SAN FRANCISCO
**PLANNING DEPARTMENT**

# Final Amended Mitigated Negative Declaration

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
**415.558.6378**

Fax:
**415.558.6409**

Planning
Information:
**415.558.6377**

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|---|---|
| *PMND Date:* | July 25, 2012, Amended on September 19, 2012 (Amendments to the PMND are shown in double-underline; deletions in ~~strike through~~) |
| *Case No.*: | **2012.0475E** |
| *Project Title*: | **Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project** |
| *Project Address*: | East of Cañada Road, west of I-280, north of Edgewood Road. |
| *Zoning*: | Resource Management |
| *Block/Lot*: | 093-090-070 |
| *Project Site Size*: | Approximately 0.5 acre |
| *Project Sponsor*: | San Francisco Public Utilities Commission<br>525 Golden Gate Avenue, 6th Floor<br>San Francisco, California 94102<br>YinLan Zhang – (415) 487-5201 |
| *Lead Agency*: | San Francisco Planning Department |
| *Staff Contact*: | Steve Smith – (415) 558-6373<br>Steve.Smith@sfgov.org |

## PROJECT DESCRIPTION:

The San Francisco Public Utilities Commission (SFPUC) is proposing to implement the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project (project) to install a new culvert beneath an existing Pacific Gas & Electric (PG&E) electrical substation and to abandon the existing failing culvert. The project site is located in the ~~SFPUC's~~ Peninsula Watershed and Fish and Game Refuge Lands, which are owned and operated by the SFPUC, between Cañada Road and I-280 in unincorporated San Mateo County. The existing corrugated metal pipeline culvert, which channels an intermittent stream, is severely damaged due to corrosion, and is threatening to undermine the stability of the PG&E substation. The substation supplies electricity to a number of the SFPUC's critical water transmission and treatment facilities in the Peninsula Watershed. The new concrete culvert would be constructed adjacent to the existing culvert, and would be approximately 6 feet wide, 200 feet long, and 4 feet tall. Riprap would be placed at the inlet and outlet of the culvert to dissipate energy from stream flow. Additionally, two fences would be constructed on a slope adjacent to the substation to catch and deflect erosion debris.

Construction of the proposed project is expected to last approximately 2 to 3 months. Construction activities would generally occur between 7:00 am and 6:00 pm. Evening and weekend work is not anticipated; however, if the schedule needs to be condensed, extended work days until 8:00 pm and/or Saturdays between 9:00 am and 5:00 pm may be required

## FINDING:

This project would not have a significant effect on the environment. This finding is based on the criteria of the Guidelines of the State Secretary for Resources, Section 15064 (Determining the

Significance of Environmental Effects), Section 15065 (Mandatory Findings of Significance), and Section 15070 (Decision to Prepare a Negative or Mitigated Negative Declaration), and on the results of the Initial Evaluation (Initial Study) for the project, which is attached.

Mitigation Measures are included in this project to avoid potentially significant effects. See Initial Study Section E, Evaluation of Environmental Effects.

In the independent judgment of the Planning Department, there is no substantial evidence that the project could have a significant effect on the environment.

BILL WYCKO
Environmental Review Officer

20, 2012
Date of Adoption of Final Mitigated Negative Declaration

cc: YinLan Zhang, San Francisco Public Utilities Commission
Distribution List

# INITIAL STUDY

**Pulgas G20 Shaft Site**
**Drainage Improvements and Erosion Repair Project**
**Planning Department Case Number 2012.0475E**

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## List of Tables

## List of Acronyms and Abbreviations

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|---|---|
| ACOE | U.S. Army Corps of Engineers |
| BAAQMD | Bay Area Air Quality Management District |
| C-APE | CEQA Area of Potential Effects |
| CDFG | California Department of Fish and Game |
| CESA | California Endangered Species Act |
| CEQA | California Environmental Quality Act |
| $CH_4$ | methane |
| CMP | corrugated metal pipeline |
| CNDDB | California Natural Diversity Database |
| ~~CNEL~~ | ~~Community Noise Equivalent Level~~ |
| CNPS | California Native Plant Society |
| CMP | Corrugated Metal Pipe |
| CMP | Congestion Management Plan |
| $CO_2$ | carbon dioxide |
| $CO_2E$ | carbon dioxide-equivalent |
| CRHR | California Register of Historical Resources |
| cy | cubic yards |
| dB | decibel |
| dBA | decibel, A-weighted |
| DTSC | California Department of Toxic Substances Control |
| GHG | greenhouse gas |
| ~~Ldn~~ | ~~day-night noise level~~ |
| ~~Leq~~ | ~~Equivalent Energy Noise Level~~ |
| ~~Lmax~~ | ~~maximum noise levels~~ |
| MLD | most likely descendant |
| NAHC | Native American Heritage Commission |
| NOx | Nitrogen Oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NWIC | Northwest Information Center |
| OPR | California Office of Planning and Research |
| OSHA | Occupational Safety and Health Administration |
| PG&E | Pacific Gas and Electric Company |
| ROG | reactive organic gas |
| RWQCB | San Francisco Bay Regional Water Quality Control Board |
| SFBAAB | San Francisco Bay Area Air Basin |
| SFPUC | San Francisco Public Utilities Commission |
| USA | Underground Service Alert |
| USFWS | U.S. Fish and Wildlife Service |

## Glossary

**100-year flood** – A flood that has a 1-percent chance of being equaled or exceeded in any given year.

**Ambient ~~N~~noise ~~L~~level –** The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

**A-weighted decibel (dBA)** – Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as "dBA." The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies.

**California Environmental Quality Act (CEQA) –** Regulations set forth in California Public Resources Code Sections 21000-21178 that require public agencies to identify and minimize significant environmental effects of a project.

**Channel** – A natural or artificial watercourse with a defined bed and banks to confine and convey continuously or periodically flowing water.

~~**Community Noise Equivalent Level (CNEL)** – Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dBA increment be added to "quiet time" noise levels to form a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL). CNEL adds a 5 dBA "penalty" during the evening hours (7:00 p.m. to 10:00 p.m.) and a 10 dBA penalty during the night hours (10:00 p.m. to 7:00 a.m.).~~

**Cultural resource** – A fragile and nonrenewable remain of human activity that is valued by or significantly representative of a culture or that contains significant information about a culture. Cultural resources encompass archaeological, traditional, and built environment resources, including landscapes or districts, sites, buildings, structures, objects, or cultural practices that are usually greater than 50 years of age and possess architectural, historic, scientific, or other technical value.

**Cumulatively considerable** – A CEQA term that refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

**Decibel (dB)** – A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

~~**Day-night noise level (Ldn)** – Another 24-hour noise descriptor, called the day-night noise level (Ldn), is similar to CNEL. While both add a 10 dBA penalty to all nighttime noise events between 10:00 p.m. and 7:00 a.m., Ldn does not add the evening 5 dBA penalty. In practice, Ldn and CNEL usually differ by less than 1 dBA at any given location for transportation noise sources.~~

**Debris flow** –~~F~~ast moving, liquefied landslides of mixed and unconsolidated water and debris that look like flowing concrete. They are differentiated from mudflows by their coarser and more poorly sorted sediment load. Flows can carry material ranging in size from clay to boulders, and may contain a large amount of woody debris such as logs and tree stumps.

**Dewatering** – The process of removing water from a pipeline for repair and maintenance or for removing groundwater from a trench during construction.

**Discharge** – The flow of surface water in a stream or canal or the outflow of groundwater from a flowing artesian well, ditch, or spring. Also refers to the discharge of liquid effluent from a facility or to chemical emissions into the air through designated venting mechanisms.

**Endangered species** – Any species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that is in serious danger of becoming extinct throughout all or a significant portion of its range. Federally endangered species are officially designated by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service and published in the Federal Register. Species may also be listed under the California Endangered Species Act by the Department of Fish and Game.

**Environmental cases** – Sites that are suspected of releasing hazardous substances or that have had cause for hazardous materials investigations and are identified on regulatory agency lists. These are sites where soil and/or groundwater contamination is known or suspected to have occurred.

~~**Equivalent Noise Level (Leq)** – The steady-state energy level that represents the acoustical energy of a given measurement.~~

**Flow** – The volume of liquid passing a given point per unit of time.

**Fugitive dust** – Emissions that are released to the atmosphere by some means other than through a stack or tailpipe.

**Greenhouse gas** – A gas that contributes to the greenhouse effect by absorbing or trapping energy that is radiating from the Earth's surface and therefore contributing to global climate change. Some examples of greenhouse gases are carbon dioxide, methane, ozone, nitrous oxide, and water vapor.

**Habitat** – The specific area or environment in which a particular type of animal or plant lives.

**Hazardous materials** – Defined in Section 25501(h) of the California Health and Safety Code, are materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a substantial present or potential hazard to human health and safety or to the environment if released to the workplace or environment. Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications as well as in residential areas to a limited extent.

**Hazardous waste** – Any material that is relinquished, recycled, or inherently waste-like. Title 22 of the California Code of Regulations, Division 4.5, Chapter 11 contains regulations for the classification of hazardous wastes. A waste is considered a hazardous waste if it is toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases) in accordance with the criteria established in Article 3. Article 4 lists specific hazardous wastes, and Article 5 identifies specific waste categories, including Resource Conservation and Recovery Act (RCRA) hazardous wastes, non-RCRA hazardous wastes, extremely hazardous wastes, and special wastes.

**Landmark trees –** Large, old, or historically important trees that receive designation and protection on a local basis (San Francisco Urban Forestry Ordinance, Public Works Code Article 16, Section 810, Board of Supervisors Resolution Number 440-06, File Number 060487, as amended).

**Lead agency** – The public agency that has the principal responsibility for carrying out or approving a project that is subject to CEQA. The Lead Agency is responsible for determining the appropriate environmental document, as well as its preparation.

~~**Leq** – Time variations in noise exposure are typically expressed in terms of a steady state energy level (called Leq) that represents the acoustical energy of a given measurement. Leq (24) is the steady state energy level measured over a 24 hour period.~~

~~**Lmax** – A sound level that represents the maximum noise level measured during the measurement.~~

**Level of service** – A qualitative description of a transportation facility's performance based on average delay per vehicle, vehicle density, or volume-to-capacity ratios. Levels of service range from LOS A, which indicates free-flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays.

**Mitigation** – The CEQA Guidelines Section 15370 defines mitigation as one or all of the following: (1) avoiding an impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of an action and its implementation; (3) rectifying an impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating an impact over time by preservation and maintenance operations during the life of an action; and (5) compensating for an impact by replacing or providing substitute resources or environments.

**Right-of-way** – The area of land (usually a strip) acquired for and devoted to the provision of utilities.

**Sedimentation** – The deposition of material suspended in a stream system, whether in suspension (suspended load) or on the bottom (bedload).

**Sensitive receptors** – A land use or set of uses that are sensitive or more vulnerable to the effects of noise, air quality, or a specific impact than the surrounding uses or general population.

**Special-status species** – Several species known to occur within the general region of the program area are accorded "special status" because of their recognized rarity or vulnerability to habitat loss or population decline. Some of these species receive specific protection in federal and/or state endangered species legislation. Others have been designated as "sensitive species" or "species of special concern" on the basis of adopted policies of federal, state, or local resource agencies. These species are referred to collectively as "special-status species."

**Soldier beams or piles** – Beams constructed of wide-flange steel H-pile sections spaced about 2 to 3 meters apart and driven prior to excavation. As the excavation proceeds, horizontal timber sheeting (lagging) is inserted behind the H-pile flanges.

**Spoil** – Excess soil from excavations.

**Subsidence** – The lowering, settling, or sinking of the land surface.

# A. Project Setting

## Introduction

The San Francisco Public Utilities Commission (SFPUC) proposes the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project (project) to install a new culvert adjacent to a Pacific Gas & Electric Company (PG&E) electric substation that serves several SFPUC water treatment and transmission facilities in the project vicinity. The existing 42 inch diameter corrugated metal pipeline (CMP) culvert would be abandoned in place and filled with concrete. The proposed project would involve installation of a concrete box culvert measuring approximately 6 feet wide by 200 feet long by 4 feet tall.

The project would also include erosion repair measures on a slope north of the SFPUC's Pulgas G20 Valve Vault, adjacent to the PG&E substation. The proposed project is located in the San Francisco Peninsula Watershed and Fish and Game Refuge Lands, which are owned and operated by the SFPUC. The project site is in unincorporated San Mateo County, between the Interstate 280 Freeway (I-280) and Cañada Road west of the cities of Belmont and San Carlos and east of the SFPUC Pulgas Water Temple site.

## Background

The PG&E electric substation at the project site was constructed in 1975 to serve the SFPUC's Pulgas Pump Station, Pulgas Balancing Reservoir, and ~~the~~ Pulgas Dechloramination Facilities. The 5,530-square-foot substation was built on a cut slope at the end of a private dirt road. The road leading to the project site is behind a locked gate and is inaccessible to the general public. Adjacent to the substation is an approximately 3,000-square-foot water pump station (built in 1966) operated by the Mid-Peninsula Water District, which serves retail customers in the cities of Belmont, San Carlos, Redwood City, and unincorporated San Mateo County. The Mid-Peninsula Water District receives its water from the SFPUC through the Pulgas Tunnel. Adjacent to and north of the pump station is the Pulgas ~~Tunnel valve vault number~~ G20 Valve Vault, located at the confluence of the Pulgas Tunnel, the SFPUC Crystal Springs Bypass Tunnel, and a tunnel operated and maintained by the Mid-Peninsula Water District.

In the winter of 2010-2011, storms caused flooding of an intermittent stream that crosses under the substation in the CMP culvert. Due to corrosion, the CMP culvert had begun to fail and undercut the concrete slab on which the substation sits. The stream also began to cause erosion upstream of the substation at the culvert inlet structure, which was repaired on an emergency basis by the SFPUC in November 2011. These emergency repairs included replacement of an approximately 10-foot-long segment of the failed CMP culvert inlet pipeline, restoration of the upstream bank slope, and implementation of erosion control measures such as straw wattles and hydroseeding to promote plant growth and bank stabilization.

Since completion of the emergency repairs, a detailed engineering analysis of the CMP culvert was conducted by Geotechnical Consultants, Inc. (GTC) at the request of the SFPUC (GTC, 2012). The analysis concluded the CMP culvert had collapsed and the bottom (invert) of the culvert had completely corroded and collapsed at various locations. Repair of the culvert was found to be infeasible ~~and the only available option was to install a new culvert~~.

The SFPUC evaluated various alternatives to the proposed project, including installation of a 42-inch diameter high-density polyethylene (HDPE) pipeline culvert or construction of a 42-inch diameter concrete pipe culvert. A box culvert design was selected as the proposed project in order to provide easier access for maintenance crews. The analysis evaluated replacement of the culvert along the existing alignment, which would be disruptive to the operation of the substation, or placement of the culvert along an alignment around the southeast and southwest corners of the substation, which is the proposed project alignment addressed in this document.

## Project Location and Setting

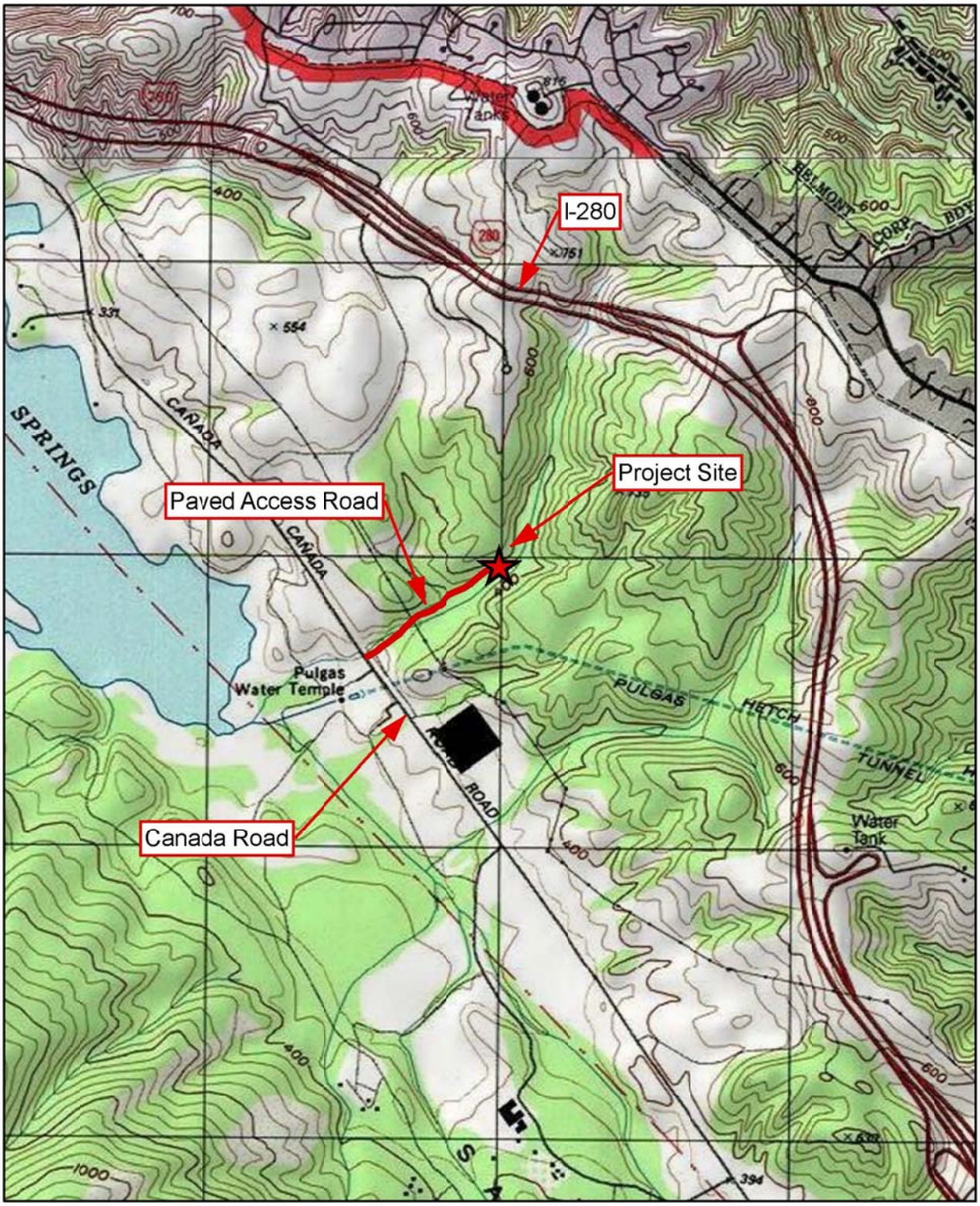
The project site is located on ~~SFPUC~~ Peninsula Watershed ~~Lands~~ lands in unincorporated San Mateo County, between I-280 and Cañada Road, east of the cities of Belmont and San Carlos and west of the SFPUC Pulgas Water Temple (Figure 1). The Peninsula Watershed ~~Lands~~ lands are generally bounded by I-280 to the east and the coastal cities and towns to the west. The predominantly residential communities of San Bruno and Pacifica are to the north and the town of Woodside is to the south. The ~~Watershed Lands~~ project site and surrounding areas are largely undeveloped and include various biological habitat types. The project site (Figure 2) is surrounded by undeveloped woodland.

The nearest land uses are SFPUC facilities, including the Pulgas Balancing Reservoir (which maintains water pressure in the transmission pipelines) approximately 0.27 mile southwest of the project site, the Pulgas Water Temple (a historic structure that commemorates the completion of the Hetch Hetchy Water System) approximately 0.36 mile southwest of the project site and west of Cañada Road, and the Pulgas Pump Station approximately 0.4 mile southwest of the project site. I-280 is located approximately 0.5 mile east of the project site. Cañada Road is approximately 0.3 mile southwest of the project site.

The nearest residential use is approximately 0.9 mile from the project site in the city of San Carlos near the intersection of Crestview Drive and Chicory Lane and the I-280 Vista Point.

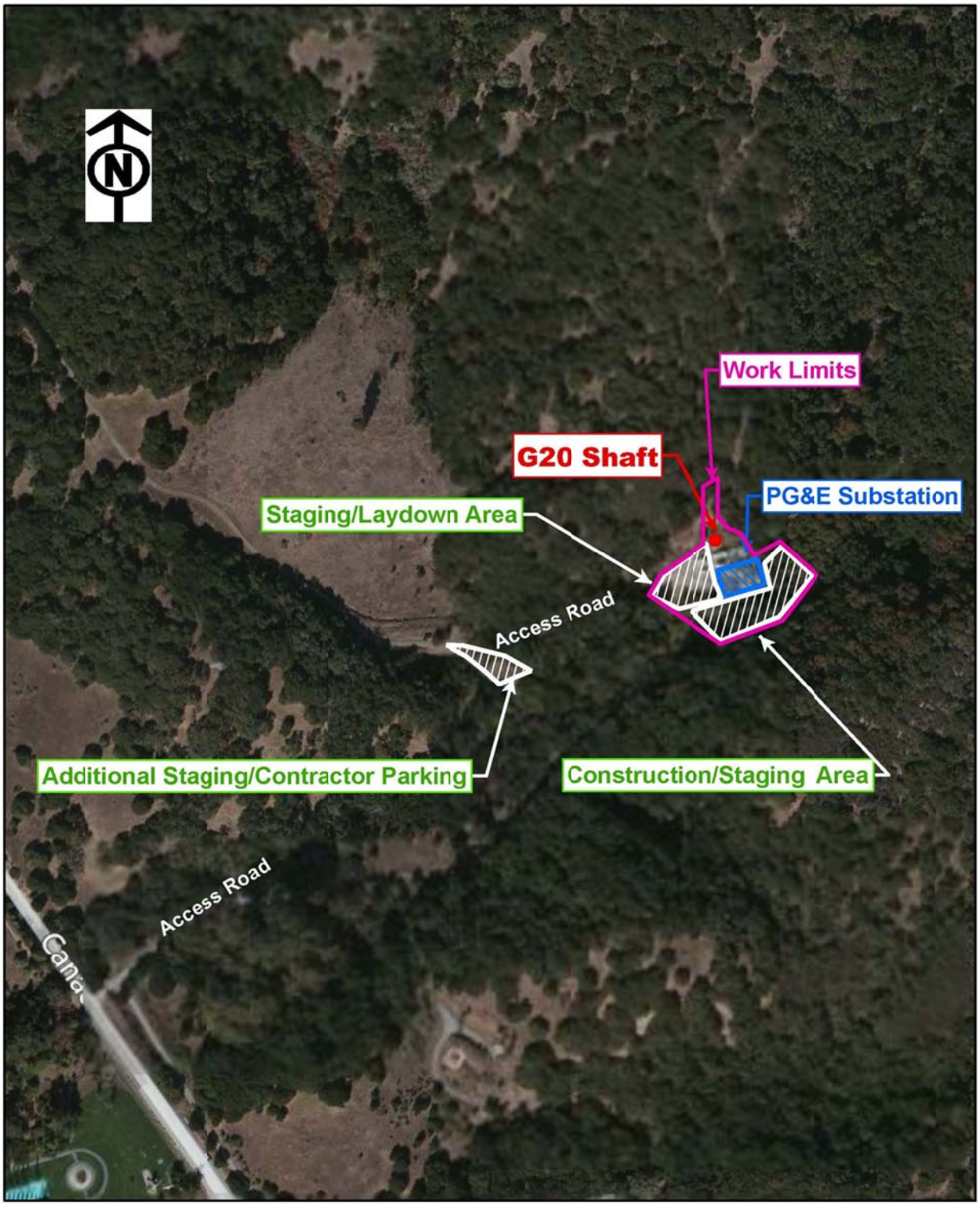
## SFPUC Peninsula Watershed Lands

The 23,000-acre Peninsula Watershed lands are operated and maintained by the SFPUC primarily for water collection and storage. The Watershed lands are operated by the SFPUC according to the policies and actions specified in the Final Peninsula Watershed Management Plan (SFPUC, 2002). The purpose of the Plan is "to provide a policy framework for the SFPUC to make consistent decisions about the activities, practices, and procedures that are appropriate on SFPUC watershed lands." The Plan provides "a comprehensive set of goals, policies and management actions which integrate all watershed resources and reflect the unique qualities of the watershed." The Peninsula Watershed ~~Lands are~~ is a designated State Fish and Game Refuge and a United Nations Biosphere Reserve.




Base Map Source: USGS Topographic Maps, ESRI ArcMap 10.0.

