upper Los Gatos Creek Watershed where sediment accumulation reduces functional capacity, reduces flow conveyance, or increases the flood hazard and safety risk.

- Consider, maintain, and, where possible, enhance and improve the habitat functions of creek systems near SJWC facilities in the upper Los Gatos Creek Watershed.

- Manage vegetation at SJWC facilities in the upper Los Gatos Creek Watershed to keep these facilities clear of debris and vegetation so that they can be operated in a manner that is consistent with the preservation of habitat functions of the creeks and channels.

- Manage vegetation at specific SJWC facilities to reduce fuel loads, protect facilities and structures, and disrupt the future movement of wildfires.

- Avoid and minimize potential impacts to the environment by using defined criteria and thresholds to guide when maintenance work is necessary.

- Avoid and minimize potential impacts to habitats and special-status species by incorporating detailed appraisals of habitat, species, and resource conditions while developing maintenance plans.

**Significant Environmental Impacts of the Proposed Project**

No significant and unavoidable impacts were identified for the program. Impacts have been identified as potentially significant, but would be mitigated to a less-than-significant level by implementation of mitigation measures for biological resources.

### 6.4 Alternatives Considered

An alternative location was rejected as a possible alternative, as the proposed program is unique to Upper Los Gatos Creek Watershed. The following alternatives were considered because they would meet most of the proposed program goals and objectives, would be feasible, and would avoid or substantially reduce one or more significant impacts of the proposed program:

- Alternative 1: No Project Alternative

- Alternative 2: Water Supply Facility Maintenance Alternative

Aside from these alternatives, no other alternatives were considered or dismissed.
Alternative I: No Project Alternative

Characteristics of this Alternative

Under Alternative I, No Project Alternative, SJWC would not implement an integrated and comprehensive maintenance program to guide and direct maintenance activities for its intake facilities, impoundments, access roads, culverts, and other facilities under its maintenance authority. Rather, under the reasonably foreseeable no project scenario, maintenance practices would be implemented on a project-by-project, as-needed basis.

Currently, routine maintenance occurs as the need arises. For example, vegetation management activities at SJWC dams and reservoirs, access road maintenance, minor fence repairs, and fire fuel reduction may occur on an as-needed basis. Under the No Project Alternative, maintenance activities involving ground disturbance, including culvert repair and new culvert installation, and sediment removal, would not be implemented.

Impact Analysis

Although some activities under the No Project Alternative would be similar to those under the proposed program, the construction related impacts under this alternative would be substantially reduced in comparison to the proposed program. Construction related effects of the No Project Alternative would be less severe than those of the proposed program because fewer construction vehicles and less equipment would be operating. As such, under the No Project Alternative, emissions and vehicle traffic on local roadways would be much lower in comparison to those of the proposed program. SJWC maintenance activities conducted under the No Project Alternative, however, would not benefit from the use of a consistent and comprehensive set of BMPs and mitigation measures proposed within the watershed. As such, the impacts associated with conducting limited, routine maintenance activities could be greater under this alternative if appropriate mitigation, including BMPs, were not implemented. Additionally, because maintenance would occur only as needed, an assessment of annual maintenance needs and use of a planned approach that addresses maintenance before issues become larger and more complicated would not occur. As a result, over the long term, this more limited approach would result in more maintenance projects that are larger and more complex, potentially resulting in increased environmental impacts.

As a result of not maintaining SJWC’s intake facilities, sediment and debris would accumulate behind the weirs and the intake gates, which would restrict operation of SJWC’s water supply system and potentially create flood hazards and safety risks for areas downstream of the intakes. At the Hooker Intake Facility, under the No Project Alternative, the 661 cubic yards of sediment that has accumulated behind the intake would not be removed. In the event of a large storm...
event, this volume of sediment could increase substantially and further threaten the stability and
operation of this facility. Similar effects may occur if sediment is not removed at the Lake
Elsman emergency culvert outfalls. Each of these facilities was designed with the intent of
conducting routine maintenance to maintain channel and culvert capacity to enable facility
operation.