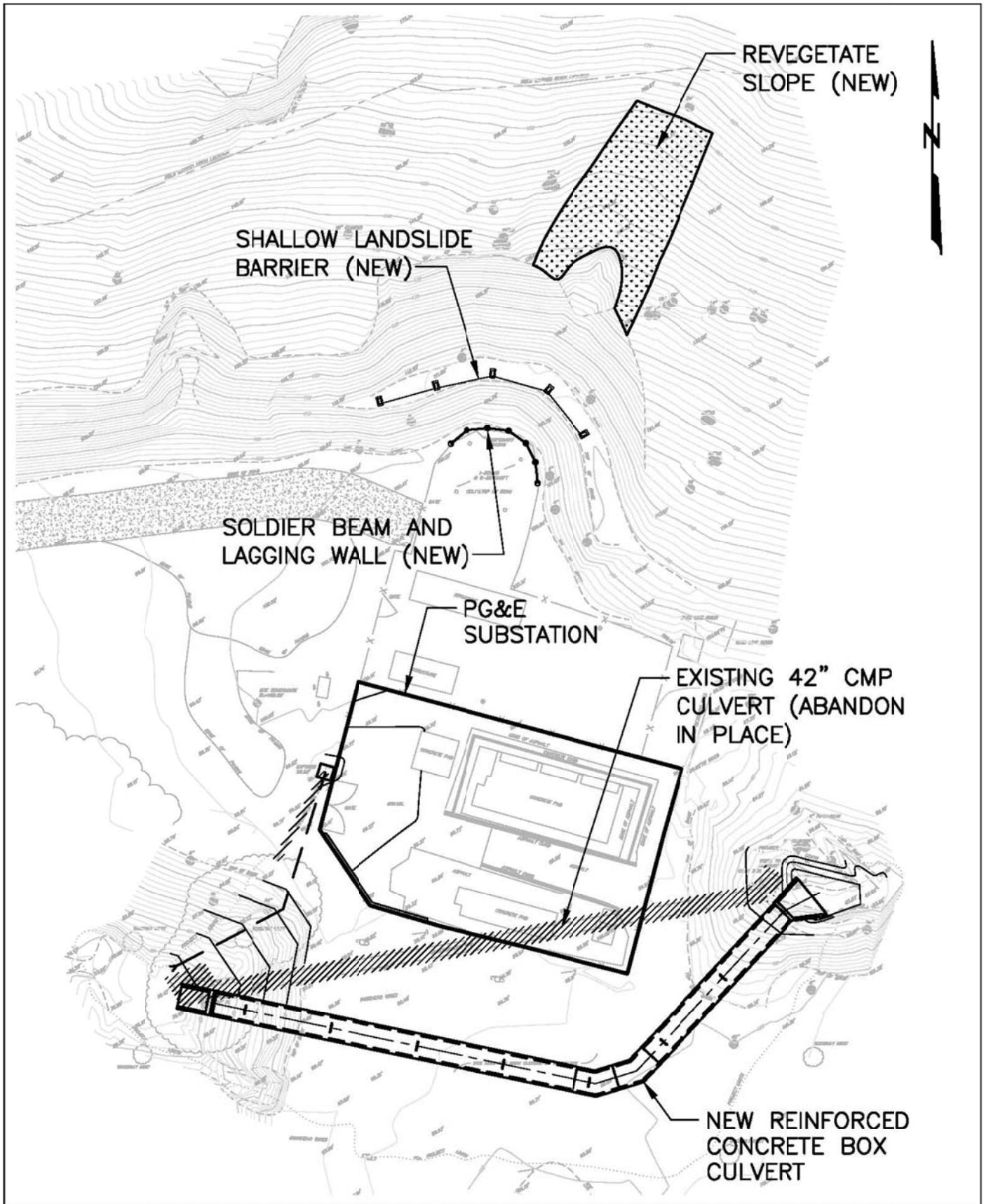
| | | |
|---|---|---|
| Hetch Hetchy Regional Water System<br>Services of the San Francisco Public Utilities Commission | PROJECT VICINITY MAP<br>PULGAS G20 SHAFT SITE DRAINAGE IMPROVEMENTS and EROSION REPAIR PROJECT<br>JULY 2012 | **FIGURE**<br>**1**<br>SF11021 |




Base Map Source: Bing Maps Hybrid, ESRI ArcMap 10.0.

Hetch Hetchy Regional Water System
Services of the San Francisco Public Utilities Commission

| PROJECT WORK AREA | FIGURE |
|---|---|
| PULGAS G20 SHAFT SITE DRAINAGE IMPROVEMENTS and EROSION REPAIR PROJECT | 2 |
| JULY 2012 | SF11021 |




| | | |
|---|---|---|
| Hetch Hetchy Regional Water System<br>Services of the San Francisco Public Utilities Commission | Project Site Plan | FIGURE |
| | PULGAS G20 SHAFT SITE DRAINAGE IMPROVEMENTS and EROSION REPAIR PROJECT | 3 |
| | JULY 2012 | SF11021 |

## B. Project Description

### Project Purpose

The proposed project would install a culvert adjacent to a PG&E electrical substation and abandon and fill with concrete the existing failed CMP culvert. The proposed project is needed to prevent future subsidence/damage to the substation. Construction of the new culvert would also alleviate potential erosion of the intermittent stream channel at the inlet and outlet of the culvert.

The project would also address ongoing erosion on the hillside above the Pulgas G20 Valve Vault north of the substation by construction of a debris fence and a shallow landslide barrier.

### Project Objectives

The project objectives are to:

- Construct a culvert that channels stormwater flows around the existing electrical substation to minimize potential erosion and damage to the substation and to areas upstream and downstream of the substation.
- Repair erosion at the hillside north of the electrical substation and the Pulgas G20 Valve Vault to prevent damage to a critical component of the SFPUC regional water transmission system.

### Project Components

The major project components include the following:

- An approximately 6-foot-wide, 200-foot-long, and 4-foot-tall concrete box culvert around the southeast and southwest corners of the electrical substation;
- A trash rack at the upstream/inlet end of the proposed culvert;
- An approximately 70-foot-long debris/silt fence (shallow landslide barrier) and a 40-foot-long soldier beam and lagging wall on the north side of the electrical substation above the Pulgas G20 Valve Vault;
- Plugging and filling of the existing failed culvert with clean concrete to prevent future damage to the electrical substation; and,
- Revegetation and restoration of eroded areas and construction work areas through plantings and hydroseeding with an approved seed mix, in conformity with the provisions of the SFPUC Peninsula Watershed Management Plan (adopted June 26, 2001).

These components are shown in Figure 3 and discussed below. Total project area, including construction, staging, and soil stockpiling, would be approximately 0.5 acre.

## Construction Activities and Schedule

Prior to the start of construction, Underground Service Alert (USA North) would identify all underground utilities and/or the contractor would excavate potholes to determine utility locations. Before initiating excavations, the contractor would delineate the construction boundary. Sheet piles or other temporary shoring walls would be installed to prevent the culvert trench from collapsing during excavation activities or installation of culvert sections, as required by state and federal Occupational Safety and Health Administration (OSHA) regulations.

Construction activities would remove approximately 13 trees, including eight arroyo willow, one pacific madrone, three coast live oak, and one toyon.

*Culvert Installation*

Construction of the new culvert would involve excavating soil to a maximum depth of 20 feet below ground surface (bgs). A trench box or other temporary shoring walls would be installed in the trench.

Once the required trench depth is reached, the bottom of the trench would be compacted and bedding material, at least 6 inches thick, would be deposited and compacted in the bottom of the trench. The bedding material would consist of a sand/gravel mixture.

Straight segments of precast concrete box culvert (PCBC) measuring 4 feet tall by 6 feet wide would be installed in the trench. The lengths of the PCBC segments would be determined by the construction contractor, but it is anticipated each segment would be 8 feet or less.

The joints between the segments would be sealed to prevent leakage.

Cast-in-place inlet and wing walls would be constructed at the culvert inlet. Riprap would be placed a minimum of 10 feet upstream of the culvert inlet structure. A trash rack would be installed at the inlet to prevent the culvert from clogging and causing overflow and erosion upstream of the substation.

A precast tapered outlet structure would be installed after the existing concrete box is demolished. Riprap would also be placed a minimum of 10 feet downstream of the culvert outlet structure.

Once the culvert is constructed, the existing corrugated metal pipeline culvert would be plugged at both ends and filled with concrete slurry to prevent further collapse.

*Debris Flow Erosion Control*

In order to control the debris flow[1] that has formed on the slope north of the Pulgas G20 Valve Vault, two debris/silt fences, each approximately 6 feet tall, would be constructed (Figure 3).

One of the fences would be installed at the toe of the slope adjacent to the Valve Vault, consisting of a soldier beam and lagging wall[2] approximately 40 feet long. The fence would be constructed of steel I-beams set in concrete post holes 6 feet deep with 4-foot by 1-foot wood slats/lagging installed between the I-beams.

The second fence would be installed at the bench upslope from the Valve Vault at the toe of the slope. This shallow landslide barrier would extend approximately 70 linear feet. Fence posts or lagging beams would be driven between 3 and 6 feet deep, and a wire mesh fence specifically designed to protect against landslides would be installed between the fence posts.

An existing eroded area measuring about 2,000 square feet and located approximately 20 feet northwest of the outer fence would be revegetated with a mix of native shrubs and trees to stabilize the slope (Figure 3). In addition, once construction is complete, the project site would be restored to pre-excavation topography, and areas temporarily disturbed by construction would be revegetated with a mix of hydroseeding and plantings.

*Construction Staging*

The proposed project includes three staging/stockpiling areas (Figure 2): (1) an approximately 2,700-square-foot area adjacent to the access road from Cañada Road to the project site, approximately 300 feet south of the PG&E substation, (2) an approximately 1,200-square-foot area north of the proposed culvert, and (3) an approximately 2,300-square-foot area south of the proposed culvert.

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[1]Debris flows are fast moving, liquefied landslides of mixed and unconsolidated water and debris that look like flowing concrete. They are differentiated from mudflows by their coarser and more poorly sorted sediment load. Flows can carry material ranging in size from clay to boulders, and may contain a large amount of woody debris such as logs and tree stumps, Wikipedia, The Free Encyclopedia, *Debris Flow*, Available online at http://en.wikipedia.org/wiki/Debris_flow. Accessed June 19, 2012.

[2] Soldier beams or piles, also known as king piles or Berlin walls, are constructed of wide-flange steel H-pile sections spaced about 2 to 3 meters apart and are driven prior to excavation. As the excavation proceeds, horizontal timber sheeting (lagging) is inserted behind the H-pile flanges. Wikipedia, The Free Encyclopedia, *Deep Foundation*, Available online at http://en.wikipedia.org/wiki/Deep_foundation, Accessed June 15, 2012.

*Construction Schedule*

Construction is expected to begin in summer 2012 or as soon as all necessary approvals and permits have been issued. Construction is expected to be completed in two to three months.

Construction would occur Monday through Friday between 7:00 am and 6:00 pm. Evening and weekend work is not anticipated; however, if the schedule needs to be condensed, extended work days until 8:00 pm and/or Saturdays between 9:00 am and 5:00 pm may be required. Construction hours would comply with San Mateo County's Construction Noise Ordinance.

*Equipment and Work Crew*

Approximately three to six construction workers would be employed at the site. **Table 1** below identifies the equipment that would be used during construction.

**Table 1 - Construction Equipment**

| Equipment | Quantity | Days of Operation (d) | Hours Operated per Day (hr/d) |
|---|---|---|---|
| Crane | 1 | 25 | 4 |
| Excavator | 1 | 60 | 6 |
| Bobcat Skid Loader | 1 | 10 | 6 |
| Drilling Auger | 1 | 10 | 6 |
| Track Loader | 1 | 60 | 4 |
| Compactor | 1 | 30 | 6 |
| Dump Truck | 1 | 60 | 6 |
| Power Generator | 1 | 60 | 4 |
| Water Truck | 1 | 2 | 4 |
| Cellular Concrete Mixer | 1 | 2 | 4 |
| Concrete Pump | 1 | 2 | 4 |
| Concrete Delivery Truck | 1 | 2 | 4 |
| Backfill Delivery Truck | 2 | 10 | 4 |
| RCP Culvert Delivery Truck | 1 | 3 | 4 |

The equipment/vehicles identified above would be employed for the following construction activities:

- An excavator would be used to remove a segment of the existing corrugated metal pipeline near the outlet and excavate the trench to install the culvert and to place riprap at the culvert inlet and outlet.
- The bobcat skid loader would be used for the initial excavation of the sloping trench and to move soil, rock, and riprap around the project site.

- A loader would be used to load dump trucks to move excavated soil to the staging/storage areas and restore the site once the culvert has been installed prior to revegetation.
- Compaction equipment would be used to compact the soil and bedding material in the trench prior to installation of the culvert and ~~to compact the soil prior~~ to revegetation.
- Paving equipment would be used to repave areas of the electric substation damaged by failure of the CMP culvert.
- Pier drilling equipment would be used to install trench shoring systems and the soldier beams for the debris fence and shallow landslide barrier.
- Concrete delivery trucks would deliver concrete to construct the cast-in-place culvert segments, repair paving in the electric substation, and cement grout to fill the corroded CMP.
- Concrete pump trucks would be used to deliver concrete to the area north of the Valve ~~vault~~ to construct the debris fence and the shallow landslide barrier.
- Dump trucks would be used to move excavated soil from the culvert trench to proposed staging/storage areas for temporary storage and replacement in the trench once construction is completed. Dump trucks would also be used to bring culvert bedding material to line the trench and riprap to install at the culvert inlet and outlet structures. The dump truck would also bring plant materials to the site for revegetation.
- A crane would be used to lower shoring systems into the excavated trench and the precast concrete box culvert segments into the trench for installation as well as lowering the steel beams into place for the debris fence and shallow landslide barrier. A flatbed truck would deliver the PCBC segments to the site along with steel reinforcing bars and wooden forms to build the cast-in-place inlet and outlet structures and the beams, wooden lagging, and fence posts for the debris fence and the shallow landslide barrier.
- Three to six pickup trucks/passenger vehicles would be used daily by construction crew members and SFPUC staff to travel to and from the project site.
- A diesel power generator may be necessary to provide backup power for equipment and vehicles used at the project site.

*Quantities of Materials and Vehicle Trips*

**Table 2** ~~below~~ represents the estimated vehicle trips and quantities of earth and materials that would be moved during excavation, construction, and restoration activities.

**Table 2 - Construction Trips and Materials**

| Work Item | Quantity Estimate |
|---|---|
| Daily Truck Trips (one way)[1] | 5 |
| Daily Work Crew/Passenger Vehicles Trips (one way) | 6 – 12 |
| Soil Handling On Site [2] | 900 – 2,000 cubic yards |
| Soil Import | 200 cubic yards |
| Soil Export | 100 cubic yards |
| Riprap Import | 25 – 40 cubic yards |
| Culvert Segments | 200 linear feet |
| Ready Mix Concrete | 100 cubic yards |
| Asphalt | 35 cubic yards |
| Steel Products (e.g. H-beams, trench shoring, rebar, fencing) | 15 tons |
| Timber Products (e.g. lagging, construction forms) | 4,000 lbs. |
| Erosion Control Products | 500 lbs. |

1) Based on a total of 200 truck trips over a two month (40 day) construction period.
2) Quantity would likely be handled twice for excavation and backfilling.

Dump trucks with a capacity of either 10 or 20 cubic yards would move imported material (bedding material and riprap) to the project site. Excavated soil would be moved from the project site to staging/storage areas within the ~~SFPUC~~ Peninsula Watershed ~~Lands~~ using 10 or 20 cubic yard dump trucks. Approximately 50 cubic yards of excess soil would be spread out onsite and approximately 20 cubic yards of construction debris would be hauled off site to a permitted landfill.

*Water Quality, Erosion and Sediment Control Plan*

The SFPUC's construction contractor would be required to develop and implement an erosion and sediment control plan as a part of contract specifications to address construction-related runoff and minimize effects on local water quality. This plan would identify best management practices (BMPs) tailored to the proposed drainage and erosion repair project. The recommended BMPs include, but are not limited to the following measures:

- Use filter fabric or other appropriate measures to contain the stock piles.
- Ensure that all construction equipment is well maintained to prevent leakage of engine fluids.
- Place drip pans under construction vehicles and all parked equipment that is stored overnight to prevent leaks of hydraulic fluids, oil, grease, or fuels from reaching the soil and local waters.
- Contain vehicle and equipment wash water for percolation or evaporative drying away from onsite drainage <u>to</u> prevent runoff into water features.
- Store diesel and construction-related chemical storage offsite, or keep in a protected bermed area away from local watercourses.
- Maintain a spill kit onsite to be used for the cleanup of oil in case of a leak or spill.

- In the event that dewatering is necessary, the following measures shall be implemented:
    - Excavation dewatering shall be conducted in compliance with local standards and discharge permit requirements, including measures to prevent sediment-laden discharges from reaching local water courses.
    - Discharges of water produced by dewatering shall be controlled to prevent erosion.
    - Sediment traps or filter fabric shall be used to catch sediment.

*Dust Control*

As required by the San Francisco Health Code Section 1247 (San Francisco Construction Dust Control Ordinance, Ordinance No. 176-08, effective July 30, 2008) and in the SFPUC's contract specifications (SFPUC, 2010), the SFPUC's construction contractor would implement basic control measures to reduce particulate matter emissions from construction activities. These measures include but are not limited to:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite will be covered.
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads will be limited to 15 mph.
- A sign will be posted with the telephone number and name of the contact person at the lead agency to call regarding dust complaints. This person will respond and take corrective action within 48 hours. The sign will be visible to the public. The air district's phone number will also be visible to ensure compliance with applicable regulations.
- Idling times will be minimized by shutting off equipment when it is not in use or by reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485, of the California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturers' specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.

*Construction and Demolition Debris Management Plan*

As required in SFPUC's contract specifications (SFPUC, 2010) and prior to the start of construction, the construction contractor would be required to prepare a construction and demolition debris management plan to estimate the types and quantities of materials that would be generated by project excavation and construction. The plan would include the following information:

- Procedures used for debris management;

- List of materials and estimated quantities to be reused, recycled or transported to an offsite facility, consistent with San Francisco's Construction and Demolition Debris Recovery Program (Ordinance No. 27-06, adopted July 1, 2006);
- Procedures that would be used for source separation for recyclable and reusable materials; and
- Procedures to educate and train all onsite workers on recycling and reuse procedures to be used at the construction work sites.

*Shoring Plan*

As required in the SFPUC's contract specifications and consistent with Section 6705 of the California Labor Code, the construction contractor would be required to prepare a shoring plan prior to the start of any trench excavation that would exceed 5 feet in depth. The shoring plan would include the details and supporting calculations of the design of shoring, bracing, sloping, or other provisions to be made for worker protection during shoring excavation work. The plan should be consistent with the shoring system standards established by the Construction Safety Orders of California's Division of Occupational Safety and Health (Cal/OSHA).

*SFPUC Standard Construction Measures*

The SFPUC has established Standard Construction Measures (SFPUC, 2007b) for all SFPUC projects. The primary objective of these measures is to reduce impacts on natural resources to the extent feasible. The measures include activities such as early identification of any sensitive species habitats in the project area and notifying businesses, owners, and residents of adjacent areas potentially affected by the project about the nature, extent, and duration of construction activities. The SFPUC project manager, environmental project manager, and contract manager would ensure that the project is implemented in accordance with these measures.

*Operations and Maintenance*

Once the project is constructed, the SFPUC would be responsible for normal maintenance of the culvert and appurtenant structures to ensure proper operation. Similar to current maintenance practices for existing SFPUC culverts on the Peninsula Watershed, SFPUC Natural Resources staff would conduct routine maintenance once per year, including removal of debris from the inlet trash rack. One or two vehicles would be required and crew size would be two or three people.

## Anticipated Permits and Approvals

Upon finalization of this Initial Study/Mitigated Negative Declaration (IS/MND), the SFPUC would consider the environmental effects of the project, as set forth in the final IS/MND, and the Mitigation Monitoring and Reporting Program ("MMRP"). The SFPUC would then review and adopt CEQA Findings and an MMRP as part of any decision to approve the project.

Proposed construction activities would affect federal jurisdictional waters and would be required to comply with Sections 404 and 401 of the Clean Water Act. Section 404 is implemented by the U.S. Army Corps of Engineers (ACOE) and Section 401 is implemented by the San Francisco Bay Regional Water Quality Control Board (RWQCB). RWQCB also has jurisdiction over state waters under the Porter-Cologne Water Quality Control Act. Because the project would affect streams

and riparian habitat, it also is required to comply with Section 1602 of the California Fish and Game Code.

The project area is within the ranges of two listed wildlife species: the San Francisco garter snake, which is federally and state-listed as endangered and a state fully protected species, and the California red-legged frog, which is federally listed as threatened. Consultation with the U.S. Fish and Wildlife Service would be initiated by the ACOE as part of compliance with Section 404 of the Clean Water Act.

The project would not require any discretionary approvals from local planning agencies.

## Other Projects in the Vicinity

Reasonably foreseeable future projects occurring in the vicinity of the proposed project that could potentially result in cumulative impacts are described and summarized below. The potential for cumulative impacts is addressed in the individual technical sections provided in Section E.

*Bioregional Habitat Restoration (BHR) Project*

The SFPUC is implementing the Bioregional Habitat Restoration (BHR) Project to provide a consolidated and coordinated approach to compensate for impacts of the Water System Improvement Program (WSIP) projects on special-status species and wetlands and other sensitive habitats. The proposed BHR Project includes preservation, restoration, enhancement, and creation of approximately 1,400 acres of habitat in four planning regions, including the Peninsula Watershed lands. The BHR Project is in various phases, including design and construction, and includes habitat restoration projects in two sites approximately two miles from the proposed project site: the Homestead Pond restoration site and the Adobe Gulch Creek/Adobe Gulch Grassland restoration sites. Both projects are currently under construction. However, vehicles traveling to and from these project sites use State Highway 92 from I-280. Construction vehicles for the BHR ~~projects~~ Project do not travel on either Cañada Road or Edgewood Road.

*San Mateo County Department of Parks Crystal Springs Regional Trail South of Highway 92 Project*

Approximately two miles north of the proposed ~~culvert~~ project site is the proposed southern terminus of the planned Crystal Springs Regional Trail South of Highway 92 Project (Personal communication, San Mateo County Planning and Building Division, June 19, 2012). Currently, 15.3 miles of the 17.5 mile trail that stretches from the City of San Bruno to the Town of Woodside is complete. The ~~proposed~~ Regional Trail project would complete the final segment to create a multiuse trail by renovating an existing service road. The project has not yet been approved or permitted for construction. Therefore, a construction schedule for the Regional Trail segment is not available.

*Pacific Gas & Electric Company Pipeline Safety Enhancement Program*

Pacific Gas & Electric Company (PG&E) is undertaking its Pipeline Safety Enhancement Program to ensure the safety and reliability of gas transmission pipelines on the ~~San Francisco~~ Peninsula Watershed. The testing and replacement program includes various projects along pipelines 109

and 132, which run north-south parallel to I-280. The projects would involve either hydrostatic testing or replacement of certain pipeline segments and automation of pipeline shut-off valves. The segment of pipeline which runs parallel to Canada Road near the culvert project site is scheduled to be replaced beginning in 2014 (Personal communication, PG&E, June 19, 2012). Valve automation on Edgewood Road near the intersection with I-280 is scheduled to begin in September 2012 and at the Half Moon Bay Tap near the intersection with Highway 92 is scheduled to begin at the end of December 2012.

*Cal Water Service District Potable Water Storage Tanks Replacement*

Cal Water Service Company is a wholesale customer of the SFPUC that provides potable water to retail customers in various jurisdictions on the San Francisco Peninsula. The Bayshore District operated by the Cal Water Service Company serves the cities of San Carlos, San Mateo, and South San Francisco. Currently, Cal Water is proposing construction of 40,000-gallon water storage tanks at two locations in the City of San Carlos: 700 Crestview Drive and 3376-3384 Melendry Drive. According to the City of San Carlos Planning Department, the projects are currently under review but are neither approved nor permitted to begin construction (Personal communication, J. Lewis, San Carlos Planning Department, June 12, 2012). Project construction is anticipated to begin in early 2013 and to be completed by the second or third quarter of 2013 (Personal communication, ~~Tony Carrasco, District Manager,~~ Cal Water Service Company, ~~Bayshore Bear Gulch District~~, June 19, 2012).

## C. Compatibility with Existing Zoning and Plans

| | Applicable | Not Applicable |
|---|---|---|
| Discuss any variances, special authorizations, or changes proposed to the San Francisco Planning Code or Zoning Map, if applicable. | ☐ | ☒ |
| Discuss any conflicts with any adopted plans and goals of the CCSF or the region, if applicable. | ☒ | ☐ |
| Discuss any approvals and/or permits from CCSF departments other than the Planning Department or the Department of Building Inspection, or from regional, state, or federal agencies. | ☒ | ☐ |

This section identifies and discusses regional and local land use plans and policies relevant to the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project and then discusses project consistency with these plans and policies. The focus of this section is the City and County of San Francisco (CCSF) land use plans and policies, which are primarily applicable to projects within the jurisdictional boundaries of San Francisco, although in some cases they may apply to projects outside of San Francisco. Although the SFPUC is not legally bound by the land use plans and policies of other jurisdictions, non-CCSF land use plans also are discussed to the extent that they provide general land use planning information for the jurisdiction in which the project is located. This information is relevant to the evaluation of project impacts with respect to specific significance criteria under CEQA that require an analysis of the compatibility of a proposed project with certain aspects of local land use plans and polices.

The project is located on CCSF-owned lands within the Peninsula ~~watershed~~ Watershed near the southern end of Upper Crystal Springs Reservoir in unincorporated San Mateo County. No

variances, special authorizations, or changes to the Planning Code are proposed as part of this project. Therefore, these issues are not discussed further. Permitting requirements are discussed above under Section B (see Anticipated Permits and Approvals).

## Regulatory Framework

*City and County of San Francisco Plans and Policies*

The San Francisco City Charter and other city plans and policies guide the management actions of the SFPUC. These plans include the *San Francisco General Plan* (CCSF, 1988), which sets forth the comprehensive, long-term land use policy for the CCSF, and the *San Francisco Sustainability Plan* (CCSF, 1997), which addresses the long-term sustainability[3] of the city. In addition, the SFPUC has adopted various plans and policies that further direct its activities, including the *Peninsula Watershed Management Plan (WMP)* and the *Water Enterprise Environmental Stewardship Policy* (SFPUC, 2006). These plans and policies, as applicable to the proposed project and other relevant plans and policies, are discussed herein.

*Extraterritorial Lands*

Under the San Francisco City Charter, Section 8B.121, the SFPUC has authority over the management, use, and control of extraterritorial lands—that is, properties outside of the San Francisco city limits that the CCSF owns or leases or over which it holds easements. Although the *San Francisco General Plan* and *San Francisco Sustainability Plan* were developed for lands within the jurisdictional boundaries of San Francisco, their underlying goals apply to SFPUC projects on extraterritorial lands. The Peninsula WMP specifically applies to CCSF-owned extraterritorial lands in San Mateo County. Section 8B.121 provides:

> Notwithstanding Charter Section 4.112, the Public Utilities Commission shall have exclusive charge of the construction, management, supervision, maintenance, extension, expansion, operation, use and control of all water, clean water and energy supplies and utilities of the City as well as the real, personal and financial assets, that are under the Commission's jurisdiction or assigned to the Commission under Section 4.132.

California Government Code Section 53090 et seq. provides that the SFPUC receives intergovernmental immunity from the zoning and building laws of other cities and counties. The SFPUC, however, seeks to work cooperatively with local jurisdictions where CCSF-owned facilities are sited outside of San Francisco to avoid conflicts with local land use plans and building and zoning codes. Also, the SFPUC is required under Government Code Section 65402(b) to inform local governments of its plans to construct projects or acquire or dispose of its extraterritorial property. The local governments have a 40-day review period to determine project consistency with their general plans. Under this requirement, the cities' or counties' determinations of consistency are advisory to the SFPUC rather than binding.

[3] Sustainability or sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs.

*San Francisco General Plan*

The *San Francisco General Plan* provides general policies and objectives to guide land use decisions. The general plan consists of 10 issue-oriented plan elements: Air Quality, Arts, Commerce and Industry, Community Facilities, Community Safety, Environmental Protection, Housing, Recreation and Open Space, Transportation, and Urban Design. The plan elements relevant to the proposed project are briefly described below.

**Air Quality Element.** This element promotes the goal of clean air planning through objectives and policies that support alternatives to the private automobile, adherence to air quality regulations, and the placement of development near transit services.

**Community Safety Element.** This element addresses the potential for geologic, structural, and nonstructural hazards to affect CCSF-owned structures and critical infrastructure. The goal of this element is to protect human life and property from hazards.

**Environmental Protection Element.** This element addresses the impact of urbanization on the natural environment. The element promotes the protection of plant and animal life and fresh water sources and speaks to the responsibility of San Francisco to provide a permanent, clean water supply to meet present and future needs and to maintain an adequate water distribution system.

**Recreation and Open Space Element.** This element contains objectives and policies related to maintaining, creating, and enhancing recreational and open space resources.

Overall, the policies of the *San Francisco General Plan* were developed for lands within San Francisco and most general plan policies are not directly relevant to the SFPUC or its extraterritorial lands.

*San Francisco Priority Policies*

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the Planning Code to establish eight Priority Policies. These policies, and the sections of this IS/MND addressing the environmental issues associated with the policies, are:

1. Preservation and enhancement of neighborhood-serving retail uses (not applicable)

2. Protection of neighborhood character (Question 1c, Land Use and Land Use Planning)

3. Preservation and enhancement of affordable housing (Question 3b, Population and Housing, with regard to housing supply and displacement issues)

4. Discouragement of commuter automobiles (Questions 5a, b, f, and g, Transportation and Circulation)

5. Protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership (Question 1c, Land Use and Land Use Planning)

6. Maximization of earthquake preparedness (Questions 13a–d, Geology and Soils)

7. Preservation of landmark and historic buildings (Question 4a, Cultural Resources)

8. Protection of open space (Questions 8a and b, Wind and Shadow, and Questions 9a and c, Recreation)

*San Francisco Sustainability Plan*

The San Francisco Board of Supervisors endorsed the *San Francisco Sustainability Plan* in 1997, although the Board of Supervisors has not committed the CCSF to perform the actions addressed in this plan. The *Sustainability Plan* serves as a blueprint for sustainability, with many of its individual proposals requiring further development and public comment. The underlying goals of the *Sustainability Plan* are to maintain the physical resources and systems that support life in San Francisco and to create a social structure that will allow such maintenance. It is divided into 15 topic areas—10 topics that address specific environmental issues (Air Quality; Biodiversity; Energy, Climate Change, and Ozone Depletion; Food and Agriculture; Hazardous Materials; Human Health; Parks, Open Spaces, and Streetscapes; Solid Waste; Transportation; and Water and Wastewater) and 5 topics that are broader in scope and cover many issues (Economy and Economic Development; Environmental Justice; Municipal Expenditures; Public Information and Education; and Risk Management). Each topic area in the *Sustainability Plan* has a set of indicators that are to be used over time to determine whether San Francisco is moving in a sustainable direction in that particular area.

*SFPUC Water Enterprise Environmental Stewardship Policy*

Adopted in June 2006, the *Water Enterprise Environmental Stewardship Policy* established the long-term management direction for CCSF-owned lands and natural resources affected by operation of the SFPUC water system within the Tuolumne River, Alameda Creek, and Peninsula watersheds. It also addresses rights-of-way and properties in urban surroundings under SFPUC management. Those portions of the policy that are relevant to the proposed project are as follows:

- The SFPUC will proactively manage the watersheds under its responsibility in a manner that maintains the integrity of the natural resources, restores habitats for native species, and enhances ecosystem function.
- To the maximum extent practicable, the SFPUC will ensure that all construction, operation, and maintenance activities associated with the SFPUC water system and infrastructure in the SFPUC Peninsula Watershed protect and restore native species and the ecosystems that support these species.

*SFPUC Peninsula Watershed Management Plan (WMP)*

The *Peninsula WMP*, adopted by the SFPUC in 2001, provides goals, policies, and management actions that address watershed activities and reflect the unique qualities of the watershed. The proposed project site is located within the boundaries of the *Peninsula WMP* area. Watershed lands are managed by the SFPUC Natural Resources Division, Land and Resource Management Section.

The Peninsula ~~watershed~~ Watershed encompasses 23,000 acres on the San Francisco Peninsula and is owned almost exclusively by the CCSF. The watershed is located in central San Mateo County, west of the I-280 freeway, and includes the San Andreas, Crystal Springs, and Pilarcitos Reservoirs. The cities of San Bruno, Millbrae, Burlingame, Hillsborough, San Mateo, Belmont, San Carlos, and Redwood City and the Town of Woodside are located east of the watershed, and unincorporated private open space is located to the west.

The SFPUC considers water quality protection as the first and foremost goal of the *Peninsula WMP*. The goals and policies are organized around the primary goal of water quality protection and six secondary goals pertaining to water supply, natural resource protection, watershed protection, land use compatibility, fiscal management, and public awareness. The primary and secondary goals of the Peninsula WMP are as follows:

Primary Goal

- Maintain and improve source water quality to protect public health and safety

Secondary Goals

- Maximize water supply
- Preserve and enhance the ecological and cultural resources of the watershed
- Protect the watersheds, adjacent urban areas, and the public from fire and other safety hazards
- Continue existing compatible uses and provide opportunities for potential compatible uses on watershed lands, including educational, recreational, and scientific uses
- Provide a fiscal framework that balances financial resources, revenue-generating activities, and overall benefits and an administrative framework that allows implementation of the watershed management plans
- Enhance public awareness of water quality, water supply, conservation, and watershed protection issues
- As part of implementation of the *Peninsula WMP*, the SFPUC reviews all plans, projects, and activities that occur within the Peninsula Ww~~w~~atershed for conformity with the *WMP* as well as for compliance with environmental codes and regulations. To accomplish this, the SFPUC has established a project review team with members that include staff of various SFPUC departments as well as the City Attorney's office. Proposals for new facilities, structures, roads, trails, projects and leases, or improvements to existing facilities are reviewed by appropriate SFPUC personnel. Projects subject to this review include those that involve construction, digging or earthmoving, clearing, use of hazardous materials, or other disturbance to watershed resources. In addition, projects that involve the issuance of new or revised leases and permits are subject to this review procedure.

## Other Land Use Plans and Policies

Several federal, state, and regional agencies have adopted land use plans that establish guidelines regarding appropriate land uses and activities within the boundaries of their respective plans.

*U.S. Department of the Interior, Golden Gate National Recreation Area – Scenic Easement and Scenic and Recreation Easement*

In 1969, the CCSF granted two easements over the vast majority of the Peninsula Ww~~w~~atershed to the Department of the Interior. The easements were granted to the federal government in order to reroute I-280 to a less environmentally damaging location farther east of Crystal Springs Reservoir. The easements cover nearly all of the CCSF-owned Peninsula Ww~~w~~atershed lands, including the proposed project site, and place restrictive covenants on any uses unrelated to utility purposes. Specific provisions of the easement applicable to the proposed project include:

- The land shall be preserved in its present natural state and shall not be used for any purpose other than for the collection, storage, and transmission of water; protection of water quality; and other purposes which shall be compatible with said use and preserving said land as open-space land;
- No structures shall be erected upon said land except such structures as may be directly related to and compatible with the aforesaid uses. No trailer shall be placed, used, or maintained on said land as a substitute for a caretaker's residential building. The design and location of all buildings, except water utilities buildings and appurtenances, shall be subject to the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior;
- No signs, billboards, or advertisements, excepting directional signs and identification signs in connection with permitted uses, shall be displayed or placed upon the land;
- Except as required to accomplish the improvements hereinafter permitted or as otherwise permitted to the Grantor hereunder, the general topography of the landscape shall be maintained in its present condition and no substantial excavation or topographic changes shall be made without the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior; and
- Except as required to accomplish the purposes and uses herein permitted to the Grantor, there shall be no cutting or permitting of cutting, destroying, or removing any timber or brush without the concurrence in writing by a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

In 1980, Congress transferred responsibility for administration of the easements to the National Park Service/Golden Gate National Recreation Area (NPS/GGNRA). The Peninsula Ww~~w~~atershed is not part of a national park or recreation area because the CCSF retains ownership of the land. The NPS can object to development that is unrelated to utility management or other uses that are not permitted by the terms of the easements.

*California Department of Fish and Game, Game Refuge Designation*

In 1931, at the request of the SFPUC, the CDFG designated the Peninsula W~~w~~atershed as a game refuge. Pursuant to Section 10500 et seq. of the California Fish and Game Code, the "taking"[4] of birds or mammals or the use of firearms (or other weapons used for the purpose of taking birds or mammals) within the Peninsula W~~w~~atershed is prohibited without specific authorization. The proposed project site is located within the CDFG designated game refuge.

*General Land Use Plans and Policies of Other Jurisdictions*

The proposed project is located in unincorporated San Mateo County, but is located on extraterritorial lands owned by the CCSF. Although the SFPUC is not legally bound by the land use plans and policies of other jurisdictions, non-CCSF land use plans are discussed in this section to the extent that they provide land use planning information for the jurisdictions in which the project is located.

*San Mateo County General Plan*

Taken as a whole, the *San Mateo County General Plan* seeks to provide a quality living environment that balances natural resource protection with economic, urban, and rural uses. The plan consists of a series of goals and objectives, general policies, and regulations for development designed to achieve its overall goal. The plan promotes the conservation, enhancement, protection, maintenance, and managed use of the county's vegetative, water, fish, and wildlife resources. To protect sensitive habitats, the plan designates sensitive habitat areas, establishes buffer zones around sensitive habitat areas, and regulates the location, siting, and design of development in sensitive habitats. To protect vegetative, water, fish, and wildlife resources, the plan requires that development proposals minimize the removal of vegetation, the alteration of water resources, and the disruption of wildlife and their habitats. The plan promotes programs that repair and/or enhance damaged vegetative, water, fish, and wildlife resources and sensitive habitats, with the goal of returning them to their natural condition.

## Consistency Evaluation

*Approach to Analysis*

The evaluation of plan consistency is based on the applicability of relevant land use plans and policies to the proposed project as they relate to:

- The underlying goals of the *San Francisco General Plan* and *San Francisco Sustainability Plan* and the principal goals of the *SFPUC Peninsula WMP* and *Water Enterprise Environmental Stewardship Policy*
- Federal, state, or regional land use plans and policies applicable to the project where these agencies hold easements

[4] The term "taking" means to kill, harass, or disturb species or their habitats.

Because the policy language found in a land use plan is susceptible to varying interpretations, it is often difficult to determine whether a proposed project is consistent or inconsistent with such policies. Further, because land use plans often contain numerous policies emphasizing differing legislative goals, a project may be consistent with a general plan, taken as a whole, even though it may appear to be arguably inconsistent with specific policies within the plan. The board or commission that enacted the plan or policy generally determines the meaning of such policies; these interpretations prevail if they are "reasonable," even though other reasonable interpretations are also possible. In light of these considerations, the consistency evaluation in this IS/MND represents the best attempt to advise the decision-makers as to whether the proposed project is consistent with applicable land use plans and policies.

## Consistency with San Francisco Plans and Policies

*San Francisco General Plan*

As described above, the *San Francisco General Plan* addresses elements such as air quality, community safety (including protection from geologic and seismic hazards), environmental protection (including protection of water resources, biological resources, and other natural resources as well as consideration of construction-related noise and ambient air quality), and urban design (including protection of historical and visual resources). The *San Francisco General Plan* provides general policies and objectives to guide land use decisions. Any conflicts between the proposed project and policies that relate to physical environmental issues are discussed in Section E, Evaluation of Environmental Effects. The compatibility of the proposed project with general plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision to approve or disapprove the proposed project. Any potential conflicts identified during this process would not alter the physical environmental effects of the proposed project.

The proposed project would protect electrical facilities serving the SFPUC's water transmission and treatment facilities to meet customer water needs. Although these improvements could result in impacts on natural resources, implementation of the mitigation measures identified in this IS/MND would mitigate such impacts to less than significant levels.

*San Francisco Priority Policies*

Of the eight Priority Policies, only the last two would be potentially relevant to the proposed project. The remaining six policies would not be relevant because the project would be constructed outside of San Francisco, be located away from San Francisco neighborhoods, have no effect on or create the need for affordable housing, not result in any commuter automobiles, not adversely affect earthquake preparedness, and not result in commercial office development.

Project implementation would have no long-term effect on open space. There is no potential for adverse effects on historic structures in the vicinity of the project site.

*San Francisco Sustainability Plan*

The *San Francisco Sustainability Plan* was developed for the purpose of addressing San Francisco's long-term environmental sustainability. The project would not increase water demand or use and would maintain the physical resources and systems that support life in San Francisco. Therefore,

the project would fully comply with and help implement related goals of the *San Francisco Sustainability Plan.*

*SFPUC Water Enterprise Environmental Stewardship Policy*

As described below, project-related improvements located in the Peninsula W~~w~~atershed would be required to comply with the respective WMP policies, actions, and design guidelines and feasible mitigation measures. Thus, the project would be consistent with the underlying goals of the *Water Enterprise Environmental Stewardship Policy*, particularly with respect to the portions of the policy related to watershed management.

*SFPUC Peninsula Watershed Management Plan*

The *Peninsula WMP* is designed to guide the SFPUC's activities with respect to its watershed lands and operation of the regional water system to ensure protection and restoration of watershed resources. As part of implementing the *Peninsula WMP*, the SFPUC Natural Resource Division would review the proposed project for conformity with the *Peninsula WMP* as well as for compliance with environmental codes and regulations. As a result of this watershed project review process, the project would be implemented in a manner consistent with the WMPs.

*U.S. Department of the Interior, Golden Gate National Recreation Area – Scenic Easement and Scenic and Recreation Easement*

Project implementation would involve protecting electrical utility facilities in the Peninsula watershed. Implementation of these improvements is an exercise of the CCSF's reserved rights under the terms of both easements.

*California Department of Fish and Game, Game Refuge Designation*

Project implementation would not result in the unauthorized takings of birds or mammals in the Peninsula W~~w~~atershed.

*Local General Plans*

As described above, the SFPUC is not legally bound by the policies contained in the general plans of local jurisdictions. Determinations of project consistency with general plans would be made by the pertinent land use jurisdictions following preparation of this CEQA documentation and notification by the SFPUC pursuant to state law. The proposed project would maintain the delivery reliability of the SPFUC regional water system by ensuring adequate electrical services to the water transmission and treatment facilities. Regarding project consistency with local goals related to resource protection, this IS/MND systematically identifies the significant environmental impacts associated with implementation of the project as well as feasible measures to avoid or substantially lessen such effects. The significance criteria used in this IS/MND dovetail with the intent of general plan goals and policies related to protecting the environment. As detailed throughout the remaining sections of this IS/MND, most of the environmental impacts attributable to the project are associated with construction, and these impacts would be reduced to less-than-significant levels, either through measures proposed as part of the project or otherwise committed to by the CCSF.

## D. Summary of Environmental Effects

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

| | | |
|---|---|---|
| ☐ Land Use | ☐ Air Quality | ☒ Biological Resources |
| ☐ Aesthetics | ☐ Greenhouse Gas Emissions | ☐ Geology and Soils |
| ☐ Population and Housing | ☐ Wind and Shadow | ☐ Hydrology and Water Quality |
| ☒ Cultural and Paleo. Resources | ☐ Recreation | ☐ Hazards/Hazardous Materials |
| ☐ Transportation and Circulation | ☐ Utilities and Service Systems | ☐ Mineral/Energy Resources |
| ☐ Noise | ☐ Public Services | ☐ Agricultural and Forest Resources |
| | | ☒ Mandatory Findings of Significance |

This initial study examines the proposed project to identify potential effects on the environment. For each item on the Initial Study checklist, the evaluation has considered the impacts of the proposed project both individually and cumulatively. All items on the Initial Study Checklist that have been checked "Less than Significant Impact with Mitigation Incorporated," "Less than Significant Impact," "No Impact," or "Not Applicable" indicate that, upon evaluation, staff has determined that the proposed project could not have a significant adverse environmental effect relating to that issue. A discussion is included for those issues checked "Less than Significant Impact with Mitigation Incorporated" and "Less than Significant Impact" and for most items checked with "No Impact" or "Not Applicable." For all of the items checked "No Impact" or "Not Applicable" without discussion, the conclusions regarding potential significant adverse environmental effects are based upon field observation, staff experience and expertise on similar projects, and/or standard reference material available within the Planning Department, such as the Department's *Transportation Impact Analysis Guidelines for Environmental Review*, or the California Natural Diversity Data Base and maps, published by the California Department of Fish and Game. For each checklist item, the evaluation has considered the impacts of the project both individually and cumulatively. The items checked above have been determined to be "Less than Significant with Mitigation Incorporated."

## E. Evaluation of Environmental Effects

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **1. LAND USE AND LAND USE PLANNING—** Would the project: | | | | | |
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Have a substantial impact upon the existing character of the vicinity? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact LU-1: The proposed project would not physically divide an established community. (No Impact)**

The project site is located at the southern end of Upper Crystal Springs Reservoir on SFPUC Peninsula W~~w~~atershed lands within unincorporated San Mateo County. There are no established communities in the project area; the land is undeveloped and managed for water collection and storage. Given the scale of construction activities and minimal surface features (debris fences), the project would not have the potential to affect nearby land uses. Therefore, there would be no impact.

**Impact LU-2: The proposed project would be consistent with applicable land use plans, policies, and regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (No Impact)**

The SFPUC adopted the *Peninsula WMP* to guide the SFPUC's activities with respect to its watershed lands and operation of the regional water system to ensure protection and restoration of watershed resources. The primary goal of the WMP is to maintain and improve source water quality to protect public health and safety. The proposed project aims to protect an existing PG&E substation so that it would continue to serve the SFPUC's critical water transmission and treatment facilities in the Peninsula Watershed. The proposed project would therefore facilitate the protection of water quality, consistent with the primary goal of the WMP. Moreover, the SFPUC Natural Resource Division would review the proposed project for conformity with the *Peninsula WMP* and compliance with applicable environmental codes and regulations. As a result of this review process, the project would be implemented in a manner consistent with the WMP. The proposed project would not conflict with any other plans, policies, or regulations such that an adverse physical change would result. Therefore, there would be no impact.

**Impact LU-3: The proposed project would not have a substantial impact upon the existing character of the vicinity. (No Impact)**

Surrounding land uses consist of open space and other water supply facilities. The proposed project would be located underground and would improve the integrity of the PG&E electrical substation serving SFPUC facilities. The proposed erosion control fences would not alter the existing land use character of the vicinity, which consists of water and electrical utility infrastructure. No encroachment into the surrounding open space would occur. Construction activities would not be visible from public view points. Therefore, there would be no impact on the existing character of the vicinity.

**Impact C-LU: The proposed project, in combination with past, present and reasonably foreseeable future projects in the vicinity of the site, would not result in significant cumulative impacts related to land use. (No Impact)**

The proposed project would not alter or affect the land use of the project area or its vicinity and therefore has no impacts on land use. As such, the proposed project would also not contribute to any cumulative land use impact.

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| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **2. AESTHETICS—Would the project:** | | | | | |
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and other features of the built or natural environment that contribute to a scenic public setting? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or substantially affect other people or properties? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact AE-1: The proposed project would not have a substantial adverse effect on scenic vistas or scenic resources. (No Impact)**

The project is located in an existing developed site that contains a PG&E substation and water substation. The site is surrounded by natural woodland. The proposed culvert would be below ground. The only above ground structure that would be constructed by the project is the fence to catch debris flow and riprap at the inlet and outlet of the proposed culvert, which would result in minor changes to the appearance of the project site. Because the proposed project area is surrounded by dense woodland, it is not visible from any public roadways or vistas. Therefore no impact on scenic vistas would result from the project.

**Impact AE-2: The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. (No Impact)**

The project would not result in any significant changes to the appearance of the existing site, which is developed with an electrical substation and water pump station. The project would not encroach into the surrounding woodlands. The proposed project would not result in construction-related impacts on scenic vistas that can be seen by the public, as the project site is not visible from Cañada Road or I-280. Therefore, there would be no impacts on the visual character of the project area.

**Impact AE-3: The proposed project would not create a new source of light and glare. (No Impact)**

The project does not include the installation of any permanent outdoor lighting, nor would construction require use of temporary lighting for nighttime construction. There would be no impact related to this topic during construction and operation of the project.

**Impact C-AE: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant impact on aesthetics. (No Impact)**

As discussed above, the proposed project would not have any impacts on aesthetics and would therefore not result in any cumulative impacts on aesthetics.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **3. POPULATION AND HOUSING— Would the project:** | | | | | |
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact PH-1: The proposed project would not induce substantial population growth in San Francisco, either directly or indirectly. (No Impact)**

The purpose of the proposed project is to install a new culvert and abandon the existing failing culvert (which would be filled with concrete) to protect the PG&E electrical substation from future damage. Although the new culvert would be larger than the existing culvert, the inlet structure would continue to limit flow into the culvert at the same rate as existing conditions. The new culvert was designed as a box culvert to provide easier access for maintenance.

No increase in utility or infrastructure capacity, or housing would result from the project. Therefore, the proposed project would have no impact related to population growth.

**Impact PH-2: The proposed project would not displace substantial existing housing units or create demand for additional housing, necessitating the construction of replacement housing. (No Impact)**

There is no housing in the project area or its vicinity. The project is located in an undeveloped area of SFPUC's Peninsula Watershed Lands, and is zoned for resource management. The land cannot be developed under San Mateo County zoning. Therefore the project would have no impact related to displacement of housing or the need for additional housing.

**Impact PH-3: The proposed project would not displace substantial numbers of people, necessitating the construction of replacement housing. (No Impact)**

As described in Impact PH-2, the project is located in undeveloped Peninsula Watershed Lands zoned for resource management where construction of housing is not permitted and where no housing currently exists. No people would be displaced for construction of the project. Therefore, the project would have no impact.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **4. CULTURAL AND PALEONTOLOGICAL RESOURCES—** Would the project: | | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☒ | ☐ | ☐ | ☐ |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☒ | ☐ | ☐ | ☐ |

## Approach to Analysis

The cultural resources analysis describes potential impacts on historical, archaeological, and paleontological resources, including the potential disturbance of human remains during construction activities. The assessment of project impacts on cultural resources is a two-step process:

1) Determine the potential for the presence of cultural resources (i.e., archaeological, historic architecture, or paleontological resources) within the CEQA Area of Potential Effect (C-APE) at the project site.

2) If the project area is likely to contain a cultural resource, then determine whether the project could cause a substantial adverse change to the resource.

C-APE would be the entire limit of work presented on Figure 2. The staging area adjacent to the access road is not a part of the C-APE because no ground disturbing activities would occur; the site would only be used for parking and equipment staging. Ground disturbance for the project is limited to the 200 feet long, 30 feet wide, and 20 feet deep culvert installation trench.

A records search was conducted at the Northwest Information Center of the California Historical Resources Information System (NWIC) at Sonoma State University on March 6, 2008 (File No. 07-10789) for the Pulgas Balancing Reservoir Structural Rehabilitation and Roof Replacement Project, which is located 0.27 mile southwest of the proposed project (Planning Department Case Number 2009.0134E, Final Mitigated Negative Declaration Amended May 14, 2009). The records search encompasses the C-APE of the proposed culvert project area. The records were accessed by utilizing the Woodside, California, U.S. Geological Survey 7.5-minute quadrangle base maps. The records search, which included the C-APE and a half-mile radius around the C-APE (which includes the subject culvert project area), was conducted to: (1) determine whether known

cultural resources had been recorded within or adjacent to the C-APE; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources. During the records search, the following sources for information on historical resources were reviewed: the *California Inventory of Historical Resources* (OHP, 1976), *California Historical Landmarks* (OHP, 1990), *California Points of Historical Interest* (OHP, 1992), and *Historic Properties Directory Listing* (OHP, 2007). The Historic Properties Directory includes listings of the National Register of Historic Places and the California Register of Historical Resources, and the most recent listings of California Historical Landmarks and California Points of Historical Interest. Historical maps, including the 1855 General Land Office Plat and the 1908 Santa Cruz quadrangle showing intensity and faults, were also reviewed.