As a result of not maintaining access roads and culverts, roadside drainage issues could cause
flooding and erosion, conditions that may worsen where debris, sediment, or vegetation
accumulate at culvert inlets and outfalls. Blocked culvert inlets and outfalls could create drainage
blockages, which can cause road flooding and land erosion.

Without vegetation and fuel management activities, fire hazard risks would continue to worsen
due to accumulation of dead, decaying, or fallen trees and vegetative debris. This alternative
would likely increase the fire hazard risk over time.

**Alternative 2: Water Supply Facility Maintenance Alternative**

**Characteristics of this Alternative**

Alternative 2, Water Supply Facility Maintenance Alternative, would involve conducting
routine maintenance activities at SJWC water supply facilities only. Maintenance activities
along access roads, including culvert repair and replacement, and fire fuel load reduction
activities would not occur under this alternative. This alternative would meet several, but not all,
of the proposed program objectives related to water supply, flood control, and habitat protection
in creek systems. It would not meet proposed program objectives related to preventing roadway
flooding, providing fire safety, and restricting wildfire movement in the watershed.

Routine maintenance at water supply facilities, including sediment removal, burrow
management, vegetation management within a 200-foot radius of water supply facilities, and
flashboard and outlet gate maintenance, would occur as described for the proposed program.

This alternative would not include the culvert repair and replacement activities along any of the
private access roads in the watershed, including the John Nicholas Trail, Cathermola Road,
Sears Road, Ellege Road, and Hooker Bypass Road. Existing erosion at culvert inlets, outlets,
and road gullies would continue to contribute sediment to downstream waters. Road washouts
and flooding would continue to restrict access to maintain water supply facilities during the
winter season.

By not conducting maintenance activities along access and service roads, Alternative 2 could
also eventually reduce SJWC’s ability to conduct maintenance at its water supply facilities
because access may be constrained or limited over time without road and culvert maintenance.
The proposed program includes fire fuel maintenance activities within a 50-foot area around watershed access roads maintained by SJWC. These activities include removal of dead, decaying woody debris, fallen trees, and hazard trees; thinning, pruning, and removal of snags and ladder fuels; cutting of firebreaks; and weed abatement. Alternative 2 would not include these maintenance activities and, therefore, would not include the fire protection and management benefits of these activities.

**Impact Analysis**

Under this alternative, maintenance activities associated with water supply facilities would have the same impacts as those of the proposed program. Mitigation requirements for wetland and species impacts related to maintenance of water supply facilities would be the same as under the proposed program.

Under Alternative 2, impacts associated with maintenance activities along access roads would not occur. This alternative would avoid temporary detours for residents along Ellege Road and recreationalists on John Nicholas Trail and would involve fewer truck trips and material hauling activities in the watershed. Reduced truck trips and construction activities would reduce generation of construction related sediment, air pollutant emissions, and noise compared to the proposed program. Similarly, the reduced presence of hazardous materials in construction equipment and reduced use of herbicides in the watershed would reduce impacts related to accidental hazardous material spills compared to the proposed program.

Potential impacts on biological resources along roads would not occur under this alternative. This includes impacts on special-status plants, special-status amphibians such as California red-legged frog, nesting birds, bats, woodrats, and wetland habitat.

This alternative would not require ground disturbance along roads. Therefore, potential impacts on unknown cultural resources along access roads would not occur under this alternative.

**6.5 Environmentally Superior Alternative**

As displayed in Table 26, Project Alternatives Summary, the proposed program is considered to be the environmentally superior alternative. Compared to the other alternatives, it provides the most appropriate balance among protecting the quality of SJWC’s water supplies, protecting the functional and structural integrity of SJWC’s facilities, protecting the safety and reliability of roadways used to access SJWC’s facilities, and addressing other short- and long-term impacts associated with the proposed maintenance activities.
Table 26  Project Alternatives Summary

<table>
<thead>
<tr>
<th>Environmental Topic</th>
<th>No Project</th>
<th>Water Facility Maintenance Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
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<td>=</td>
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<tr>
<td>Air Quality</td>
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<td>—</td>
</tr>
<tr>
<td>Biological Resources</td>
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<tr>
<td>Cultural Resources</td>
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<td>—</td>
</tr>
<tr>
<td>Geology &amp; Soils</td>
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<td>Greenhouse Gas Emissions</td>
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<td>Hazards and Hazardous Materials</td>
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<td>Hydrology and Water Quality</td>
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<tr>
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<td>Transportation and Traffic</td>
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<td>—</td>
</tr>
<tr>
<td>Project Objectives</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Source: EMC Planning Group 2017