In addition, a geologic map review and assessment of potential paleontological resources was conducted to determine whether the C-APE: (1) is underlain by geologic materials known to contain paleontological resources, and/or (2) contains any known fossil localities (or is in proximity to known fossil localities within the same or similar geologic unit). Geologic information was obtained from published geologic maps (Helley and Lajoie, 1979; Brabb and Pampeyan, 1998; Brabb et al., 1998), and available paleontological information necessary for the assessment was obtained through the University of California Museum of Paleontology (UCMP) Collections Database for San Mateo County (UCMP, 2007). The UCMP database lists paleontological sites throughout the San Francisco Bay Area and includes information on geologic units that contain paleontological resources (i.e., fossilized plants, animals, invertebrates, or microfossils). The potential to encounter paleontological resources would be considered high if the C-APE were located in a fossil-bearing geologic unit and if there were several nearby or regional fossil localities in the same geologic unit. The potential would be considered low if the proposed project were located in a geologic formation that is not typically fossil-bearing and no (or very few) recorded fossil localities exist in the geologic material.

The results are summarized below as they relate to impacts under CEQA.

**Impact CP-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code. (No Impact)**

This section discusses historical resources of the built environment (i.e., structures, buildings, and objects). An evaluation of archaeological resources is provided in the discussion under Impact CP-2, below.

CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. An historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR), or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California.

The CRHR includes resources that have been listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP), as well as some California State Landmarks and Points of Historical Interest. Under U.S. Department of the Interior, National Park Service

guidelines (USDOI NPS, 1997) buildings, structures, and objects usually need to be more than 50 years old to be eligible for listing in the NRHP. The California Office of Historic Preservation guidelines for project review and planning call for the identification and evaluation of resources that are more than 45 years old to account for the passage of time between the period of project review and project completion. Resources that are less than 50 years old are generally excluded from listing in the NRHP or CRHR, unless they can be shown to be exceptionally important.

There are no listed or eligible historic resources on the project site. The Mid-Peninsula Water District water pump station was constructed in 1966 and the PG&E substation was constructed in 1975, neither of which would be eligible for listing. The nearest listed or eligible historic resource is the Pulgas Water Temple, located 0.36 miles away. Due to the lack of historic resources on site, the proposed project would have no impacts related to causing a substantial adverse change in the significance of a historic resource.

**Impact CP-2: The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. (Less than Significant with Mitigation)**

As mentioned above, CEQA requires the lead agency to consider the effects of a project on archaeological resources and to determine whether any identified archaeological resource is an historical resource. CEQA Guidelines Section 15064.5 also requires consideration of potential project impacts on "unique" archaeological resources that do not qualify as historical resources. Public Resources Code (PRC) Section 21083.2 defines a unique archaeological resource as 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 one or more of the following criteria: (1) contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information; (2) has a special and particular quality, such as being the oldest of its type or the best available example of its type; and/or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person. PRC Section 15064.5(c)(4) provides that, if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of a project on the resource are not considered significant.

*Records Search Results*

Based on the archaeological record search conducted for the Pulgas Balancing Reservoir Structural Rehabilitation and Roof Replacement Project, one prehistoric site, CA-SMA-147, is located approximately 0.3 mile away from of the Pulgas Water Temple and 0.7 mile from the project site. The site was first recorded in 1971 during "construction of a small holding pond at the south end of Crystal Springs Reservoir" where workers observed a bowl mortar in an adjacent oak grove (Salzman, 1984). Additional surveying found a site on top of a knoll to the south of the holding pond. From 1972 to 1977, the College of San Mateo conducted an archaeological field school at the site that was ultimately the subject of a 1984 master's thesis completed at San Francisco State University (Salzman, 1984). The excavation revealed the site to be an extensive shell midden with lithics, faunal remains, human-modified animal bones, other artifact types, and at least 14 human interments. The artifact assemblage, faunal analysis, and radiocarbon dates suggest the site was occupied year-round toward the end of the Middle or

Upper Archaic Period (500 B.C. to A.D. 1000)—a period represented by a more sedentary adaptation and the development of small villages.

Two additional prehistoric sites are located within a one-mile radius of the Pulgas Balancing Reservoir Structural Rehabilitation and Roof Replacement Project C-APE. CA-SMA-125 is approximately 1.2 mile away from the proposed culvert project. The site is a 100-square-meter shell midden excavated by Cañada College from 1971 to 1976. Large quantities of *Olivella* beads, chert and obsidian tools and debitage, faunal remains, and numerous human burials were uncovered at the site. CA-SMA-126 is located approximately one-half mile from the project site at the edge of Crystal Springs Reservoir. The site, a shallow shell midden that is subject to fluctuating Reservoir water levels, contained at least six human burials (Salzman, 1984). In her thesis, Salzman argues that site complexes, rather than individual sites, should be examined in order to understand the Peninsula's patterns of subsistence, economics, and social and political interaction (Salzman, 1984).

The proposed project area was heavily disturbed from previous grading and staging activities when the PG&E electrical substation was first constructed. When the substation was constructed, the sloping topography was graded to create a level surface for construction. The former creek bed was filled and the existing culvert installed. The proposed culvert alignment would be located in material previously graded and filled to construct the substation.

Due to heavy previous disturbance and limited areas of excavation within artificial fill, it appears unlikely that the project would impact archaeological resources. However, the general project vicinity is highly sensitive for prehistoric cultural resources, including human burials. Impacts on archaeological deposits or features that may qualify as historical resources or unique archaeological resources would be potentially significant. In the event that cultural resources and/or human remains are unearthed during construction, implementation of **Mitigation Measure M-CP-2: Accidental Discovery Measures** includes requirements to be implemented during construction activities to address any accidental discoveries of potential cultural resources in the project area. Impacts associated with the disturbance of human remains are discussed below under Impact CP-4. Potential project impacts on archaeological resources (either historical resources or unique archaeological resources) would be less than significant with mitigation.

Following installation of the culvert, the contractor would backfill excavations and restore the affected areas, and there would be no further soil disturbance. Therefore, there would be no potential to encounter archaeological resources during operation of the proposed project.

**Mitigation Measure M-CP-2: Accidental Discovery of Archaeological Resources.**

The following mitigation measure is required to avoid any potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in *CEQA Guidelines* Section 15064.5(a)(c). The SFPUC shall distribute the Planning Department archaeological resource "ALERT" sheet to the project prime contractor and require the prime contractor to distribute it to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms) or utilities firm involved in soils disturbing activities within the project site. Prior to any soils disturbing activities being undertaken each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, supervisory personnel, etc. The SFPUC shall provide the

Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the "ALERT" Sheet.

Should any indication of an archaeological resource be encountered during any soils disturbing activity of the project, the project Head Foreman and/or the SFPUC shall immediately notify the ERO and shall immediately suspend any soils disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.

If the ERO determines that an archaeological resource may be present within the project site, the SFPUC shall retain the services of a qualified archaeological consultant, based on standards developed by the Planning Department archaeologist. Selection of the archaeological consultant shall be subject to ERO approval. The archaeological consultant shall advise the ERO as to whether the discovery is an archaeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the SFPUC.

Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological testing program. If an archaeological monitoring program or archaeological testing program is required, it shall be consistent with the Environmental Planning division guidelines for such programs. The ERO may also require that the SFPUC immediately implement a site security program if the archaeological resource is at risk of vandalism, looting, or other damaging actions.

The project archaeological consultant shall submit a Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describing the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.

Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound copy, one unbound copy, and one unlocked, searchable PDF copy on CD three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.

**Impact CP-3: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (Less than Significant with Mitigation)**

Paleontological resources along the San Francisco Peninsula consist of the fossilized remains of plants and animals, including vertebrates (animals with backbones) and invertebrates (e.g., starfish, clams, ammonites, and marine coral). Fossils of microscopic plants and animals, or microfossils, are also considered in this analysis. The age and abundance of fossilized remains depend on the location, topographic setting, and particular geologic formation in which the fossils are found.

This analysis evaluates the potential to encounter or disturb paleontological resources as a result of project implementation based on the number of known fossil localities in the region, the geologic formations (units) where these fossils occur, and the proximity of fossil-bearing geologic units relative to the project area.

Most fossils in the Peninsula and San Francisco areas are found along the Pacific Coast in the younger (Pliocene, 5.3 to 1.8 million years ago) marine units, such as the Purisima Formation, Monterey Formation, Butano Formation, Colma Formation, and Merced Formation, and in locations within the outcropping marine units in the San Cruz Mountains. Fossils found along the coast include vertebrates (e.g., extinct camels, horses, and sea mammals) and invertebrates (e.g., clams and corals). Fossil localities diminish along the eastern flank of the Santa Cruz Mountains, likely due to the presence of chaotically mixed and severely fractured Franciscan Complex bedrock and geologically younger alluvial deposits in the upland foothills.[5]

The geologic materials directly underlying the project area are varied, and consist of alluvial fan and fluvial deposits over older formations (Butano Sandstone/Whiskey Hill Formation), juxtaposed by local faulting against the highly fractured melange sequence of the Franciscan Complex (Brabb et al., 1998).

The Whiskey Hill Formation—a geologic unit containing sandstone, siltstone, and claystone—is exposed at the NE corner of the Pulgas Balancing Reservoir (GTC, 2006) and also underlies the project area. This unit was previously mapped as the Butano Sandstone. However, in 1993, the U.S. Geological Survey determined that the Butano Sandstone was actually comprised of two similar sandstones that were indistinguishable in lithology and age but separated by the San Andreas–Pilarcitos Fault System, and that had different stratigraphic relations to other geologic units.[6] As a result, the bedrock unit in the vicinity of Crystal Springs Reservoir is now identified as the Whiskey Hill Formation (for clarity, this formation is referred to as the Butano Sandstone/Whiskey Hill Formation below). The UCMP Collections Database has 83 Butano Sandstone fossil localities recorded in three areas of San Mateo County, but does not list the Whiskey Hill Formation. These areas are a considerable distance from the project site (the recorded sites are near the Stanford Linear Accelerator, Hoffman Creek near Loma Mar, and

[5] Fossils are rarely found in the Franciscan Complex bedrock of the Coast Range Province; any fossil remains originally present in the rock would not likely remain, because the Franciscan Complex in this area is a chaotically mixed and fragmented mass of rock in a sheared matrix.

[6] Some references prepared prior to 1993, such as the Geologic Map of San Mateo County (Brabb and Pampeyan, 1998), show the Butano Sandstone instead of the Whiskey Hill Formation.

Corta Madera Creek in Portola Valley). The Butano Sandstone/Whiskey Hill Formation in this area is highly fractured and sheared due to the presence of the San Andreas Rift Zone. An unnamed fault near the Pulgas Balancing Reservoir site puts the Whiskey Hill Formation against the highly fractured, older Franciscan Melange (part of the Franciscan Complex).

The proposed excavation to install the culvert, with a maximum depth of 20 feet, would only extend into previously disturbed material. The project would disturb about 1,000 cubic yards of fill material. It is unlikely that the Butano Sandstone/Whiskey Hill Formation would be encountered due to the amount of fill on site. If the excavation did encounter the Butano Sandstone/Whiskey Hill Formation, the likelihood of disturbing a paleontological resource would be low because, as stated above, this formation is composed of highly fractured and sheared rock and is not known to contain fossils in this locale. However, in the event that fossil remains are identified, the contractor must comply with **Mitigation Measure M-CP-3: Suspend Construction Work if Paleontological Resource is Identified**, which requires that construction work will be suspended immediately if there is any indication of a Paleontological Resource. With the mitigation measure, the proposed project would not destroy paleontological resources, and therefore, the potential impact would be less than significant with mitigation.

**Mitigation Measure M-CP-3: Suspend Construction Work if Paleontological Resource is Identified**

This mitigation measure requires that construction work will be suspended immediately if there is any indication of a paleontological resource. When a paleontological resource (fossilized invertebrate, vertebrate, plant or micro-fossil) is discovered at the project site, an appointed representative of the SFPUC will notify a qualified paleontologist, who will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. When a fossil is found during construction, excavations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards (SVP 2010). The paleontologist will notify the SFPUC to determine procedures to be followed before construction is allowed to resume at the location of the find. If the SFPUC determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effects of the project.

**Impact CP-4: The proposed project could disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)**

Because the project entails ground disturbance, it is possible, although unlikely, that undiscovered burials could be encountered during construction, which would be a significant impact. Implementation of **Mitigation Measure M-CP-4: Treatment of Human Remains and Associated or Unassociated Funerary Objects** would reduce this impact to a less-than-significant level by ensuring proper treatment of any human burials that might be encountered during excavation.

The proposed project is subject to the provisions of California Health and Safety Code Section 7050.5 with respect to the discovery of human remains. PRC Section 5097.98 regulates the treatment and disposition of human remains encountered during project grading and construction.

A sacred lands search request was submitted to the Native American Heritage Commission (NAHC) on February 19, 2009 for the Pulgas Balancing Reservoir Structural Rehabilitation and Roof Replacement Project and a response from the NAHC was received on February 26, 2009 (CNAHC, 2009). The records search of the sacred land file failed to indicate the presence of recorded Native American cultural resources in the project vicinity, including the proposed project area. The NAHC provided a list of Native American contacts that might have further knowledge of the project area with respect to cultural resources.

Three sites with Native American human burials are located within a one-mile radius of the project area. However, excavation is limited to the trench alignment in a previously disturbed area, which would not likely encounter in-situ soils or deposits. Therefore, the project is unlikely to disturb human remains.

However, in the unlikely event that human remains are encountered, potentially significant impacts to human remains could occur, in which case **Mitigation Measure M-CP-4: Treatment of Human Remains and Associated or Unassociated Funerary Objects** would be implemented. This measure requires that any human remains or associated funeral objects discovered during project construction activities be treated in accordance with applicable state and federal laws, including immediate notification of the San Mateo County coroner and notification of the NAHC, which would appoint a Most Likely Descendant (MLD). The potential impact related to encountering human remains would be less than significant with mitigation.

**Mitigation Measure M-CP-4: Treatment of Human Remains and Associated or Unassociated Funerary Objects**

Any human remains and associated or unassociated funerary objects discovered during soil-disturbing activity will be treated in compliance with applicable state laws. These laws require immediate notification of the county coroner and, in the event the coroner determines the human remains are Native American remains, notification of the Native American Heritage Commission, which will appoint an MLD in accordance with California Public Resources Code Section 5097.98. The SFPUC, archaeological consultant, and MLD will make all reasonable efforts to develop an agreement for the appropriate treatment of human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. State law allows 48 hours to reach agreement on these matters. If the MLD does not agree on the reburial method, the SFPUC will follow Public Resources Code Section 5097.98(b), which states, "the landowner or his or her authorized representative will reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

**Impact C-CP: Construction of the proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in a significant cumulative impact on cultural resources. (Less than Significant with Mitigation)**

The proposed project would not have any impacts on historical resources (buildings and structures) due to lack of historical resources on site.

There is no identified archaeological resource in the project area. Most of the ground disturbing activities would occur in previously disturbed fill; therefore, potential to encounter an archaeological resource is low. However, impacts related to the potential to encounter prehistoric or historic-period archaeological resources are considered potentially significant for the proposed project because the general project vicinity is highly sensitive for prehistoric cultural resources, including human burials. The cumulative projects that involve excavation could also encounter previously undiscovered archaeological resources or human remains during construction. Thus, the cumulative impact on these resources would be potentially significant.

However, the project's impacts related to archaeological resources and the discovery of human remains would be fully mitigated with implementation of **Mitigation Measure M-CP-2: Accidental Discovery Measures,** which requires that any archaeological resource discovered within the project area be evaluated by an archaeological consultant, who would make recommendations regarding the appropriate action to be taken**; and Mitigation Measure M-CP-4: Treatment of Human Remains and Associated or Unassociated Funerary Objects,** which requires that any human remains or associated funeral objects be handled in accordance with applicable state laws. With implementation of these mitigation measures, the project's contribution to this cumulative impact on archaeological resources would not be cumulatively considerable, and this cumulative impact would be less than significant with mitigation.

There is no indication of paleontological resources at the site due to presence of significant disturbed fill in the project area. However, in the event that fossil remains are identified, the contractor must comply with **Mitigation Measure M-CP-3: Suspend Construction Work if Paleontological Resource is Identified,** which requires that construction work will be suspended immediately if there is any indication of a Paleontological Resource. With implementation of the mitigation measure, the project's contribution to any cumulative impact would not be cumulatively considerable (less than significant).

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **5. TRANSPORTATION AND CIRCULATION— Would the project:** | | | | | |
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☐ | ☐ | ☐ | ☐ | ☒ |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks? | ☐ | ☐ | ☐ | ☐ | ☒ |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses? | ☐ | ☐ | ☐ | ☒ | ☐ |
| e) Result in inadequate emergency access? | ☐ | ☐ | ☐ | ☒ | ☐ |
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☐ | ☐ | ☒ | ☐ | ☐ |

This traffic and circulation analysis describes existing transportation conditions in the vicinity of the project site and presents an assessment of the transportation impacts associated with project construction and future operations and maintenance.

The section focuses on the potential for the proposed project to result in short-term, construction-related impacts on roadways due to changes in roadway capacities or increases in traffic on area roadways.

The San Francisco Planning Department generally does not consider construction-related traffic impacts to be significant, as they are temporary and limited in duration. Construction truck trips would occur throughout the day, such that the majority of trucks would not travel to or from the project work area during the peak commute hours.

Once improvements are completed, the culvert would require periodic maintenance, similar to existing conditions, and would not generate new vehicle trips. Therefore, this impact assessment focuses on the transportation impact of construction activities.

## Transportation Setting

The study area for the traffic analysis lies within unincorporated San Mateo County. While the proposed improvements at the project site would take place within the Watershed Lands, the study area includes the roadway network of regional highways and local roadways that would be used for site access by construction workers and vehicles (including trucks that would transport construction materials and excavated/fill materials to and from the worksite).

*Roadway Network*

I-280 is the primary regional access route to the project area. In the vicinity of the project site, I-280 runs north-south and is an eight-lane divided freeway. Access to the project site is provided at Edgewood Drive via freeway ramps off of I-280, 2.0 miles to the south of the project site, or 2.4 miles to the north, off of Highway 92 and I-280. The most recent California Department of Transportation (Caltrans) data indicate that the average daily traffic volume on I-280 in the vicinity of the project site is about 104,000 vehicles per day (Caltrans, 2012).

In the vicinity of the Reservoir, Cañada Road is a two-lane rural roadway providing access to recreational facilities. Edgewood Road connects Cañada Road with the I-280 on-ramps and off-ramps at the Edgewood interchange. Average daily traffic volumes are about 1,800 vehicles per day on Cañada Road, and about 2,800 vehicles per day on Edgewood Road between Cañada Road and I-280 (San Mateo County DPW, 2012).

*Transit Service*

San Mateo County Transit District (SamTrans) is the primary bus service provider in San Mateo County. There is no regularly scheduled bus or other transit services on Cañada Road or on Edgewood Road in the vicinity of the Project site (SamTrans, 2012).

*Bicycle and Pedestrian Circulation*

Cañada Road is a Class II facility (bike lane striped within the paved area), with a bicycle lane in each direction. Cañada Road, between Edgewood Road to the south and Highway 92 to the north, is closed to automobile traffic on Sundays for an event called "Bicycle Sundays," which is sponsored by the San Mateo County Department of Parks. Recreational bicyclists use Cañada Road seven days a week.

There are no pedestrian facilities on Cañada Road, and pedestrian volumes in the vicinity of the project site are low throughout the day, as the predominant mode of travel in the area is by automobile.

*Regulatory Setting*

Policies regarding traffic service levels apply only to long-term traffic conditions. These policies generally specify a minimum level of service[7] (LOS) of D on major streets during the peak periods of traffic flow, and require mitigation measures when project-specific impacts are projected to result in a level of service of below LOS D.

The LOS standards for roadways in the San Mateo County Congestion Management Program network vary by roadway segment, although these standards do not apply to impacts resulting from construction, rehabilitation, or maintenance of facilities that affect the management program network (City/County Association of Governments of San Mateo County, 2011). In the vicinity of the project site, I-280 is part of the management program roadway network (between the county lines of San Francisco and Santa Clara Counties). There are no management plan network intersections close to the project site. The monitored 2011 level of service for I-280 between Highway 92 and Highway 84 was LOS A/B, and the management plan standard is LOS D.

**Impact TR-1: Project construction could impede roadway capacity on area roadways, causing temporary and intermittent conflicts with all modes of travel, due to a temporary increase in traffic volumes during construction. (Less than Significant)**

The proposed project would not create any permanent traffic increase. Temporary construction traffic would consist of trucks and work crew vehicles, resulting in approximately 20 additional vehicle trips per day for a period of two to three months (refer to Table 2 in Section B). This would result in negligible short-term traffic volume increases on roadways near the project site and along access routes; the addition of 20 daily vehicle trips over two to three months would not substantially reduce roadway capacity or increase traffic delays. No closure of travel lanes would be required to accommodate 20 daily vehicle trips or other project construction activities. Therefore, the impact on traffic would be less than significant.

**Impact TR-2: The proposed project would not conflict with an applicable congestion management program. (Not Applicable)**

The proposed project would not result in a permanent increase in traffic. Approximately 20 additional trips would result from project construction over a two to three months period. The San Mateo County Congestion Management Program (CMP) establishes level of service (LOS) standards for its roadway network; however, these standards do not apply to impacts resulting from construction, rehabilitation, or maintenance of facilities that affect the management program network (City/County Association of Governments of San Mateo County, 2011). Furthermore, no roadways or intersection identified in the CMP would be affected by anticipated volume of temporary construction traffic. Therefore, impacts related to the applicable congestion management program are not applicable.

[7] Level of service (LOS) is a qualitative description of a facility's performance based on average delay per vehicle, vehicle density, or volume-to-capacity ratios. Level of service ranges from LOS A, which indicates free-flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays.

**Impact TR-3: The proposed project would not be located within an airport land use plan, within two miles of a public airport, or in the vicinity of a private air strip. (Not Applicable)**

The nearest airports to the project area are San Francisco International Airport approximately 10 miles to the north and Oakland International Airport approximately 16 miles to the northeast. Therefore, impacts related to location within an airport land use plan, within two miles of a public airport, and in the vicinity of a private air strip are not applicable.

**Impact TR-4: The proposed project would not substantially increase hazards due to a design feature or incompatible uses. (No Impact)**

The proposed project would not change the roadway network or introduce any new land uses to the project vicinity. Therefore, there would be no impact related to increased hazards due to a design feature or incompatible uses.

**Impact TR-5: Project construction would not substantially limit access to adjacent roadways and land uses due to construction within roadways. (No Impact)**

Construction activities associated with project improvements would be conducted within the established off-street work areas and not within public roadways. Construction activities associated with the culvert project would not require temporary road closures and would not affect the ability of emergency vehicles to access adjacent land uses. Therefore, there would be no impact with respect to limiting access to adjacent roadways and land uses.

**Impact TR-6: Project construction would not substantially impair access to alternative transportation facilities (public transit, bicycle, or pedestrian facilities), although it could temporarily decrease the performance of such facilities. (Less than Significant)**

As discussed above, no SamTrans public transit routes run on Cañada Road or Edgewood Road, nor are pedestrian facilities available along the roadways in the project vicinity. Cañada Road is used for recreational bicycle travel, with heavier bicycle use on weekends. Project construction activities would not occur on Sunday. Because construction-related traffic would be limited to about 20 daily vehicle trips distributed throughout the day, impacts to bicyclists using Cañada Road would not be substantial Therefore, impacts to bicycle facilities would be less than significant.

**Impact C-TR: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not substantially contribute to cumulative traffic increases on local and regional roads. (Less than Significant)**

Temporary traffic impacts that could result from the proposed project are minor, resulting from the estimated 20 vehicle trips per day, and limited to the two to three month construction phase.

As indicated in the discussion of Other Projects in the Project Vicinity in Section B above, none of the projects identified would be located within one mile of the proposed project, nor would crews constructing the other projects use Cañada Road or Edgewood Road as transportation routes. Therefore, the project's contribution to any cumulative traffic impact would not be cumulatively considerable (less than significant).

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **6. NOISE—Would the project:** | | | | | |
| a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☐ | ☒ |
| g) Be substantially affected by existing noise levels? | ☐ | ☐ | ☐ | ☐ | ☒ |

The following noise impact discussion evaluates short-term construction impacts (e.g., general construction, construction traffic noise, and vibration) and long-term operational impacts (e.g., those resulting from operation and maintenance of project facilities). For construction noise, the potential for impact is determined by the proximity of sensitive receptors, typical noise levels associated with construction equipment, the potential for construction noise levels to interfere with daytime activities, the duration that sensitive receptors would be affected, and whether proposed activities are expected to occur outside of the construction time limits provided in local ordinances.

For operational noise, the potential for impact is defined by the proximity of sensitive receptors to a proposed facility, and the potential for operational noise to remain within noise ordinance limits at the nearest receptors.

*Noise Setting*

Recreational uses at the Pulgas Water Temple would be the only noise-sensitive uses affected by the project, which are separated by a distance of approximately 0.36 mile (1,900 feet). The Pulgas Water Temple is visited by recreational ~~visitors~~ users and is also used as a venue for special occasions such as weddings. Besides recreational users, there are no noise-sensitive receptors in the project area. The nearest residences are located approximately 0.9 mile east of the project area

in the City of San Carlos. The Interstate 280 Freeway is situated between the project area and the nearest residences.

*Regulatory Setting*

Local noise issues are addressed through enforcement of noise ordinance standards as well as through implementation of general plan policies, including noise and land use compatibility guidelines. General plan policies provide guidelines for determining whether a noise environment is appropriate for a proposed or planned land use. San Mateo County General Plan policies regarding noise generally aim to reduce noise impacts by promoting compatible land uses and noise reduction at the sources.

The San Mateo County Code also specifies noise limits, but construction activities occurring during specified daytime hours are exempt from these limits. The San Mateo County ordinance specifically exempts noise from construction from the provisions of the ordinance noise limits, as long as the construction activity occurs between the hours of 7:00 am and 6:00 pm Monday through Friday and between 9:00 am and 5:00 pm on Saturdays. The ordinance further states that noise from construction occurring outside these hours and on Sundays, Thanksgiving, and Christmas would be limited at adjoining property lines to the levels shown below in **Table 3**.

**Table 3 - San Mateo County Noise Level Standards**

| Category[1] | Cumulative Number of Minutes in Any One Hour Time Period | Daytime 7:00 AM to 10:00 PM (dBA) | Nighttime 10:00 PM to 7:00 AM (dBA) |
|---|---|---|---|
| 1 | 30 | 55 | 50 |
| 2 | 15 | 60 | 55 |
| 3 | 5 | 65 | 60 |
| 4 | 1 | 70 | 65 |
| 5 | 0 | 75 | 70 |

Source: San Mateo County Ordinance Code, Section 4.88.330, December 12, 2006

Notes: 1) Categories are defined by the time period: e.g., noise for a five-minute cumulative period in any one hour is a Category 3 event.

**Impact NO-1: The proposed project would not result in exposure of persons to or generation of noise levels in excess of standards established in the San Mateo general plan or noise ordinance, or applicable standards of other agencies. (Less than Significant)**

As discussed above, the nearest sensitive receptors would be recreational users of the Pulgas Water Temple located approximately 1,900 feet away. At that distance, construction noise from the propose project would be substantially attenuated. For example, a typical construction noise level of 90 dBA at 50 feet would attenuate to below 62 dBA at 1,900 feet, based on an attenuation rate of 6dBA for every doubling of distance. Moreover, San Mateo County exempts noise from construction during daytime hours; because the Pulgas Water Temple is open to the public from

9:00 AM to 4:00 PM, the proposed project would not conflict with the noise ordinance. Therefore, the impact during construction is less than significant.

No noise would be generated following construction of the proposed project facilities. Routine maintenance would be similar or nearly identical to existing conditions.

**Impact NO-2: During construction, the proposed project would not result in a substantial temporary or periodic increase in groundborne vibration in the project vicinity. (Less than Significant)**

Construction-related vibration effects can range from annoyance to cosmetic or structural damage. The proposed project does not involve any pile driving, but groundborne vibration could result from project excavation and compaction activities. The closest residences are 0.9 mile away and would not be affected by vibration from project construction due to distance. The closest structure to the proposed project is the Pulgas Balancing Reservoir located approximately 0.27 mile south. Given this distance and the limited intensity and duration of vibration-generating construction activity, vibration from the project is not expected to cause any cosmetic or structural damage to this structure, particularly considering that the reservoir was recently structurally reinforced to address potential structural damage due to seismic activity. Therefore, the impact from construction-related vibration would be less than significant.

Following construction, the project would have no potential to generate vibration during routine maintenance activities; no impact would occur during project operations.

**Impact NO-3: The proposed project would not result in a substantial permanent increase in ambient noise levels in the project vicinity. (No Impact)**

Operation of the proposed culvert would not result in a measurable increase in ambient noise levels above or below ground because no noise-generating equipment would be installed as part of the project. Routine maintenance of the proposed facilities would be similar to existing maintenance activities. Therefore, there would be no increase in noise levels, and no impact would result from project implementation.

**Impact NO-4: During construction, the proposed project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)**

Project-related construction activities would result in temporary increases in ambient noise levels in the project vicinity, including at the Pulgas Water Temple, located 1,900 feet from the project site. Construction noise levels would fluctuate at a given location depending on the type of project activity, construction phasing, equipment type/duration of use, distance between the noise source and receptor, and the presence or absence of existing barriers (i.e., buildings, topography) between the noise source and receptor. Equipment proposed to be used for project construction includes a crane, portable generators, drills and other hand tools, backhoes, and materials delivery trucks. Such equipment can generate maximum noise levels ranging from about 78 to 83 dBA at a distance of 50 feet from the source (USEPA, 1971). The rate of attenuation (i.e., reduction) is about 6 dBA for every doubling of distance from a point source.

The closest sensitive receptors are visitors to the Pulgas Water Temple. Since the construction equipment would operate approximately 1,900 feet east of the water temple (and the attenuation is further reduced by topography and vegetation), water temple visitors would not be affected by noised generated from the proposed project. (As noted above under Impact NO-1, a typical combined noise level of 90 dBA during construction would attenuate to about 60 dBA at the Pulgas Water Temple.) The closest residences to the project site are located approximately 0.9 mile to the east (east of the Interstate 280 Freeway). Given this distance and the location of Interstate 280 between the project and the closest residences, construction-related noise levels would be attenuated to an unnoticeable level.

With respect to construction-related traffic noise, access routes for project-related worker vehicles and delivery trucks are expected to be as follows: Cañada Road, with access from the I-280 freeway via Edgewood Road to the south and Highway 92 to the north. No residential streets would be used by construction-related traffic to or from the project site. Project construction is estimated to generate up to 20 trips per day to deliver the construction crew and construction materials. The majority of this traffic would be workers arriving at the worksite each day. Delivery and hauling of materials would be distributed throughout the 2 to 3 month work period, depending on the type of work being performed at the time. Given the limited volume of construction traffic and distance to any sensitive receptors, including residences and the Pulgas Water Temple, the impact from construction vehicles would be less than significant.

**Impact NO-5: The proposed project is not located within 2 miles of a public airport or in the vicinity of a private airstrip. (Not Applicable)**

The nearest airports to the project area are San Francisco International Airport approximately 10 miles to the north and Oakland International Airport approximately 16 miles to the northeast. Therefore, impacts related to location within an airport land use plan, within 2 miles of a public airport, and in the vicinity of a private air strip are not applicable.

**Impact NO-6: The project would not be adversely affected by existing noise levels. (Not Applicable)**

There is no significant existing noise at or near the project area. The proposed project would also not introduce any new people to the project area. Therefore, the proposed project would not be affected by existing noise levels and this impact is not applicable to the proposed project.

**Impact C-NO: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in significant cumulative noise and vibration impacts. (No Impact)**

As discussed above, the only sensitive receptors close the project area are visitors to the Pulgas Water Temple, approximately 1,900 feet away. Potential project noise impacts would be less than significant. Similarly, vibration impacts during construction would not have a significant impact at the nearest structure, the Pulgas Balancing Reservoir. Further, the project would not generate noise during operation.

None of the cumulative projects listed above would involve construction near the water temple or reservoir, would use Cañada Road for vehicular access, or have potentially overlapping

construction schedules with the proposed project. Because noise generated during construction of the proposed project does not have the potential to combine with other planned projects due to geographic distance and/or scheduling, no cumulative impacts are anticipated.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **7. AIR QUALITY—Would the project:** | | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☐ | ☒ | ☐ |

The BAAQMD is the regional agency with jurisdiction over the nine-county Bay Area Air Basin. The BAAQMD is responsible for attaining and maintaining air quality in the Air Basin within federal and State air quality standards (BAAQMD, 2011a). Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Air Basin and to develop and implement strategies to attain the applicable federal and State standards. The BAAQMD adopted updated *California Environmental Quality Act (CEQA) Air Quality Guidelines*, including new thresholds of significance, in June 2010 and revised them in May 2011 (BAAQMD, 2011b). These guidelines specify methodologies for evaluating potential air quality impacts and applying the new thresholds of significance.

On March 5, 2012 the Alameda County Superior Court issued a judgment which ordered the BAAQMD to set aside the significance thresholds provided in their CEQA guidelines. Thus, the BAAQMD is no longer recommending these thresholds be used as a general measure of project's significant air quality impacts. However, the Planning Department has determined that Appendix D of the BAAQMD *CEQA Air Quality Guidelines,* in combination with BAAQMD's *Revised Draft Options and Justification Report* (BAAQMD, 2009), provide substantial evidence to support the BAAQMD recommended thresholds and, therefore, has determined they are appropriate for use in this analysis.

The proposed project is located within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB is currently designated as a nonattainment area for ozone and particulate matter (PM10 and PM2.5). Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). BAAQMD, as the primary regulatory agency in the SFBAAB, is charged with ensuring that the region attains applicable federal and state ambient air quality standards. For ozone precursors, ROG and NOx, the offset emissions level is an annual average of 10 tons per year (or 54 pounds per day). At that level, new emission sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. For PM10 and PM2.5, the emissions limits are 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively.

Construction of the proposed project could cause short-term air quality impacts. There would be no long-term impacts from project operation because the proposed project would not construct new sources of air emissions, and project operations would not result in any discernible increase in air emissions because routine maintenance activities would be essentially unchanged with project implementation.

**Impact AQ-1: Implementation of the proposed project would not conflict with or obstruct the local applicable air quality plan, violate an air quality standard, or contribute substantially to an existing or projected air quality violation. (Less than Significant)**

The estimate of criteria pollutant emissions during construction was conducted utilizing the Air Quality Screening Tool developed by the Environ air quality consultants. The screening tool results are provided in Attachment 1 of this document. Criteria pollutants from onsite construction activities and offsite haul trucks were added and then averaged over the estimated 60-workday construction schedule. In all cases, emissions of the criteria pollutants ROG, NOx, $PM_{10}$, and $PM_{2.5}$ were below the applicable daily mass emissions thresholds for criteria air pollutants, as shown in **Table 4** below. Consequently, impacts from construction-related emissions of criteria pollutant emissions would be less than significant.

**Table 4 - Construction Criteria Pollutant Emissions (lbs/day)**

| Criteria Pollutant | Estimated Project Construction Emissions (lbs/day) | Significance Threshold (lbs/day) | Significant Impact? |
|---|---|---|---|
| PM10 | 0.92 | 82 | No |
| PM2.5 | 0.92 | 54 | No |
| NOx | 22.17 | 54 | No |
| ROG | 3.36 | 54 | No |

**Impact AQ-2: The project's construction activities would result in short-term emissions of fugitive dust. (Less than Significant)**

Specific to fugitive dust, the BAAQMD recommends basic control measures to limit fugitive dust emissions and ensure that no significant air quality impact results. As described in Section B,

Project Description, Construction Activities and Schedule, the SFPUC would require the construction contractor to implement appropriate dust control measures for the proposed project in compliance with this recommendation. Therefore, the impact of fugitive dust emissions would be less than significant.

**Impact AQ-3: Implementation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)**

The nearest sensitive receptors for air pollutants would be residents located approximately 0.9 mile away. Construction of the proposed project would be completed in two to three months. Due to the short-term construction duration, the distance to the nearest sensitive receptors, and the relatively limited scale and intensity of construction activities, the project would not expos~~ure~~ sensitive receptors to substantial pollutant concentrations. Operation of the project following construction would not result in any emission of air pollutants since operations would not change. Therefore, the project impact would be less than significant.

**Impact AQ-4: The proposed project would not create objectionable odors affecting a substantial number of people. (No Impact)**

The project site is located approximately 0.9-mile from the nearest residential use, and approximately 1,900 feet from the Pulgas Water Temple, which is open to public use. Given these distances and the relatively limited scale of project construction activities, the project does not have the potential to create objectionable odors affecting a substantial number of people. The project would install a new drainage culvert and erosion control measures, which would not produce new odors or cause changes in odors in the project area. Therefore, the project would have no impact related to creation of objectionable odors that could affect a substantial number of people.

**Impact C-AQ: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard. (Less than Significant)**

Because the proposed project would not exceed applicable thresholds for criteria pollutants, construction activity would not result in a cumulatively considerable contribution to regional air quality impact. The project would not expose sensitive receptors to substantial air pollutant concentrations. Projects described above under Other Projects within the Vicinity are located more than one mile from the proposed project, too far to result in a significant cumulative impact to sensitive receptors. Therefore, no significant cumulative air quality impacts would result from implementation of the proposed project.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **8. GREENHOUSE GAS EMISSIONS— Would the project:** | | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ | ☐ |

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force in global climate change. The primary GHGs are carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), ozone, and water vapor.

Although the primary GHGs in the atmosphere are naturally occurring, $CO_2$, $CH_4$, and $N_2O$ are largely emitted by human activities; these emissions are increasing the accumulation of these compounds within earth's atmosphere. $CO_2$ emissions are largely byproducts of fossil fuel combustion whereas methane results from offgassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride and are generated in certain industrial processes. GHGs are typically reported in "carbon dioxide-equivalent" measures ($CO_2E$).[8]

*Regulatory Setting*

In 2006, the California legislature passed Assembly Bill 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other feasible and cost-effective measures such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

Pursuant to AB 32, CARB adopted a scoping plan in December 2008 outlining measures to meet the 2020 GHG reduction limits. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels (CARB, 2010b).

The BAAQMD is the primary agency responsible for air quality regulation in the nine-county San Francisco Bay Area Air Basin. As part of its role in air quality regulation, the BAAQMD has prepared the CEQA air quality guidelines to assist lead agencies in evaluating air quality impacts of

[8] Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which are weighted averages based on each gas's heat absorption (or "global warming") potential.

projects and plans. The guidelines provide procedures for evaluating potential air quality impacts during the environmental review process, consistent with CEQA requirements. In May 2011, the BAAQMD adopted new and revised CEQA air quality thresholds of significance, and issued revised guidelines that supersede the 1999 air quality guidelines. The 2011 CEQA Air Quality Guidelines provide CEQA thresholds of significance for GHG emissions for the first time. However, based on a writ mandated by the Alameda Superior Court, these thresholds have been set aside and the BAAQMD has to cease dissemination of them until the BAAQMD complies with CEQA for the adoption of the thresholds. As a result, the BAAQMD is no longer recommending that 2011 thresholds be used to measure a project's significant GHG impacts. Instead, the BAAQMD suggests that lead agencies use the 1999 CEQA thresholds to make determinations regarding the significance of an individual project's air quality impacts. However, the Planning Department has determined that Appendix D of the BAAQMD *CEQA Air Quality Guidelines*, in combination with the BAAQMD's *Revised Draft Options and Justification Report* (BAAQMD, 2009), provide substantial evidence to support the BAAQMD recommended thresholds and, therefore, has determined they are appropriate for use in CEQA analysis. The BAAQMD thresholds of significance include a threshold for operational GHG emissions but none for construction-related GHG emissions. The BAAQMD's operational GHG thresholds of significance are 10,000 metric tons of $CO_2e$ per year for stationary sources, or 1,100 metric tons of $CO_2e$ per year for mobile sources.

**Impact GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (Less than Significant)**

Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operation.

The proposed project would result in an increase in GHG emissions primarily during the construction phase. This analysis does not include a quantitative analysis of estimated GHG emissions during construction. However, a recent analysis of a larger-scale infrastructure project planned by the SFPUC in Sunol Valley in Alameda County (San Francisco Planning Department, 2012) indicated that construction of that project would result in the emission of a total of 122 metric tons of $CO_2e$. Due to the smaller scale of the proposed project, GHG emissions are anticipated to be lower than this amount. And while there is no quantitative significance threshold for emission of GHG during construction, as a point of comparison the operational threshold is 1,100 metric tons of $CO_2e$.

Once the project is constructed, the SFPUC would be responsible for normal maintenance of the culvert and appurtenant structures. Similar to existing maintenance practices, two to three workers would clean and repair the culvert up to one day per year. Therefore, operation of the proposed project would not contribute to annual long-term increases in GHGs associated with increases in energy use, water use, wastewater treatment, or solid waste disposal.

Assuming a project lifetime of at least 20 years, annualized GHG emissions associated with project construction would be on the order of 5 to 10 metric tons of $CO_2e$ per year. Compared to the operational GHG threshold of 1,100 metric tons of $CO_2e$, this level would not be substantial.

The state has adopted several policies and regulations for the purpose of reducing GHG emissions (discussed above). The most stringent of these is AB 32, which is designed to reduce statewide GHG emissions to 1990 levels by 2020. Once constructed, the proposed project would not result in an increase in emissions because there would be no direct operational emissions from new vehicle trips or area sources and no change in indirect emissions from electrical use or energy required to operate the culvert. Therefore, the proposed project would not conflict with the state goals listed in AB 32 or in any preceding state policies adopted to reduce GHG emissions. The impact would be less than significant.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less-Than-Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **9. WIND AND SHADOW—Would the project:** | | | | | |
| a) Alter wind in a manner that substantially affects public areas? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas? | ☐ | ☐ | ☐ | ☐ | ☒ |

**Impact WS-1: The proposed project would not alter wind in a matter that substantially affects public areas. (No Impact)**

Wind impacts are generally caused by large building masses or other structures extending substantially above their surroundings. Because the proposed project would consist of installation of an underground culvert and two debris fences, and would not include any buildings or other aboveground structures, the project would have no impact related to alteration of winds.

**Impact WS-2: The proposed project would not create new shadow in a manner that could substantially affect outdoor recreation facilities or other public areas. (Not Applicable)**

Section 295 of the *San Francisco Planning Code* was adopted in response to Proposition K (passed in November 1984) to protect certain public open spaces from shadowing by new structures during the periods 1 hour after sunrise and 1 hour before sunset, year round. The project would not affect properties protected by Proposition K and would not shade outdoor recreational facilities or other public areas. The project site is outside the San Francisco City Limits and therefore is not subject to the provisions of Section 295 of the *San Francisco Planning Code*. Therefore, the impact is not applicable to the proposed project.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **10. RECREATION—Would the project:** | | | | | |
| a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☐ | ☒ |
| c) Physically degrade existing recreational resources? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact RE-1: The project would not increase the use of existing neighborhood parks and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated and would not result in physical degradation of recreational resources. (No Impact)**

Recreational facilities in the project vicinity include the Pulgas Water Temple area and Cañada Road (which is used by bicycles), both located west of the project site. As discussed earlier in the Population and Housing section above, construction of the culvert would not result in population growth. The culvert site is approximately 1,900 feet from the Water Temple and would have no impact on that facility. The number of vehicle trips per day on Cañada Road generated by construction activity would be minimal (about 20 per day). Therefore, no impact on recreational facilities is anticipated.

**Impact RE-2: The project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. (Not Applicable)**

The proposed project does not include the construction of recreational facilities. Therefore, this impact is not applicable to the proposed project.

**Impact C-RE: The proposed project, in combination with other past, present, or reasonably foreseeable future projects, would not result in significant cumulative recreation impacts. (No Impact)**

As discussed above, the project would have no impacts to recreational resources and therefore would not contribute to any cumulative impacts.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **11. UTILITIES AND SERVICE SYSTEMS— Would the project:** | | | | | |
| a) Disrupt operation or require relocation of regional or local utilities? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ | ☐ |
| e) Have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements? | ☐ | ☐ | ☐ | ☒ | ☐ |
| f) Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ☐ | ☒ |
| g) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☒ | ☐ | ☐ |
| h) Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact UT-1: Project construction would not result in a substantial adverse effect related to disruption of utility operations or accidental damage to existing utilities. (No Impact)**

The purpose of the proposed project is to maintain the operation and reliability of the electrical substation and water distribution facilities at the project site by constructing the culvert and erosion control measures. Failure to construct the proposed project could result in damage to the facilities caused by a major storm event leading to disruption of utility operations or damage to those utilities. Alignment of the culvert around the substation and location of the erosion control features would avoid any disruption of the existing utility facilities. Therefore, there would be no impact resulting from disruption of utility operations or accidental damage.

**Impact UT-2: Implementation of the proposed project would not exceed wastewater treatment requirements, exceed the capacity of the wastewater treatment provider serving the project, or result in the construction of new wastewater treatment facilities. (No Impact)**

The intermittent stream that flows through the existing culvert flows continues from the site through a natural drainage to the Crystal Springs Reservoir west of the project area and does not require wastewater treatment. The culvert would not increase flows to the Reservoir. Therefore, there would be no impact to wastewater treatment facilities.

**Impact UT-3: Implementation of the proposed project would not require new water provision facilities or new water entitlements to serve the project. (No Impact)**

The proposed project would not include the construction of new facilities that would use water; therefore, no new water provision facilities or water entitlements would be required, and there would be no impact to water supply or water entitlements.

**Impact UT-4: The proposed project would not require new stormwater drainage facilities, the construction of which could result in significant environmental effects. (No Impact)**

The proposed project is a stormwater drainage facility to accommodate flows generated by major storm events. Although the new culvert would be larger than the existing culvert, the inlet structure would continue to limit flow into the culvert at the same rate as existing conditions. The new culvert was designed as a box culvert to provide easier access for maintenance. Based on the length of the proposed culvert (approximately 200 feet) and the duration of construction (2 to 3 months), significant impacts resulting from construction are not anticipated with the implementation of mitigation measures, as documented within this Initial Study.

**Impact UT-5: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. (Less than Significant)**

As described in Section B, Project Description, Quantities of Materials, the proposed project would generate a total of approximately 50 cubic yards of excess soil to be spread onsite. Approximately 20 cubic yards of construction debris would be disposed of according to San Francisco's Construction and Demolition Debris Recovery Program (Ordinance No. 27-06), which requires a minimum of 65 percent of all construction and demolition debris to be recycled and diverted from landfills. While some construction debris would be hauled to a permitted landfill, based on the limited volume of debris requiring a landfill, the impact would be less than significant.

Once construction of the project is complete, the project would not generate additional wastes requiring disposal at a landfill; therefore, there would be no impact related to landfill capacity during operation.

**Impact UT-6: Construction of the proposed project would follow all applicable statutes and regulations related to solid waste. (No Impact)**

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires municipalities to adopt an Integrated Waste Management Plan to establish objectives, policies, and

programs relative to waste disposal, management, source reduction, and recycling. Pursuant to this act, San Francisco's Construction and Demolition Debris Recovery Program (Ordinance No. 27-06) requires a minimum of 65 percent of all construction and demolition debris (including soil, concrete, brick, and other materials) to be recycled and diverted from landfills. The SFPUC would arrange for proper recycling, reuse, and disposal of construction and demolition materials (primarily waste asphalt) generated by the project. Therefore, there would be no impact related to compliance with federal, state, and local solid waste statutes and regulations. Excess soil to be reused at another project on the Peninsula Watershed Lands would not be subject to these solid waste diversion goals.

Once construction of the project is complete, the project would not generate solid waste; therefore, there would be no impact related to compliance with federal, state, and local solid waste statutes and regulations during project operation.

**Impact C-UT: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a significant cumulative impact on utilities and service systems. (Less than Significant)**

The proposed project would generate some debris that would require disposal at a landfill. However, the project would comply with San Francisco's Construction and Demolition Debris Recovery Program (Ordinance No. 27-06); therefore, only a small portion of the debris would be disposed of at a permitted landfill. Therefore, the project's contribution to any cumulative impact would not be considerable and the impact would be less than significant.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less-Than-Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **12. PUBLIC SERVICES—Would the project:** | | | | | |
| a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services? | ☐ | ☐ | ☐ | ☐ | ☒ |

**Impact PS-1: The proposed project would not increase demand for police protection and fire protection such that new or physically altered governmental facilities would be required or acceptable service ratios, response times, or other performance objectives would be affected. (Not Applicable)**

The proposed project would not result in an increase in population or visitors to the Peninsula Watershed; therefore, there would be no increased demand on public services or need for

governmental facilities, including fire protection, police protection, schools, parks, or other services. As a result, impacts related to the provision of or need for these facilities are not applicable.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **13. BIOLOGICAL RESOURCES— Would the project:** | | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☒ | ☐ | ☐ | ☐ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☒ | ☐ | ☐ | ☐ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☒ | ☐ | ☐ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ | ☐ |

## Approach to Analysis

This biological resources analysis focuses on potential project impacts on existing wildlife habitats, sensitive natural communities, and special-status animal and plant species. Existing biological conditions are based on queries of the California Natural Diversity Database (CDFG, 2011) and the online California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (8th Edition) December, 2010 (CNPS, 2010) and field surveys by SFPUC staff biologist Sonya Foree. In addition, SFPUC staff reviewed environmental documentation for other recent projects in the area, including the Pulgas Dishcharge Channel MND, the Pulgas Balancing Reservoir MND, and the Peninsula Watershed Geotechnical Investigations MND (San Francisco Planning Department, 2008, 2009, 2010.

With the query results of the CNDDB and CNPS, the project area was surveyed on February 18, 22, 29 and March 6, 12, and 13, 2012 by the biologist to document existing conditions. The biological survey was conducted within the project area, defined as the proposed culvert alignment, the creek bed upstream and downstream of the culvert, and the eroded hillside north of the Pulgas G20 Valve proposed for installation of erosion control measures and re-vegetation, as well as the proposed staging, laydown, and parking areas. The survey results are provided in more detail below.

*Regulatory Setting*

Special-status species and other species of concern are protected under federal and state statutes. Under the federal Endangered Species Act (ESA), the Secretary of the Interior and the Secretary of Commerce have authority to list a species as threatened or endangered (U.S.C. Title 16, Section 1533[c]). The ESA requires consideration of whether a project would potentially have significant impacts on any federally-listed species or their critical habitat. Under the California Endangered Species Act (CESA), the California Department of Fish and Game (CDFG) is responsible for maintaining a list of threatened and endangered species (California Fish and Game Code 2070) within the State of California. Species listed as threatened or endangered under CESA must also be evaluated for potentially significant impacts. This law is generally extended to include species proposed for listing and candidate species. Both ESA and CESA prohibit harm to listed species using the term "take" which generally means to kill, harass, or disturb a listed species.