Note: (—) less, (=) similar, (+) greater

The No Project Alternative was not selected as the environmentally superior alternative because, although this alternative would provide a substantial reduction in the maintenance of SJWC facilities and structures and thereby reduce construction-related impacts (e.g., traffic, noise and emissions), maintenance would not necessarily be conducted in a timely manner. Sediment would continue to accumulate behind SJWC’s intake facilities, which could potentially increase flood hazards and safety risks. By not timely repairing roadside culverts, roadside drainage issues could worsen and cause flooding and erosion. Without vegetation and fuel management activities, fire hazard risks would also continue to worsen. Lastly, maintenance activities might not be implemented along with a comprehensive mitigation approach and consistent set of BMPs and mitigation measures as identified in this EIR.
The Water Supply Facility Maintenance Alternative was not selected as the environmentally superior alternative because, although this alternative would substantially reduce potential construction-related impacts on biological and cultural resources by avoiding access road maintenance, this alternative would potentially increase occurrences of flooding, erosion, and fire hazards throughout the watershed. By not repairing roadside culverts, roadside drainage issues could worsen and cause flooding and erosion in the watershed. Without vegetation and fuel management activities along access roads, fire hazard risks would also continue to worsen. These conditions would reduce SJWC’s access to water supply facilities and threaten the continued reliability and quality of water supply for the service area.
7.0

REFERENCES AND REPORT PREPARERS

7.1 REPORTS AND REFERENCES

**Project Description**


**Aesthetics**

California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm


**Air Quality**


California Air Resources Board. *Toxic Air Contaminant Identification List*. 2013a. Available at: http://www.arb.ca.gov/toxics/id/taclist.htm


California Air Resources Board. *Air Quality Standards and Area Designations*. 2015. Available at: www.arb.ca.gov/desig/desig.htm


**Biological Resources**


California Department of Fish and Wildlife (CDFW). *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. Sacramento, California, November 2009.


California Native Plant Society. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). Available at: www.cnps.org/inventory


EcoSystems West Consulting Group. 2010b. Results of Special-Status Amphibian and Aquatic Reptile Surveys at San Jose Water Company’s Lake Kittredge and Lake Cozzens Properties, near the Community of Lakeside in Santa Clara County, California. September 2010.


U.S. Fish and Wildlife Service. 2014. Programmatic Biological Opinion for Issuance of Permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, including Authorizations under 22 Nationwide Permits, for Projects that May Affect the Threatened California Red-Legged Frog in Nine San Francisco Bay Area Counties, California.

**Cultural Resources**


**Geology and Soils**


**Greenhouse Gas Emissions**


California Environmental Protection Agency. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. 2010. Available at: www.energy.ca.gov/2010publications/CAT-1000-2010-005/CAT-1000-2010-005.PDF


California Air Resources Board (CARB). *Clean Car Standards - Pavley, Assembly Bill 1493*. 2013. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm


Hazards and Hazardous Materials


State Water Resources Control Board. GeoTracker database. 2016. Available at: geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Lexington+Reservoir%2C+Los+Gatos%2C+CA

**Hydrology and Water Quality**


San Francisco Bay Regional Water Quality Control Board (RWQCB). *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. Incorporated June 29, 2013. Available at: www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf


**Noise**


**Public Service and Utilities**

California Department of Resources Recycling and Recovery. *CalRecycle Strategic Objectives.* Last revised in June 2009. Available at: www.calrecycle.ca.gov/AboutUs/StrategicPlan


SCC Fire Department. *Santa Clara County Fire Department Homepage*. 2016. Available at: www.sccfd.org/about-sccfd/sccfd-overview


**Recreation**


**Transportation and Traffic**


**Effects Found Not Significant**


**Other CEQA**


**Cumulative Impacts**


**Alternatives**


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