CDFG also maintains a list of Species of Special Concern. A Species of Special Concern is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

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

Section 15380 of the CEQA Guidelines indicates that species of special concern should be included in an analysis of project impacts.

Various bird species are also protected under federal and State laws. The Migratory Bird Treaty Act prohibits the killing, possessing, or trading of migratory birds and falls under the purview of the United States Fish and Wildlife Service (USFWS). Nests are also protected under this statute.

Birds of prey or raptors are protected under the California Fish and Game Code (Section 3503.5). The federal Bald Eagle Protection Act prohibits possessing, transporting, or selling eggs, birds, or parts of bald eagles. Construction-related activities that could result in killing or injuring migratory birds or disruption of nesting must be considered as potential impacts.

California has two regulations for the protection of special status plants, the California Native Plant Protection Act and the Natural Communities Conservation Planning Act. Provisions for implementation of these statutes are addressed primarily in CEQA.

Wetlands are protected under the federal Clean Water Act and California Clean Water (Porter-Cologne) Act. There are various definitions that classify which wetlands and streams fall within the jurisdiction of the U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), and CDFG. In addition to the wetlands and watercourses themselves, CDFG has additional authority over intermittent streams and riparian areas under Fish and Game Code Sections 1600-1607.

The removal and or replacement of oak trees is governed by the State Oak Woodland Conservation Act, which sets forth requirements to mitigate for the loss of oak trees. Conversion of oak woodland is a significant environmental effect under CEQA, and thus mitigation is required, such as planting an appropriate number of replacement trees and maintenance of the replacement trees for a specified period of time (Public Resources Code Section 21083.4). San Mateo County has adopted specific legislation to implement the Oak Woodland Conservation Act, codified in the Significant Tree Ordinance and the Heritage Tree Ordinance. A significant tree is defined as any live woody plant with "a trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground." None of the potentially affected trees in the project area meet the definition of a "significant tree" under the County Ordinance. The Heritage Tree Ordinance defines heritage trees as any tree or grove of trees so designated by the County Board of Supervisors (Class I) or trees included on a list of 17 species (Class II). None of the potentially affected trees in the project area meet the minimum dimensions to be considered "significant" or "heritage" trees as defined in the relevant County ordinances.

There is no adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan applicable to the project area.

## Existing Environment and Survey Results

The following observations and conditions were documented during the biological surveys of the project area conducted in February and March of 2012. Only one special status species was observed during surveys: the San Francisco dusky footed woodrat (*Neotoma fuscipes annectens*) which is a state Species of Special Concern. Specific information is provided regarding special status species that could occur in the project area as indicated by the CNDDB and the CNPS.

*Special Status Wildlife*

A search of the CNDDB found that the project site is within a 5 mile polygon of an unconfirmed Santa Cruz kangaroo rat (*Dipodomys venustus venustus*) occurrence from 1933. However, recent

records of known kangaroo rat occurrences have been limited to Santa Cruz County, and the species prefers open chaparral habitat with sandy soil (Bolster, 1998). The project area consists of ruderal, oak woodland and riparian habitat with predominantly loamy soil; therefore, habitat is not present for this species. No other CNDDB records for this species are found in the project area.

Each of the species discussed below have been found on site or has the potential to occur in the project area based on habitat types at the site and special status species known to occur in the area.

*California Red-Legged Frogs*

The California red-legged frog (*Rana aurora draytonii*), a federal designated threatened species, is a locally abundant species within certain geographic areas of the San Francisco Bay ~~area~~Area and the central coast. Most of ~~SFPUC's~~ the Peninsula Watershed ~~Lands~~, including the project area, ~~are~~ is within the designated Critical Habitat for the California red-legged frog. The nearest recorded CNDDB occurrence is approximately 0.75 mile west of the project site, at the southern end of the Upper Crystal Springs Reservoir. There have been sightings of the frog at the edge of Upper Crystal Springs Reservoir, during the construction of the Pulgas Discharge Channel, in 2009, approximately 0.7 miles from the project area.

Typically, the California red-legged frog inhabits permanent water sources such as streams, lakes, and ponds, and breeds in standing or slow-moving water. There is no breeding habitat on the project site due to lack of standing or slow-moving water as the intermittent drainage onsite has water only part of the year. During dry parts of the year, the California red-legged frog is known to disperse from its breeding habitat to forage in upland refugia, which could be nearly any area within one to two miles of a breeding site that stays moist and cool through the summer (USFWS, 2005b). These refugia include rodent holes or cracks in the soil, thickets of coyote brush or California blackberry, and root masses associated with willows (Jennings and Hayes, 1994).The California red-legged frog can also be transient in paved areas (USFWS, 2002).

California red-legged frogs were not observed during the surveys. While there is no suitable breeding habitat onsite, there is an intermittent drainage onsite directly connected to Upper Crystal Springs Reservoir, where the nearest CNDDB occurrence of California red-legged frog is recorded. However, this drainage is culverted in most of the project area. There is some riparian habitat at the inlet and outlet of the culvert. Therefore, while the project area does not support breeding habitat for the California red-legged frog, due to the direct connection with the Upper Crystal Springs Reservoir and the presence of riparian habitat, there is suitable non-breeding, dispersal habitat onsite.

*San Francisco Garter Snake*

The San Francisco garter snake is listed as a federally and ~~state~~State endangered species and a California fully protected species under Section 5050 of the California Fish and Game Code. A fully protected species may not be taken or possessed at any time, except possibly for necessary scientific research. Its range extends from just north of the San Francisco-San Mateo county line near Lake Merced south along the base of the Santa Cruz Mountains to Waddell Creek in Santa Cruz County. San Francisco garter snakes require freshwater marsh habitat with emergent

vegetation, typically supporting a population of breeding ranid frogs (i.e., frogs of the Ranidae family) for prey, such as Pacific tree frogs (*Pseudacris regilla*) and California red-legged frogs. In addition to aquatic habitats, San Francisco garter snakes require grassy or open scrub upland habitats with burrows for overwintering and year-round shelter. Peak activity occurs between March and July when breeding takes place.

San Francisco garter snakes were not observed during the surveys. The closest CNDDB record for the San Francisco garter snake is located approximately 1.3 miles northwest of the project site. This species has been observed as close as approximately 0.5 mile west of the project area, adjacent to the Upper Crystal Springs Reservoir (San Francisco Planning Department, 2008, 2009, 2010). The project site does not contain breeding habitat for~~California red-legged frogs or other frogs~~ San Francisco garter snakes due to a lack of deep or slow moving water bodies. The intermittent drainage at the project site is culverted and there is some disturbed, grassy upland habitat between the culvert inlet and outlet.

*San Francisco Dusky-Footed Woodrat*

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is a California Species of Special Concern. This species occurs in the Coast Ranges between San Francisco Bay and the Salinas River. The San Francisco dusky-footed woodrat prefers brushy riparian habitats, coast live oak woodland, and dense scrub communities. Woodrats construct large nests, known as middens, made from woody debris, piled grass, leaves, and other materials. Nests are often constructed at the base or canopy of trees or shrubs for additional cover or protection. Woodrat nests are most numerous where canopy overstory is dense and least abundant in open areas. Woodrats typically breed from December to September. Active San Francisco dusky-footed woodrat nests have been observed in and adjacent to the project area.

*Breeding Birds*

Depending on the time of year when work occurs, breeding birds may be present within the trees or bushes within the project area. The federal Migratory Bird Treaty Act (16 USC, Section 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. Migratory birds protected under this law include almost all native birds, with the exception of the wrentit (*Chamaea fasciata*) and certain game birds (e.g. turkeys and pheasants). This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds are also protected by the state of California, under Section 3513 of the California Fish and Game Code (the Code). The Code also protects all breeding birds under Section 3503, and raptors (eagles, hawks, and owls) under Section 3503.5. Any disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by CDFG, and would constitute a significant impact.

*Special Status Plants*

Special status plants are defined here to include: (1) all plants that are federal or state listed as rare, threatened, or endangered, (2) all federal and State candidates for listing, (3) plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code Section 1900, et seq.), (4) plants considered by CNPS to be "rare, threatened, or endangered in California and elsewhere" (List 1B and 2) (California Native Plant Society 2011), and (5) plants

that qualify under the definition of "rare" in the California Environmental Quality Act Guidelines, section 15380. No special status plants were observed in the project area during the February and March site visits. The project area does not contain suitable habitat for any special status plant species known to occur in the vicinity.

*Natural Communities (Including Wetlands)*

The intermittent drainage onsite is a blue line stream on the Woodside U.S. Geological Survey 7.5-minute quadrangle and is directly connected to the Upper Crystal Springs Reservoir; therefore, it is a jurisdictional water of the U.S[9] under the federal Clean Water Act. The stream was culverted in the late 1960s due to construction of the PG&E substation. The historic stream channel is within the same approximate alignment as the existing culvert. Upstream, the stream originates northeast of I-280 and passes through a 42-inch pipe under the freeway before flowing through a detention basin. The stream is a vegetated channel for approximately 2,600 feet southwest of I-280 before being culverted on the project site. Downstream, the stream is a primarily a vegetated channel for approximately 3,900 feet (it passes through a pipe under Cañada Road) before discharging into the Upper Crystal Springs Reservoir. Prior to the construction of the dam, the stream most likely discharged to Laguna Grande, the historic stream that was flooded to create Upper Crystal Springs Reservoir in 1877.

The dominant vegetation type at stream level at the immediate inlet and outlet of the culvert replacement is arroyo willow riparian forest. An overstory of arroyo willow (*Salix lasiolepsis*) and Pacific madrone (*Arbutus menziesii*), and an understory of poison oak (*Toxicodendron diversilobum*) and blackberry (*Rubus ursinus*), dominate these two areas. Dogwood (*Cornus sericea*) and honeysuckle (*Lonicera spp.*) are present at the inlet. No herbaceous cover exists immediately around the outlet.

The area immediately south of the substation between the inlet and outlet where the new culvert is proposed is disturbed/ruderal. Ruderal communities are found in areas from which the native vegetation has been completely removed by grading, filling, or clearing and are typical of vacant lots and roadsides (Holland and Keil, 1990).

The area on the slope above the proposed culvert outlet and outside the project area consists of a coast live oak riparian forest. Coast live oak (*Quercus agrifolia*) and Pacific Madrone (*Arbutus menziesii*) dominate the overstory, and poison oak (*Toxicodendron diversilobum*) and blackberry (*Rubus ursinus*) dominate the understory along with an assemblage of shrubby and herbaceous species such as: toyon (*Heteromeles arbutifolia*), hazelnut (*Corylus cornuta*), sagewort (*Artemisia douglasiana*), honeysuckle (Lonicera spp.), coffeeberry (*Rhamnus californica*), coyote brush (*Baccharis pilularis*), yerba buena (*Satureja douglasii*), and yerba santa (*Eriodictyon californicum).*

The area where the debris fences are proposed, immediately north of the G-20 shaft site, consists of coast live oaks and a single toyon with little or no shrub or herbaceous cover beneath. Some

[9] Waters of the United States is the term used by the ACOE to define features subject to its jurisdiction under Section 404 of the Clean Water Act (CWA). Such features include wetlands, lakes, streams, ponds, and other such aquatic areas (33 CFR 328.3).

monkeyflower (*Mimulus aurantiacus*) and coyote brush (*Baccharis pilularis*) border the edge of this area.

The proposed 2,000-square-foot revegetation area immediately upslope of the shaft site consists of a coast live oak woodland understory containing coast live oak seedlings (*Quercus agrifolia*), poison oak (*Toxicodendron diversilobum*), monkeyflower (*Mimulus aurantiacus*), native bunch grasses (*Nassella* sp. or *Melica* sp.), toyon (*Heteromeles arbutifolia*), blackberry (*Rubus ursinus*), wood fern (*Dryopteris arguta*), and yerba buena (*Satureja douglasii*).

The staging/laydown areas north and south of the proposed culvert are also a disturbed area due to present and previous use as a parking and access area. The additional staging/contractor parking area about 500 feet west of the site was partly cleared for parking and currently contains rock from another project. This area is surrounded by coast live oak riparian forest.

**Impact BI-1: The proposed project would have a substantial adverse effect, either directly or through habitat modifications, on special-status species, and could interfere with the movement of native resident or wildlife species, established native resident or migratory wildlife corridors, or native wildlife nursery sites.** (**Less than Significant with Mitigation**)

Construction activities, such as grading, noise from machinery, trenching, movement of vehicles along staging access roads, and into the staging areas could result in the temporary loss of habitat for federal and/or state listed species and other species of concern, as well as potential direct mortality of individuals. In addition, project implementation would result in the permanent loss of habitat, specifically jurisdictional waters of the U.S. and riparian habitat (see Impact BI-2 for additional details).

Direct impacts to special status species would be reduced with implementation of **Mitigation Measure M-BI-1a: Protection Measures during Construction for Key Special-Status Species and Other Species of Concern** which, among other requirements, requires a worker education program to be initiated prior to construction to educate all workers on site about the identification of species, and proper protocol to follow if species are encountered during construction.

Two special-status species, California red-legged frog (federal threatened and a California species of special concern) and San Francisco garter snake (federal endangered and California endangered and fully protected species), are known to occur in the general vicinity of the project area. The known locations of these species in the area are associated with high quality habitat; for example, habitat found at and adjacent to the Crystal Springs Reservoir, approximately 0.5 mile west of the project area. Although the project site does not contain high quality habitat due to the lack of perennial water bodies and emergent vegetation and the fact that the drainage onsite is culverted, there is potential for the two species to occur on site. In order to minimize potential impacts to these species during construction, **Mitigation Measure M-BI-1b: Site-Specific Take Avoidance Protocols for San Francisco Garter Snake and California Red-Legged Frog** would be implemented in the project area. This mitigation measure lists measures to minimize impacts to these species, including pre-construction surveys, the installation of frog- and snake-proof exclusion fencing around the perimeter of the project site, worker environmental training, and equipment restrictions to designated work zones.

In addition, the proposed project would result in permanent loss of the species habitat, as documented below under impact BI-2. However, these permanent impacts would be addressed by **Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat.**

Woodrat nests were observed within the project area and immediately adjacent to the project area. Woodrats may currently inhabit the project area or build nests there in the future. Implementation of **Mitigation Measure M-BI-1c: Mitigation Measure for the Protection of the San Francisco Dusky-Footed Woodrat** would reduce impacts to the dusky-footed woodrat to less than significant. This measure calls for a pre-construction survey, with a provision to take appropriate action to prevent direct impacts to the species. These actions could include dismantling the nests that would be directly impacted by construction activities and/or trapping and relocating woodrats in compliance with recent CDFG requirements.

Breeding birds may be present within the trees, bushes, or other vegetation within or immediately adjacent to the project and staging areas during construction. To minimize impacts to breeding birds to less than significant, **Mitigation Measure M-BI-1d: Mitigation Measure for Protection of Nesting Birds and Raptors** would be implemented. This mitigation measure includes measures for a pre-construction survey of trees and other appropriate habitat for nesting birds during the nesting season, and other measures to reduce impacts to nesting birds near or in the project area.

The intermittent stream and associated riparian habitat onsite could be used as a wildlife movement corridor; however, much of the stream onsite is culverted, which lowers the quality and function of the stream as a wildlife corridor. The proposed project would not result in any permanent barriers to wildlife movement. The proposed debris fences above the substation would not be fully enclosed and wildlife would be able to move around them. Vegetation removed during construction would be restored. Wildlife movement through the project site would be temporarily impeded by construction activity; however, with the implementation of **Mitigation Measure M-BI-1a: Protection Measures during Construction for Key Special-Status Species and Other Species of Concern,** impacts on wildlife movement would be reduced to less than significant. Due to the short duration of the proposed construction period and the implementation of mitigation measure to protect special status wildlife species during construction, impacts to wildlife movement would be less than significant with mitigation.

In summary, direct impacts to sensitive and special status species would be reduced to less than significant with implementation of Mitigation Measures BI-1a through BI-1d. Mitigation Measures BI-1a and BI-1b identify general and site-specific measures to avoid the take of California red-legged frogs and San Francisco garter snakes and would also avoid and minimize impacts on other special-status species. Mitigation Measures BI-1c and BI-1d, take avoidance measures, would be implemented to minimize habitat loss and avoid the take of raptors and other birds as well as the San Francisco dusky-footed woodrat. In addition, indirect impacts on species resulting from habitat loss would be addressed by Mitigation Measure BI-2, which requires compensation for the permanent loss of the California red-legged frog and San Francisco garter snake habitat (refer to discussion under Impact BI-2 below for details)**.** Therefore, these impacts would be less than significant with mitigation.

**Mitigation Measure M-BI-1a: Protection Measures during Construction for Key Special-Status Species and Other Species of Concern**

Because the initial biological screening survey indicated the potential for special-status species and other species of concern to be present at or near the project site, the following general practice measures will be implemented:

- Preconstruction surveys for special-status species will be conducted by a qualified biologist to verify their presence or absence within two weeks before the onset of construction activity. Impacts to special-status species and other species of concern will be avoided during construction.

- A worker awareness program (environmental education) will be developed and implemented to inform project workers of their responsibilities with respect to sensitive biological resources, prior to the commencement of work.

- The SFPUC will ensure that the contractor confines all construction equipment to designated work zones (including access roads and staging areas) within the project area. In coordination with the SFPUC biologist and before construction begins the contractor will clearly stake and flag, or fence-off, work zones. No work will be allowed outside of the pre-designated work zones without the approval of the SFPUC biologist. During construction, a biologist will ensure that construction equipment and associated activities remain within the work zone.

- Should any special status species or nesting birds be encountered during construction, construction in the immediate area will cease. A biologist will be contacted immediately, and construction will only resume at the discretion of the biologist.

**Mitigation Measure M-BI-1b: Site-Specific Take Avoidance Protocols for San Francisco Garter Snake and California Red-Legged Frog**

The following site-specific take avoidance protocols for San Francisco garter snake and California red-legged frog will be implemented at the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair project area:

- A qualified biologist will conduct a preconstruction survey for San Francisco garter snake and California red-legged frog within one week before the onset of work activities.

- Under supervision of a biological monitor, prior to the initiation of construction activities, the SFPUC's contractor will install frog- and snake-proof exclusion fencing to enclose the entire work area, including staging areas and access roads to prevent any California red-legged frogs/San Francisco garter snakes from accessing the project area. Exclusion fencing will be constructed to allow egress, but not access, by California red-legged frogs and San Francisco garter snakes. The fence will be no more than 20 feet outside the limits of disturbance, at a distance determined to minimize any unnecessary vegetation removal for purposes of fence installation. As needed to ensure high visibility by the contractor, the fencing will either be marked with high visibility paint or flagging, or orange construction fencing will be placed at the limits of disturbance with the species

exclusion fencing to the outside. The exclusion fencing will be a minimum of 36" above grade, with 4-6 inches buried to avoid access to the site by burrowing species. The exclusion fencing will be inspected by a biological monitor on a weekly basis to ensure the integrity of the fencing.

- No plastic mesh/monofilament netting that could potentially entangle sensitive species, including California red-legged frog and San Francisco garter snake, will be used for any purpose during any phase of the project.

- Vehicles traveling on the access roads off of Cañada Road will not exceed 15 mph speed limit.

- Before any construction activities begin on the project, all construction personnel will attend a training session prepared by a qualified biologist. At a minimum, the training will include a description of the natural history of California red-legged frog and San Francisco garter snake and their habitat, the general measures that are being implemented to protect them, the penalties for noncompliance, and the boundaries (work area) within which the project may be accomplished. Training sessions will be repeated for all new employees before they access the project site. The SFPUC will retain the signup sheets identifying the attendees and the contractor/company they represent.

- Trenches and other excavated areas more than 2 feet deep will be either covered at the end of each work day or be provided with one or more escape ramps made of earthen fill or wooden planks. The SFPUC contractor shall inspect the excavated area for trapped animals before backfilling.

- If California red-legged frogs or San Francisco garter snakes are identified on the project site once construction activities have begun, work will be halted in the immediate area of the discovery. If the California red-legged frogs do not leave the project area of their own volition, the USFWS and/or CDFG will be contacted to determine appropriate actions. If the USFWS and/or CDFG approve moving the animal(s), a biological monitor (or other individual holding the appropriate permits) will be allowed sufficient time to move individual California red-legged frogs from the worksite before work activities begin. Only biologists approved by the USFWS will participate in activities associated with the capture, handling, and translocation of California red-legged frogs. If a San Francisco garter snake enters the project work zone, work will be halted and an SFPUC biologist will survey the work zone and confirm the snake has vacated the site. The biologist will document the results on construction monitoring log sheets and report the sighting to the California Natural Diversity Database. Work may only resume upon authorization from the SFPUC biologist.

- Upon project completion, the construction contractor will remove all fencing and flagging.

**Mitigation Measure M-BI-1c: Mitigation Measure for San Francisco Dusky-Footed Woodrat**

The SFPUC will ensure that a qualified biologist conducts an additional pre-construction survey for woodrat nests within the project area two weeks prior to construction clearing or grading in a

given location. If no nests are found within such areas, no further action is required. If nests are found within the project area or within a five-foot buffer zone outside of the project area, the biologist shall prohibit the commencement of construction in the immediate area. Construction in the immediate area will only commence after the biologist has provided permission to do so. If the nests cannot be avoided by the project, a qualified biologist shall have the option of dismantling the nests over a period of time until the nests are abandoned or shall trap and relocate woodrats out of the construction area using live-traps. In addition, the biologists shall attempt to relocate the nest to the same area where the woodrats are released. Dismantling of nests and/or relocation of woodrats would be conducted in consultation with and as required by CDFG. In order to prevent impacts to the rats or nests, the biologist may also direct the contractor on how to remove vegetation during construction.

**Mitigation Measure M-BI-1d: Mitigation Measure for Protection of Nesting Birds and Raptors**

To prevent impacts to nesting birds, the SFPUC shall, 14 days prior to the commencement of the project, conduct a survey for nesting birds during the nesting season (February 1st through August 31st) within the project area. If necessary, netting will be installed by a qualified biologist on trees that are to be removed during construction. If active nests are observed, the trees shall not be removed until young have fledged or the nest is otherwise abandoned. If tree removal is scheduled outside of the nesting season, no surveys or tree netting shall be required. If an active raptor nest is found within 300 feet of the project, a determination will be made by a qualified biologist, in consultation with the CDFG and/or USFWS, as to whether construction work will affect the active nest or disrupt reproductive behavior. If it is determined that construction will not affect an active nest or disrupt breeding behavior, construction will proceed without any restriction or mitigation measure. If it is determined that construction will affect an active raptor nest or disrupt reproductive behavior, then construction would cease.

**Impact BI-2: The proposed project would adversely affect jurisdictional waters or wetlands, riparian habitat or other sensitive natural communities. (Less than Significant with Mitigation)**

Construction activities would remove approximately 13 trees including eight arroyo willow, one Pacific madrone, three coast live oak, and one toyon. None of these trees are over San Mateo County Tree Ordinance dbh thresholds, and therefore do not trigger mitigation or replacement requirements from San Mateo County or from the State. Similarly, the Pacific madrone and coast live oak slated for removal do not qualify as heritage trees, and therefore do not require replacement.

**Table 5 - San Mateo County Tree Ordinance Thresholds and Trees Proposed for Removal**

| Tree Species | Number of Trees to be Removed | DBH | SMC Tree Ordinance Thresholds | Action Area |
|---|---|---|---|---|
| Arroyo willow (Salix lasiolepsis) | 1 | 5" | 38″ | inlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 10" | 38″ | inlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 6" | 38″ | inlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 6" | 38″ | inlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 32" | 38″ | slope above inlet |
| Arroyo willow (Salix lasiolepsis) | 1- multi-trunked | 10.5" | 38″ | outlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 6" | 38″ | outlet |
| Arroyo willow (Salix lasiolepsis) | 1 | 4.5" | 38″ | outlet |
| Pacific Madrone (Arbutus menziesii) | 1 | 20" | 48′ | slope above outlet |
| Coast live oaks (Quercus agrifolia) | 1 | 8" | 48′ | debris wall |
| Coast live oaks (Quercus agrifolia) | 1 | 2.5" | 48′ | debris wall |
| Coast live oaks (Quercus agrifolia) | 1 | 3.5" | 48′ | debris wall |
| Toyon (Heteromeles arbutifolia) | 1 | 6" | 38″ | debris wall |

[1]San Mateo County Significant Tree Ordinance (SMC 1990) and San Mateo County Heritage Tree Ordinance (SMC 1977)

The proposed project would place riprap in the channel of the unnamed drainage onsite, which would result in permanent loss of approximately 400 square feet (0.01 acre) and 25 linear feet of waters of the U.S. In addition, riparian habitat would be directly affected by the project at the inlet and outlet areas of the new box culvert. Total permanent impacts to riparian habitat are estimated at 25 linear feet and 570 square feet and are attributed to the concrete culvert inlet/outlet structures and riprap that would be placed at the culverts for erosion control. An estimated 4,300 square feet and 50 linear feet of temporary impacts to riparian habitat are expected in the areas of the inlet and outlet structures. Due to the permanent loss of water of the U.S. and the temporary and permanent impacts to riparian habitat, impacts to jurisdictional waters and riparian habitat would be significant. However, with the implementation of **Mitigation Measure M-BI-2, Protection and Compensation for Loss of Jurisdictional Waters**

**and Riparian Habitat**, which requires the SFPUC to compensate for the permanent loss of water of the U.S. and riparian habitat and to restore temporarily affected riparian habitat, the impacts would be reduced to a less-than-significant level.

**Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat.**

To protect riparian habitat onsite, the SFPUC will implement measures during construction to protect wildlife and adjacent riparian resources including flagging the perimeter of the worksite to prevent damage to adjacent riparian habitat, and prohibiting stockpiling of materials or soil within the creek bank, or the riparian area surrounding the creek. All staging areas within the construction limits would be buffered by a minimum of 75 feet distance from the stream.

The SFPUC will restore riparian habitat temporarily affected by construction. A qualified biologist will direct restoration efforts. To ensure that temporarily impacted riparian habitat would be restored to baseline or better, three willow stakes would be planted for each willow removed that is greater than four inches dbh. Where feasible, and at the discretion of the biologist, willow stakes will be procured from removed trees or from other areas of the watershed. The area outside of the riparian zone will also be hydroseeded following construction with a native seed mix determined by the biologist. Revegetation success criteria and a monitoring schedule will be developed by a qualified restoration specialist and will require approval from the CDFG.

To mitigate for permanent loss of waters of the U.S. and riparian habitat, appropriate creek and associated willow riparian habitat at the SFPUC's Bioregional Habitat Restoration Program's Homestead Pond, Adobe Gulch Creek/Grassland, or similar site located in proximity to the project will be created, enhanced, and/or restored in consultation with and at a ratio acceptable to the ACOE, CDFG, and RWQCB.

**Impact BI-3: Implementation of the proposed project would not conflict with local policies or ordinances protecting biological resources, including a tree preservation policy or ordinance. (Less than Significant)**

The regional or local land use plan that applies to the protection of biological resources in the project area is the *SFPUC Peninsula Watershed Management Plan* (SFPUC, 2002). The *Watershed Management Plan* includes policies to preserve, protect, and enhance significant botanical and wildlife resources, including rare, threatened, endangered, and sensitive species and their habitats, and to preserve the biodiversity and genetic diversity of wildlife populations where possible. It calls for site-specific analysis of projects within the watershed in accordance with applicable State and federal laws, statues, and guidelines. The proposed project is consistent with the policies of the *Peninsula Watershed Management Plan* because it would not result in any unmitigated impacts on biological resources. Therefore, this impact would be less than significant.

As described above, none of the trees slated for removal trigger consideration or mitigation under State or San Mateo County oak and/or heritage tree regulations.

**Impact BI-4: The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Not Applicable)**

There is no adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan applicable to the project area. Therefore, impacts related to conflicts with local, regional, or state habitat conservation plans are not applicable.

**Impact C-BI: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project area, would not result in significant cumulative impacts on biological resources. (Less than Significant with Mitigation)**

The geographic scope of potential cumulative impacts for biological resources encompasses the project site and areas in the region that contain the same sensitive biological resources as the project.

Without mitigation, implementation of the project could adversely affect special-status species and species of concern, including the California red-legged frog, the San Francisco garter snake, and the San Francisco dusky-footed woodrat, as well as sensitive communities, waters of the U.S. and riparian habitat. Cumulative impacts to these species and their habitat due to the proposed project, along with the cumulative projects within or near the Peninsula W~~w~~atershed, are considered potentially significant. However, with the implementation of the above mitigation measures, impacts to the special status species and their habitats and other sensitive communities would be reduced to less than significant. Therefore, project-specific mitigation would reduce the project's contribution to cumulative impacts to a level that is less than cumulatively considerable (less than significant).

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **14. GEOLOGY AND SOILS— Would the project:** | | | | | |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.) | ☐ | ☐ | ☒ | ☐ | ☐ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ | ☐ |
| iv) Landslides? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) Change substantially the topography or any unique geologic or physical features of the site? | ☐ | ☐ | ☒ | ☐ | ☐ |

## Approach to Analysis

This analysis focuses on potential geologic and soils impacts due to the proposed project. The analysis is based on field observations, review of published information regarding the site geology and soils, and geotechnical information provided for a nearby project, the Pulgas Balancing Reservoir Structural Rehabilitation and Roof Replacement Project (GTC, 2006).

*Project Setting*

The Pulgas G-20 Shaft Site Drainage Improvements and Erosion Repair project site is located east of the Upper Crystal Springs Reservoir, in an area of varied topography. This varied landscape can be attributed to the fault movement in the area. The San Andreas Fault zone runs directly

through the Crystal Springs Reservoirs, in a northwest-southeast direction, approximately 3,000 feet southwest of the site. The site lies approximately 2,000 feet northeast of the Alquist-Priolo Fault zone along the San Andreas fault (~~CDMG~~CGS, 2012~~1974~~). The conditionally active Pilarcitos Fault (fault activity more than 35,000 years ago but within the last 1.6 million years) and the active Seal Cove Fault are located approximately 3 miles and 9 miles southwest of the project site, respectively (Jennings and Bryant, 2010).

The project site lies within geologic units of unconsolidated alluvial deposits of sand and gravel (Quaternary non-marine deposits) and marine sandstone of the Whiskey Hill Formation (Eocene deposits) which are underlain by greenstone, sandstone, shale, and conglomerate of the Franciscan Complex (~~Wagner, 1991;~~ Brabb et al., 1998). Site grading in the 1960s created a large area of artificial fill comprised of tunnel spoils and cut slope excavation which covers an area underlying the Pulgas G-20 Shaft site, the PG&E substation, and the area to the south of the substation.

Soil types in the area are predominantly loams, where the risk of corrosion of concrete and steel is moderate (NRCS, 2012).

Based on the clayey and stiff nature of the onsite artificial fill and the lack of a high groundwater table within the fill, liquefaction susceptibility in the area is considered to be low. The facilities at the site were constructed in the late 1960s in moderately hilly terrain. In order to create a level building pad, a cut slope was constructed on the north side of the site and the tunnel spoils were spread across the site just south of the Pulgas G-20 Shaft. A seasonal drainage at the base of the fill was accommodated by installing an approximately 44-inch diameter galvanized corrugated metal pipe (CMP), which is the failing culvert that would be abandoned by the proposed project.

**Impact GE-1: The proposed project would not result in exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic ground shaking, seismic ground failure (liquefaction, lateral spreading), or earthquake-induced landslides. (Less than Significant)**

There are a number of earthquake faults near the project site. However, the proposed project would not construct structures for residential, commercial or any habitable use, and would therefore not expose any people to any geologic hazards. The proposed culvert project would improve the integrity of the utility facilities at the project site and thereby minimize risks to existing utility structures. Moreover, as indicated above in the Project Setting section of this analysis, the site has a low susceptibility to liquefaction. Therefore, impacts related to fault rupture, ground shaking, liquefaction or landslide would be less than significant.

**Impact GE-2: The proposed project would not result in substantial erosion or loss of topsoil. (Less than Significant)**

The proposed project would involve ground disturbance to dig a 30 feet wide (maximum width) by 200 feet long by 20 feet deep trench for the proposed culvert. As indicated above in Section B, Project Description, the contractor would be required to implement appropriate erosion and sediment controls to minimize potential erosion and loss of topsoil. Where present, topsoil would be stockpiled in a manner that minimizes erosion and dust and would be used for onsite re-vegetation efforts at the end of construction. Because the proposed project would minimize erosion and loss of topsoil, impacts would be less than significant.

**Impact GE-3: The proposed project would not cause a geologic unit to become unstable as a result of project construction. (Less than Significant)**

The project site is located in an area that was graded to create a level surface to construct the utility facilities (PG&E electrical substation, Mid-Peninsula Water District pump station, etc.). The surficial geology identified at this location includes alluvial fan and fluvial deposit. Excavation would be limited to a trench approximately 200 feet long, 30 feet wide, and 20 feet deep. Installation of the proposed culvert would ultimately contribute to the stability of the existing utility facilities at the project site by limiting erosion at the existing failed culvert facility. There is no evidence of lateral spreading, liquefaction or slope instability in the vicinity of the project site, and there should be no effect on the stability of the surficial deposits surrounding the project site from the required excavation work. Therefore, impacts related to soil or rock instability as a result of construction activities would be less than significant.

**Impact GE-4: The proposed project would not create substantial risks to life or property as a result of expansive soil. (Less than Significant)**

Problematic soils, including corrosive and expansive soils, can cause damage to structures and buried utilities and can also increase required maintenance. Depending on the degree of corrosivity of the subsurface soils, building materials such as concrete, reinforcing steel in concrete structures, and bare metal structures exposed to these soils can deteriorate, eventually leading to structural failures. Expansion and contraction of expansive soils in response to changes in moisture content can lead to differential and cyclical movements that can cause damage and/or distress to structures and equipment.

The project site traverses well-drained soil in alluvial fans and Fagan Loam (NRCS, 2012). This soil has a low to moderate shrink-swell potential and exhibits moderate corrosivity to concrete and uncoated steel (NRCS, 2012).

The existing CMP has failed due to corrosion. In order to address soil corrosivity, the proposed culvert would be reinforced concrete rather than uncoated steel. The project would use a concrete mix that would protect against corrosion; therefore, impacts related to expansive and corrosive soils would be less than significant.

**Impact GE-5: The proposed project does not include a septic system or alternative wastewater disposal system. (Not Applicable)**

The proposed project would not include construction of septic tanks or alternative wastewater disposal facilities; therefore, impacts related to the capability of the soil to support these facilities are not applicable.

**Impact GE-6: The proposed project would not result in impacts on unique geologic or physical features or alter the topography of the project area. (Less than Significant)**

There are no unique geologic or physical features within the project area. Upon installation of the culvert, the site would be restored to pre-excavation topography and re-vegetated to reduce the chance of future erosion. Therefore, impacts related to changes to unique geologic or physical features or alteration of topography would be less than significant.

**Impact C-GE: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant impact on geology and soils. (No Impact)**

Project construction would not result in any significant impacts related to geology, soils, or seismicity. These types of impacts are generally site-specific and depend on local geologic and soil conditions. Due to the distance from the proposed project site, the cumulative projects (see Other Projects in the Vicinity, described above under Section B, Project Description) would not contribute to the project's less-than-significant impacts. Therefore, no cumulative impact related to geology and soils would occur.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less-Than-Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **15. HYDROLOGY AND WATER QUALITY— Would the project:** | | | | | |
| a) Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on or off site? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site? | ☐ | ☐ | ☐ | ☒ | ☐ |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☐ | ☒ | ☐ |
| f) Otherwise substantially degrade water quality? | ☐ | ☐ | ☒ | ☐ | ☐ |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map? | ☐ | ☐ | ☐ | ☐ | ☒ |
| h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows? | ☐ | ☐ | ☐ | ☐ | ☒ |

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☐ | ☐ | ☒ |
| j) Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☐ | ☒ |

## Approach to Analysis

This analysis focuses on potential water quality impacts due to the proposed project. Implementation of the project would not have long-term effects on the hydrology or water quality of local water bodies, including the Upper Crystal Springs Reservoir, because the project would not create additional stormwater runoff or other polluted discharges. However, short-term construction impacts could result in erosion and sedimentation and/or the discharge of construction-related pollutants to Upper Crystal Springs Reservoir. This section evaluates the potential for each of these impacts to occur and identifies regulatory requirements and project measures that would ensure all impacts are reduced to a less-than-significant level.

*Project Setting*

The project site is located in the southern portion of the SFPUC's Peninsula W~~w~~atershed; it is upslope from the southern end of the Upper Crystal Springs Reservoir, approximately 0.6 mile from the project site, in a High Water Quality Vulnerability Zone, as identified in the Peninsula Watershed Management Plan. The area consists of predominantly pervious, vegetated ground.

*Regulatory Setting*

The federal Clean Water Act and subsequent amendments, under the enforcement authority of the U.S. EPA, was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Among other things, the Clean Water Act gave the U.S. EPA the authority to establish water quality criteria and implement pollution control programs such as setting wastewater standards for industry. The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. This act established the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. The project area lies within the jurisdiction of the San Francisco Bay RWQCB.

The Porter-Cologne Water Quality Control Act allows the SWRCB to adopt statewide water quality control plans, which serve as the legal, technical, and programmatic basis of water quality regulation for a region. In the San Francisco Bay Region, the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the RWQCB's master policy document. The Basin Plan describes the beneficial water uses to be protected, water quality objectives needed to protect the designated beneficial uses, and strategies for achieving the water quality objectives (RWQCB, 2007). The act also authorized the National Pollutant Discharge Elimination System (NPDES) program, which established effluent limitations and water quality requirements for discharges to

waters of the state; in the San Francisco Bay Region, the NPDES program is administered by the RWQCB.

**Impact HY-1: The proposed project would not violate water quality standards or otherwise degrade water quality. (Less than Significant)**

Project implementation could potentially affect water quality if the project resulted in increased erosion and sedimentation or the discharge of dewatered groundwater from trench excavation that would cause a violation of water quality standards or otherwise degrade water quality.

As described in Section B, Project Description, the project area is located within the CCSF-owned Peninsula Wwatershed near the southern end of Upper Crystal Springs Reservoir. Earth-disturbing activities in most locations of the watershed can have an impact on water quality, and disturbance to areas mapped in the SFPUC's Peninsula WMP as a High Water Quality Vulnerability Zone,[10] such as the proposed project area, would result in a greater risk to water quality in surface runoff and water supplies stored in Upper Crystal Springs Reservoir.

During project construction, the primary construction activity that could result in erosion or sedimentation includes staging areas or soil stockpiled from the excavation of the culvert trench. Project construction would involve the excavation and temporary stockpiling of approximately 2,000 cubic yards of soil. Without proper controls, erosion from this area could provide a source of sediment to the unnamed creek onsite and Upper Crystal Springs Reservoir and degrade water quality. Construction activities could also result in the accidental or inadvertent release of materials such as grout, adhesives, and petroleum products that could adhere to soil particles, become mobilized by rain or runoff, and degrade water quality.

However, potentially significant water quality effects related to erosion, sedimentation, and a potential release of materials would be addressed through implementation of measures by the SFPUC construction contractor that would be included in the project's erosion and sediment control plan as well as dust control measures that would minimize construction effects on water quality (see Section B, Project Description, Construction Activities and Schedule).

Best management practices (BMP) implemented for the proposed project would include, but would not be limited to, using fiber rolls to contain the transport of sediment; using wind erosion control (e.g., geotextile or plastic covers on stockpiled soil); and spraying the staging areas of the site or any stockpiled soil with water to minimize fugitive dust emissions. No plastic mesh/monofilament netting that could potentially entangle sensitive species including California red-legged frog and San Francisco garter snake would be used for any purpose during any phase of the project. The contractor would also be required to place drip pans underneath heavy equipment that is stored overnight to prevent leaks of hydraulic fluids, oil, grease, or fuels from reaching the soil, and local waters. Diesel and construction-related chemical storage would be required to be stored offsite. Proposed construction activities would also be required to comply with the *Peninsula Watershed Management Plan*.

[10] Water quality vulnerability zones are those areas where activities or disturbance have the greatest potential to affect the water quality of local surface runoff or total water supplies stored in the reservoirs. Disturbance to areas of high vulnerability would result in the greatest risk to water quality.

Implementation of these ~~BMPS~~BMPs and would be specified in the construction contracts for the project and water quality impacts related to erosion or a release of materials during construction would be less than significant.

Following construction of the proposed project, the SFPUC would resume routine maintenance of the culvert and appurtenant structures, such as inspections of facility conditions. Therefore, the project would have no impacts related to violation of water quality standards or degradation of water quality during operation.

**Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. (Less than Significant)**

The proposed project would not create new impervious surfaces or install other features that would substantially interfere with groundwater recharge. The proposed riprap would be permeable. Aside from temporary construction dewatering (if needed) for the culvert excavation, the project does not include work that would require groundwater withdrawal. Potential groundwater withdrawal or depletion during construction or operation of the project would be less than significant.

**Impact HY-3: The proposed project would not alter the existing drainage pattern or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide a substantial additional source of polluted runoff. (Less than Significant)**

During construction, ~~E~~excavation and grading activities can alter the drainage patterns of a site in a manner that would result in onsite or offsite erosion or siltation. The proposed project would only involve minor grading (in the staging areas) and excavation to install the culvert and appurtenances. However, as discussed in Impact HY-1, the contractor would implement erosion and sedimentation control BMPs to prevent sediment laden water from leaving the site. Moreover, the site would be restored to its pre-project contours post-construction, and therefore, the drainage pattern would not be altered. With implementation of surface water BMPs that would prevent substantial erosion or siltation on or off the site, impacts related to erosion and siltation offsite would be less than significant. While no significant impacts are anticipated from construction, Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat, requires the protection of riparian habitat onsite and restoration of all temporarily disturbed riparian vegetation, which would further limit any erosion and sedimentation impacts resulting from construction activity.

To minimize the potential for erosion and sedimentation during operations, the proposed culvert is designed to accommodate maximum anticipated stream flows and dissipate the energy from the stream. The flow of the intermittent stream onsite during the 100-year storm event is calculated to be 79 cubic feet per second (cfs). The proposed culvert would be 6 feet wide by 4 feet tall and designed to accommodate a discharge rate of 140 cfs, which exceeds the capacity necessary to convey the 100-year storm. There is no evidence of erosion upstream of the existing 42-inch CMP culvert which indicates that the existing culvert is adequate to handle current stream flows without causing adverse effects to drainage geomorphology upstream. The proposed culvert, which would be larger than the existing culvert, would be adequate to handle

the maximum stream flow without causing erosion. Also, the size of the proposed culvert minimizes the potential that the culvert would become clogged with sediment and debris, which can cause localized flooding as well as erosion. With respect to erosion downstream of the culvert, the proposed project would install 10 feet of riprap at both the outlet and inlet to dissipate energy upstream and downstream of the proposed culvert to avoid scouring of the stream bed and bank (GTC, 2012b). Because the proposed culvert would be adequately sized to accommodate the 100-year storm event and is designed with features to minimize erosion upstream and downstream of the culvert, impacts related to altering drainage patterns and contributing to polluted runoff would be less than significant.

**Impact HY-4: The proposed project would not place housing within a 100-year flood hazard area. (Not Applicable)**

The proposed project does not include the construction of housing; therefore, the impact related to placement of housing within a 100-year flood zone would not be applicable.

**Impact HY-5: The proposed project would not place structures within a 100-year flood hazard area that would impede or redirect flood flows. (Not Applicable)**

The project site is not located in a 100-year flood zone (FEMA, 1984). The project does not include construction activities in a 100-year flood zone or the addition of structures that would impede or redirect flood flows. Impacts related to the placement of structures within a 100-year flood hazard area are not applicable to the proposed project.

**Impact HY-6: The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including inundation by dam failure, seiche, tsunami, or mudflow. (No Impact)**

The proposed project, located on a hillside above the extreme southern (upstream) end of Upper Crystal Springs Reservoir would not expose people (including workers) to the risk of injury or death or expose structures to the risk of damage from flooding as a result of dam or levee failure, since the project area is not downstream of these structures. Therefore, there would be no impact related to this issue.

The proposed project is not located within a zone of potential inundation by seiche or tsunami (San Mateo County, 1986). In addition, in the event that a seiche occurred due to the proximity of Upper Crystal Springs Reservoir to the San Andreas Fault, there would not likely be substantial damage to the utility facilities because they are uphill from the Reservoir.

The proposed project aims to reduce the risk of erosion to structures onsite by replacing a failing culvert, stabilizing the hillside through revegetation and installing fences to catch potential debris flow. Therefore, there would be no impact concerning mudflow as a result of the proposed project.

**Impact C-HY: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant cumulative impact on hydrology and water quality. (Less than Significant)**

The geographic scope of potential impacts related to hydrology and water quality encompasses the project site and a local drainage that empties to Upper Crystal Springs Reservoir, which could be affected by construction activities.

The proposed project would implement BMPs to minimize erosion and sedimentation during construction to avoid impacts to water quality; therefore project impacts to water quality would be less than significant. Cumulative projects listed above under Section B, Project Description (see Other Projects in the Vicinity) that would disturb soil and entail discharge to local drainages could result in a cumulative construction-related degradation of water quality. However, implementation of the BMP requirements for the proposed project would ensure the project's contribution to any cumulative impact would not be cumulatively considerable. Therefore, no significant cumulative impact would occur due to project implementation.

None of the project activities would change drainage patterns in a way that would increase erosion, sedimentation, or flooding on or off the site. Furthermore, none of the cumulative projects listed above would be constructed in close enough proximity to the project site to have a potential cumulative effect on drainage patterns. Therefore, there would be no cumulative impact related to the alteration of drainage patterns.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less-Than-Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **16. HAZARDS AND HAZARDOUS MATERIALS— Would the project:** | | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☐ | ☒ | ☐ |

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☐ | ☒ |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ | ☐ |
| h) Expose people or structures to a significant risk of loss, injury or death involving fires? | ☐ | ☐ | ☒ | ☐ | ☐ |

*Project Setting*

Development in the vicinity of the project includes the Pulgas Water Temple, Pulgas Dechloramination Facility, and Pulgas Pump Station. Both the Pulgas Dechloramination Facility and Pulgas Pump Station use hazardous materials, as discussed below; however, there are no identified environmental cases[11] or spill sites[12] in the project vicinity that could have affected soil or groundwater quality at the project site[13].

*Regulatory Setting*

Hazardous materials and hazardous wastes are subject to numerous federal, state, and local laws and regulations intended to protect health and safety and the environment. The major federal, state, and regional agencies enforcing these regulations include the U.S. Environmental Protection Agency (U.S. EPA, federal); the DTSC and the RWQCB of the California Environmental Protection Agency (state); and the Bay Area Air Quality Management District (BAAQMD, regional).

*Hazardous Materials Worker Safety Requirements*

The federal Occupational Safety and Health Administration (Fed-OSHA) and the California Occupational Safety and Health Administration (Cal-OSHA) are the agencies responsible for

[11] Environmental cases are sites suspected of releasing hazardous substances or that have had cause for hazardous materials investigations and are identified on regulatory agency lists. These are sites where soil and/or groundwater contamination is known or suspected to have occurred.

[12] Spill sites are locations where a spill has been reported to the state or federal regulatory agencies. Such spills do not always involve a release of hazardous materials.

[13] SFPUC Bureau of Environmental Management staff researched the State Water Resources Control Board GeoTracker website and the State Department of Toxic Substance Control (DTSC) EnviroStor website for hazardous materials sites on or in the vicinity of the proposed project site. No open (under investigation or active remediation) sites were identified. Available online at http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=80+canada+rd%2C+redwood+city%2C+ca. Accessed June 18, 2012.

assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. In California, Cal-OSHA assumes primary responsibility for developing and enforcing workplace safety regulations; Cal-OSHA standards are generally more stringent than federal regulations.

The state regulations concerning the use of hazardous materials in the workplace are included in Title 8 of the California Code of Regulations, which contain requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information relating to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

*Wildland Fire*

The California Public Resources Code, beginning with Section 4427, includes fire safety regulations that: restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors[14] on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided onsite for various types of work in fireprone areas. The Public Resources Code requirements would apply to construction activities at the Reservoir, because this site is an area designated by the California Department of Forestry and Fire Protection (CDF) as a "Wildland Area That May Contain Substantial Forest Fire Risks and Hazards" (CDF, 2000).

**Impact HZ-1: The proposed project would not create a significant hazard through routine transport, use, or disposal of hazardous materials. (Less than Significant)**

Operation of the culvert does not include the use, storage, or generation of hazardous materials requiring a hazardous materials use permit, and the proposed project would not require the use or storage of hazardous wastes. Therefore, this impact is not applicable to the proposed project operation.

As discussed above, no environmental cases or spill sites were identified during database research; therefore, it is unlikely that hazardous materials or contaminated groundwater would be encountered during excavation. Therefore, the proposed project impacts related to the transport, use, or disposal of hazardous materials would be less than significant.

[14] A spark arrestor is a device that prohibits exhaust gases from an internal combustion engine from passing through the impeller blades where they could cause a spark. A carbon trap is commonly used to retain carbon particles from the exhaust.

**Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)**

The proposed project site is on SFPUC Peninsula Watershed Lands inaccessible to the public. The proposed project would not demolish or remove structures that would potentially contain hazardous materials. The only potential release of the hazardous materials to the environment would be from fuels and lubricants used for construction equipment and vehicles. However, there would be no fueling on the construction site, and the staging area is approximately 45 feet away from the intermittent stream. Moreover, the contractor would be required to implement a water quality, erosion, and sediment control plan as described in Section B, Project Description, that would specify appropriate methods for storing hazardous materials, preventing spills (including maintenance of a spill kit onsite to clean up accidental leaks and spills), inspecting for hazardous conditions, and reporting requirements. Therefore, foreseeable or accidental release of hazardous materials during project construction would be less than significant.

Hazardous materials would not be used during operation or maintenance of the culvert and appurtenant structures. Therefore, foreseeable or accidental release of hazardous materials during operation is not applicable.

**Impact HZ-3: The proposed project would not release hazardous emissions or handle acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school. (Not Applicable)**

No existing or proposed school is located within ¼ mile of the proposed project site. Therefore, release or handling of acutely hazardous materials in proximity to a school would not be applicable.

**Impact HZ-4: The proposed project would not be located within an airport land use plan, within 2 miles of a public airport, or in the vicinity of a private air strip. (Not Applicable)**

The nearest airports to the project area are San Francisco International Airport approximately 10 miles to the north and Oakland International Airport approximately 16 miles to the northeast. Therefore, impacts related to location within an airport land use plan, within 2 miles of a public airport, and in the vicinity of a private air strip are not applicable.

**Impact HZ-5: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)**

Construction and operation of the proposed culvert would take place on SFPUC Peninsula Watershed Lands inaccessible to the public. There would be approximately 20 construction-related vehicle trips per day over a two to three month period. Construction vehicles entering or leaving the project site would not substantially interfere with emergency vehicles using either Cañada Road or Edgewood Road. There are no police or fire stations, schools, or hospitals within or adjacent to the project site or in the Peninsula Watershed Lands. Police, fire, or ambulance vehicles are unlikely to use the surrounding roads because land uses (residential, commercial or institutional uses) requiring such services do not exist on the Peninsula Watershed Lands in the

vicinity of the proposed project site. Therefore, construction of the project would not interfere with the San Mateo County emergency response plan; the impact would be less than significant.

Following construction, annual maintenance and cleaning of the culvert one day a year would not interfere with emergency vehicles. Therefore, this this impact would not be applicable.

**Impact HZ-6: The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving fires. (Less than Significant)**

The project site is located in an area classified by the California Department of Forestry and Fire Protection (CDF) as a "Wildland Area That May Contain Substantial Forest Fire Risks and Hazards" (CDF, 2000). The use of construction equipment could pose a wildland fire risk in this area. Therefore, the project construction contractor would be required to comply with the following legal requirements of the California Public Resources Code (PRC) to minimize the risk of wildland fires during construction activities:

- Earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).

- Appropriate fire suppression equipment would be maintained during the highest fire danger period—from April 1 to December 1 (PRC Section 4428).

- On days when a burning permit is required[15], flammable materials would be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain the appropriate fire suppression equipment (PRC Section 4427).

- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials (PRC Section 4431).

The project site is located within an area identified in the *Peninsula Watershed Management Plan* (SFPUC, 2002) as having moderate to high wildfire severity, and construction activities would also be required to comply with Action fir1 of the *Watershed Management Plan*. This action requires compliance with CDF fire prevention regulations for SFPUC vehicles and equipment, as well as certification by the CDF of all non-SFPUC equipment. Compliance with the applicable PRC requirements and Action fir1 of the *Peninsula Watershed Management Plan* would ensure that impacts related to fire hazards during construction are less than significant.

[15] Days when burning permits are required indicate that weather and air quality conditions are such that there would be conditions on residential debris burning. The proposed project would not require a burning permit since the project would not be burning any debris.

**Impact C-HZ: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant impact related to hazards and hazardous materials. (Less than Significant)**

Hazardous materials impacts related to the project could result from use of hazardous materials during construction. These impacts would be primarily restricted to the project area and immediate vicinity; therefore, the geographic scope for cumulative impacts related to hazards includes the project area and immediate vicinity.

As discussed in Impact HZ-1, the proposed project would use common construction-related hazardous materials such as fuels and lubricants. Several other identified projects, including the PG&E Pipeline Safety Enhancement projects, would also use hazardous materials during construction. However, as discussed in Impact HZ-2, the contractor would be required to implement an erosion control plan and would be required to keep a spill kit onsite. Therefore, the project's contribution to any cumulative impact related to hazardous materials would not be cumulatively considerable, and the impact would be less than significant.

As discussed in Impact HZ-5, the project would not impair or interfere with an adopted emergency response plan or emergency evacuation plan because the project would be constructed on SFPUC Peninsula Watershed Lands and would not conflict with the movement of emergency vehicles (police, fire, and ambulance) on Cañada Road or Edgewood Road. Nor would other identified projects in the vicinity use these roads for access to project areas during construction. Therefore, cumulative impacts related to impairment or interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

As discussed in Impact HZ-6, the project would adhere to CDF regulation as well as policies of the WMP to minimize fire hazards. Therefore the project's contribution to any cumulative impacts related to exposing people or structures to fire hazards would not be cumulatively considerable, and the impact would be less than significant.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **17. MINERAL AND ENERGY RESOURCES—Would the project:** | | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Encourage activities that result in the use of large amounts of fuel, water, or energy, or use these resources in a wasteful manner? | ☐ | ☐ | ☒ | ☐ | ☐ |

**Impact ME-1: The proposed project would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. (No Impact)**

If present, mineral resources can be lost when lands underlain by these resources are converted to other uses. Such mineral resources include fuel resources and industrial minerals (e.g., aggregate, sand and gravel, and clay). However, there are no operational mineral resource recovery sites in the project area, and classification performed by the California Geological Survey (formerly the Division of Mines and Geology) under the Surface Mining and Reclamation Act of 1975 determined there are no mineral resources in the project area (Stinson and Mason, 1983). Therefore, the project would not result in the loss of a mineral resource or make a mineral resource inaccessible, and there would be no impact related to these issues.

**Impact ME-2: The proposed project would not encourage activities that would result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner. (Less than Significant)**

Construction of the proposed project would require the use of fuels (primarily gas, diesel, and motor oil) to operate construction machinery during excavation and materials hauling. An additional amount would be used for worker transportation to and from the project site. The majority of the project entails short-term construction activity necessary to install the new culvert, in order to protect utility facilities that serve the SFPUC's regional water system; it would not require excessive energy use. Therefore, impacts related to fuel and energy use during project construction would be less than significant.

Project operation would be similar to existing operations and would not result in an increase in energy demand. No impact related to the operational use of fuel, water, or energy would result.

**Impact C-ME: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant impact on mineral and energy resources. (Less than Significant)**

The geographic scope for potential cumulative energy resources impacts consists of the project vicinity and the broader region.

The proposed project would use energy during construction, as would all of the cumulative projects listed in the discussion of Other Projects in the Vicinity above under Section B, Project Description. The project in combination with the other reasonably foreseeable projects could result in a potentially significant cumulative energy impact during construction. However, as described in Impact ME-2, the proposed project would not result in the wasteful consumption of fuels during project construction. Therefore, the project's contribution to cumulative impacts related to energy use during construction would not be cumulatively considerable (less than significant).

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less-Than-Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **18. AGRICULTURE AND FOREST RESOURCES—** Would the project | | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526)? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ | ☐ |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact AF-1: The proposed project would not result in the conversion of farmland or forest land to non-farm or non-forest use, nor would it conflict with existing agricultural or forest use or zoning. (No Impact)**

The California Department of Conservation's Farmland Mapping and Monitoring Program identifies the project site as "Other Land," defined as land that is not included in any other mapping category (California Department of Conservation, 2010). Common examples of Other Land include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as Other Land.

The proposed project site does not contain agricultural uses and is not zoned for such uses, and the project would not include any improvements that would require a change in land use. The project would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use and would not conflict with existing zoning for agricultural land use or a Williamson Act contract. Therefore, there are no impacts related to the conversion of farmland or conflicts with existing zoning for agricultural uses. Likewise, the project site is not zoned for forest uses, would not result in the loss of forest land or the conversion of forest land to non-forest uses, and would not conflict with existing zoning for or cause rezoning of forest land or timberland. Therefore, the proposed project would have no impact on agricultural or forest resources.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporation | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **19. MANDATORY FINDINGS OF SIGNIFICANCE—Would the project:** | | | | | |
| a) Have the potential to degrade the quality of the environment, 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☒ | ☐ | ☐ | ☐ |
| b) Have impacts that would be individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ | ☐ |

**Impact MF-1: The proposed project could degrade the quality of the environment, reduce the habitat of a fish or wildlife species, or otherwise adversely affect a rare or endangered plant or animal species. (Less than Significant with Mitigation)**

Project-related impacts would be confined predominantly to the construction period. Construction activities associated with the project have the potential to result in impacts related to biological resources. However, with implementation of mitigation measures **M-BI-1a: Protection Measures during Construction for Key Special-Status Species and Other Species of Concern**, **Mitigation Measure, M-BI-1b: Site-Specific Take Avoidance Protocols for San Francisco Garter Snake and California Red-Legged Frog, M-BI-1c: Mitigation Measure for San Francisco Dusky-Footed Woodrat, and M-BI-1d: Mitigation Measure for Protection of Nesting Birds and Raptors**, all project-related impacts would be less than significant with mitigation incorporated.

The proposed project would result in permanent removal of approximately 570 square feet of riparian habitat and permanently impact waters of the U.S.; however, with the implementation of **Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat**, the removed vegetation would be restored in the area adjacent to the area of impact, and the waters of the U.S. would be compensated for at an appropriate location in the Peninsula Wwatershed. Therefore, impacts would be less than significant with mitigation incorporated.

**Impact MF-2: The proposed project could eliminate important examples of the major periods of California history or prehistory. (Less than Significant with Mitigation)**

Project-related impacts to cultural and especially archaeological resources would be limited to the construction period. Construction activities associated with the project have the potential to result in the accidental discovery of archaeological resources and human remains. However, with implementation of mitigation measures **M-CP-2**, **Accidental Discovery of Archaeological Resources** and **M-CP-4 Treatment of Human Remains and Associated or Unassociated Funerary Objects,** all project-related impacts would be less than significant with mitigation incorporated.

**Impact MF-3: The proposed project could have impacts that would be individually limited, but cumulatively considerable. However, the project's contribution to these cumulative impacts would be less than significant or less than significant with implementation of the mitigation measures described herein. (Less than Significant with Mitigation)**

Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when taken together, are "considerable" or that compound or increase other environmental impacts. A cumulative impact from several projects is the change in the environment that would result from the incremental impact of the project when added to those of other closely related past, present, or reasonably foreseeable future projects.

The cumulative analysis for individual topic areas is included in Sections E.1 through E.18. In accordance with CEQA Guidelines, Section 15130(b)(1), these analyses are based on the list of past, present, and probable future projects presented in the Other Projects in the Vicinity discussion provided above in Section B, Project Description; the projects listed in combination with the proposed project could result in related or cumulative impacts due to their location and/or construction schedule.

As discussed in the individual topic areas in Sections E.1 through E.18, the proposed project could contribute to cumulative construction-related impacts. However, for the reasons described in Sections E.1 through E.18, including implementation of project-level mitigation measures, the project's contribution to all cumulative impacts would not be cumulatively considerable (less than significant).

**Impact MF-4: The proposed project could have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. (Less than Significant with Mitigation)**

The discussion in Section E, Evaluation of Environmental Effects, identifies potentially significant impacts related to cultural resources and biological resources that could result from implementation of the proposed project. Mitigation measures are provided in this initial study to reduce these potentially significant project-level impacts to a less-than-significant level. No project-level significant impacts were identified in the areas of land use and land use planning, aesthetics, population and housing, transportation and circulation, noise, air quality, greenhouse gas emissions, wind and shadow, recreation, utilities and service systems, public services, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral and energy resources, or agriculture and forest resources. Therefore, with implementation of the mitigation measures, the proposed project would not result in substantial adverse effects, direct or indirect, on human beings.

## F. ~~Neighborhood Notice~~ Public Notice and Comment

A "Notification of Project Receiving Environmental Review" was distributed on June 21, 2012, to the owners of properties within 300 feet of the project as well as to other interested parties**.** The Planning Department received one email in response to the notice. San Mateo County Department of Public Works made note that the SFPUC may need to obtain an encroachment permit from San Mateo County Department of Public Works for the use of Cañada Road.

On July 25, 2012, the San Francisco Planning Department circulated a Notice of Availability of and Intent to Adopt a Preliminary Mitigated Negative Declaration to appropriate parties. The San Mateo County Department of Public Works requested through an email to the Planning Department that the SFPUC video Canada Road from Highway 92 to Woodside pre-construction and post-construction. The Planning Department also received a written comment letter from the San Francisco Bay RWQCB. Below is a summary of the letter and the changes that have been incorporated into the FMND in response to the comments. Attachment B includes a copy of the RWQCB letter and the response letter from the Planning Department.

- RWQCB notes that the MND should include an analysis that identifies the least environmentally damaging practicable alternative (LEDPA).
- RWQCB requests that the MND include a description of the existing and historic condition of the stream on and offsite as well as other aquatic resources that may be present.
- RWQCB requests that the MND includes an analysis of upstream and downstream impacts from potential changes in sediment load changes.
- RWQCB requests that the SFPUC conduct hydrologic and sediment transport studies to confirm that the culvert is sized appropriately to pass the sediment load and stream flow, and does not result in geomorphic changes upstream and downstream of the project site.
- RWQCB recommends that the MND establish a 100-foot buffer between staging area and the water of the state.

The following is a summary of changes that have been incorporated into this document in response to the RWQCB comment letter.

- The Environmental Setting discussion under Section E.13, Biological Resources, has been revised to augment the description of the condition of the affected stream.
- In response to the comment on changes in sediment load that would affect biological resources, the SFPUC has conducted a hydrogeomorphic analysis (GTC, 2012b) and the text from the Impacts discussion under Section E.15, Hydrology and Water Quality has been revised to evaluate the potential for erosion upstream and downstream from the project.
- Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat, was revised to require a 75-foot buffer from waters of the State to proposed project staging areas.
- Attachment B was added to include the RWQCB comment letter and CCSF response letter.

## G. Determination

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Date: 7/24/12

D. Sobolave for Bill Wycko

Bill Wycko
Environmental Review Officer
for John Rahaim
Director of Planning

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# I. List of Preparers

## Initial Study Authors

Planning Department, City and County of San Francisco
Environmental Planning
1650 Mission Street, Suite 500
San Francisco, California 94103

Environmental Review Officer: Bill Wycko
Environmental Planner: Chris Kern
Senior Environmental Planner: Steve Smith

San Francisco Public Utilities Commission
Bureau of Environmental Management
525 Golden Gate Avenue, 6th Floor
San Francisco, California 94102

YinLan Zhang: Environmental Project Manager
Barry Pearl: Environmental Planner
Sonya Foree: Biologist
Alleliah Nuguid: Technical Editor

## Project Sponsor

San Francisco Public Utilities Commission
Project Management Bureau
525 Golden Gate Avenue, 6th Floor
San Francisco, California 94102

Annie Li: Engineering Project Manager
Eric Choi: Project Engineer

## Environmental Consultants

Anthropological Studies Center
Sonoma State University
Rohnert Park, CA 94928

Adrian Praetzellis: Archaeologist

# Attachment A. Criteria Emissions Calculations

# Puglas G20 Drainage and Erosion Repair Criteria Emmission Calculation Screening Tool Data Inputs

The following Inputs are required:
1) Project site data and schedule
2) Offsite truck trip data
3) On-site construction equipment emissions data

**Data Input Instructions:**

**Data Input Check:** Complete: No Errors or Missing Da

## Follow the data entry instructions under each section.

### 1) Project Site Data and Schedule Inputs

**Site Data Instructions:**

**Project Name:** Pulgas G20 Shaft Site Drainage (Enter Text)

**Project Size:** 1.0 Acre (Select from dropdown menu)

**Landuse Type:** San Francisco - Rural (Select from dropdown menu)

**Project Start Date:** 8/15/2012 (Enter in mm/dd/yyyy format)
**Project End Date:** 10/15/2012 (Enter in mm/dd/yyyy format)
**Project Duration*:** 0.17 Years

***Note:** Regardless of project duration, even when greater than 2.25 years, the health risk analysis will be based on the most

**Project Phasing Instructions:**

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Data Check | |
|---|---|---|---|---|---|---|---|
| **Phase Starting Date:** | 8/15/2012 | | | | | 1 Phase Entered | (Enter in mm/dd/yyyy format) |
| **Phase End Date:** | 10/15/2012 | | | | | Project End Date Matcl | (Enter in mm/dd/yyyy format) |
| **Construction Hour per day:** | 12 | | | | | Hours Entered | (Enter integer number between 1 and 24) |
| **Construction Days per week:** | 5 | | | | | Hours Entered | (Enter integer number between 1 and 7) |

### 2) Offsite Heavy Duty Diesel Truck Trip Data Inputs

**Offsite Truck Instructions:**

**Diesel Truck Trip Table**

| Entry ID | Phase | Year | Total Truck Trips | Max Truck Trips per Hour | Onsite Idling Time (minutes) [1] | Data Check |
|---|---|---|---|---|---|---|
| A | 1 | 2012 | 600 | 3 | 20 | Complete |
| B | | | | | | No Entry |
| C | | | | | | No Entry |
| D | | | | | | No Entry |
| E | | | | | | No Entry |

**Table Notes:**

### 3) On-Site Construction Equipment Data Inputs

**Construction Equipment Instructions:**

**Construction Equipment Table**

| Entry ID | Equipment and Usage Inputs | | | | | | | | | | Diesel Engine Control | | Data Check |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phase[1] | Year[1] | Fuel Type | Equipment Type | Horsepower (HP)[2] | HP Check | Equipment Quantity | # of Working Days[3] | Daily Hours of Operation Per Piece of Equip[4] | Engine Standard[5] | Diesel Particulate Filter[6] | Diesel Type[7] | |
| 1 | 1 | 2012 | Diesel | Cranes | Typical | 208 | 1 | 25 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 2 | 1 | 2012 | Diesel | Excavators | Typical | 157 | 1 | 60 | 6 | Tier 2 | No | on Bio-Dies | Complete |
| 3 | 1 | 2012 | Diesel | id Steer Loaders (Bobca | Typical | 37 | 1 | 10 | 6 | Tier 2 | No | on Bio-Dies | Complete |
| 4 | 1 | 2012 | Diesel | Bore/Drill Rigs | Typical | 82 | 1 | 10 | 6 | Tier 2 | No | on Bio-Dies | Complete |
| 5 | 1 | 2012 | Diesel | Rubber Tired Loaders | Typical | 87 | 1 | 60 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 6 | 1 | 2012 | Diesel | er Construction Equipn | Typical | 327 | 1 | 30 | 6 | Tier 2 | No | on Bio-Dies | Complete |
| 7 | 1 | 2012 | Diesel | Off-Highway Trucks | Typical | 381 | 1 | 60 | 6 | Tier 2 | No | on Bio-Dies | Complete |
| 8 | 1 | 2012 | Diesel | General Industrial Equi | Typical | 150 | 1 | 60 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 9 | 1 | 2012 | Diesel | Off-Highway Trucks | Typical | 381 | 2 | 2 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 10 | 1 | 2012 | Diesel | er Construction Equipn | Typical | 327 | 1 | 2 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 11 | 1 | 2012 | Diesel | General Industrial Equi | Typical | 150 | 1 | 2 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 12 | 1 | 2012 | Diesel | Off-Highway Trucks | Typical | 381 | 2 | 10 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 13 | 1 | 2012 | Diesel | Off-Highway Trucks | Typical | 381 | 1 | 3 | 4 | Tier 2 | No | on Bio-Dies | Complete |
| 14 | | | | | | | | | | | | | No Entry |

**Daily Average Criteria Pollutant Emissions**

| Chemical | Emissions By Phase and Project Total (lbs/day) [1] | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Project |
| king Days[2] | 62 | | | | | 62 |
| PM10 | 0.94 | | | | | 0.94 |
| PM2.5 | 0.93 | | | | | 0.93 |
| NOx | 23.40 | | | | | 23.40 |
| ROG | 3.47 | | | | | 3.47 |

**Table Notes:**
1) Daily average emissions are calculated as the quantity of emissions divided by the total number days for each phase and the project as a whole. Note that this total does not include criteria pollutant emissions for the entire truck trip length for onroad trucks or worker commute trips.
2) Working days is calculated as the number of working days between the project start date and end date based on the user specified number of construction days per week.

# Attachment B. Comment Letter Received During the Public Comment Period and Response to Comment Letter

Date: August 24, 2012
CIWQS No. 785433 (BL)

Sent via electronic mail: No hard copy to follow

San Francisco Planning Department
Attn.: Mr. Wycko
Environmental Review Officer
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

**Subject: CEQA Comments on Preliminary Mitigated Negative Declaration for the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project SCH No. 2012.0475E**

Dear Mr. Wycko:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff has reviewed the Preliminary Mitigated Negative Declaration (MND) for the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair Project (Project). The Project consists of the San Francisco Public Utilities Commission (SFPUC) installing a new culvert beneath an existing PG&E electrical substation and to abandon the existing failing culvert. The new concrete culvert would be constructed adjacent to the existing culvert, and would be approximately 6 feet wide, 200 feet long, and 4 feet tall. Riprap would be placed at the inlet and outlet of the culvert to dissipate energy from stream flow. Additionally, two fences would be constructed on a slope adjacent to the substation to catch and deflect erosion debris. Based on the information provided in the MND we offer the following comments.

Please note that these comments also apply to the submission of Project information in the application for Clean Water Act (CWA) Section 401 water quality certification and should also be addressed therein.

## Comments on Alternatives Analysis and Impacts Avoidance

The Project described in the MND includes impacts to aquatic resources including wetlands, riparian habitat, streams or tributaries, or other waters of the state. Specifically, the Project proposes to: (1) abandon and fill an existing intermittent stream; and (2) remove riparian vegetation during construction activities. Both a CWA Section 401 water quality certification and a CWA Section 404 Permit from the U.S. Army Corps of Engineers will be necessary for fill impacts to waters of the United States. Additionally, the project proponent may need to file a Report of Waste Discharge if the

Project may impact waters of the state, even if such waters have been excluded from federal jurisdiction (e.g., isolated wetlands, ephemeral streams without a significant nexus, or stream banks above the ordinary high-water mark). A Stream Bed Alteration Agreement from the California Department of Fish and Game may also be necessary since the Project involves stream channels and riparian habitat.

The Water Board adopted U.S. Environmental Protection Agency's Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredge or Fill Material," dated December 24, 1980, in its Basin Plan (San Francisco Bay Basin Water Quality Control Plan) for determining the circumstance under which filling of wetlands, streams or other waters of the state may be permitted. Section 404(b)(1) Guidelines prohibit all discharges of fill material into regulated waters of the United States, unless a discharge, as proposed, constitutes the least environmentally damaging practicable alternative (LEDPA) that will achieve the basic project purpose.

The Guidelines sequence the order in which proposals should be approached: 1) Avoid - avoid impacts to waters; 2) Minimize - modify project to minimize impacts to waters; and, 3) Mitigate – once impacts have been fully minimized, compensate for unavoidable impacts to waters. When it is not possible to avoid impacts to water bodies, disturbance should be minimized. Mitigation for lost water body acreage and functions through restoration or creation should only be considered after disturbance has been minimized. Where impacts cannot be avoided, the creation of adequate mitigation habitat to compensate for the loss of water body acreage, functions, and values must be provided.

The final MND (and the application for 401 water quality certification) should include an analysis that identifies the LEDPA by evaluating alternatives that first, avoid impacts; second, minimize impacts; and lastly, compensate for unavoidable impacts. This LEDPA analysis should include alternatives with measures or combinations of measures that prevent the placement of fill in waters of the state. This analysis should include, in part, a study on the feasibility of repairing the existing culvert. The Water Board considers the extreme uncertainty and low likelihood of success in stream channel replacement/creation when making permitting decisions. If the analysis demonstrates that the only feasible alternative is constructing a new channel, SFPUC should also analyze design alternatives that incorporate some aquatic resource function. This would include: (1) constructing an open channel with natural bed and banks; (2) using an oversized culvert design to maintain natural substrates in the channel bed; (3) constructing a daylighted culvert with natural bed and armored banks; and (4) incorporating bioengineering techniques as opposed to riprap at the inlet and outlet of the culvert to dissipate energy.

**Comments on Impacts to Biological Resources**

The final MND (and the application for 401 water quality certification) needs to more adequately consider direct, secondary, and cumulative temporary and permanent impacts to biological resources. The final MND (and the application for 401 water quality certification) should include an accounting of the location and condition of existing and historic stream channels and aquatic resources both in the Project boundary and upstream and downstream of the Project site. The Project will likely result in downstream hydrologic and sediment load change that will affect biological resources

including the beneficial uses of waters of the state. These downstream effects need to be included in the approach to impact analysis and identification of mitigation measures to minimize any adverse environmental impacts.

**Comments on Impacts to Hydrology and Water Quality**

As noted above, the final MND (and the application for 401 water quality certification) should include an analysis that identifies the LEDPA by evaluating alternatives that avoid and minimize impacts. If the analysis identifies the proposed Project design as the least environmentally damaging practicable alternative, additional hydrogeomorphic analysis will need to be undertaken to accurately describe any potential impacts to the categories of Hydrology and Water Quality and Biological Resources.

The MND states, "none of the Project activities would change drainage patterns in a way that would increase erosion, sedimentation, or flooding on or off the site (p. 76)." Without the requisite hydrogeomorphic analysis this assumption is unfounded. SFPUC should conduct hydrologic and sediment transport studies to confirm the culvert is sized appropriately to pass the sediment load and stream flow and does not result in any geomorphic changes to channel shape or slope upstream and downstream of the Project site or require ongoing maintenance to remove sediment deposited within the box culvert. The hydrogeomorphic analysis should demonstrate that the Project design will not cause channel scour or sedimentation downstream and/or create channel slope instabilities and headcutting upstream. The analysis should also include hydraulic information to ensure adequate flow capacity of the culvert (based on the ability to route storm flows of a specified recurrence interval). This analysis is critical to assess potential impacts and appropriate impact avoidance measures.

*Buffers Around Staging Areas*

The MND states that the, "staging area is approximately 45 feet away from the intermittent stream (p. 79)." The final MND should identify the establishment of buffers around staging areas as a mitigation measures for the categories of Biological Resources and Hydrology and Water Quality. To avoid water quality and habitat impacts from Project staging areas, we recommend establishing a larger buffer area of 100 feet around all waters of the state in the Project area. This is consistent with the recommendations for construction site best management practices from Caltrans (2003[1], p. 71) and CASQA (2009[2], p. 111):

- The buffer width needed to maintain water quality ranges from 5 to 30 m (16 to 98 ft)…Buffer widths for habitat concerns are typically wider than those recommended for water quality concerns (30 to 500 m [98 to 1,640 ft]).

[1] State of California Department of Transportation (Caltrans). 2003. Storm Water Quality Handbooks: Construction Site Best Management Practices (BMPs) Manual. (available online at: http://www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf).
[2] California Stormwater Quality Association (CASQA). 2009. Stormwater Best Management Practice Handbook Portal: Construction.

- The buffer width needed to maintain water quality ranges from 15 to 100 ft…Buffer widths for habitat concerns are typically wider than those recommended for water quality concerns (100 to 1500 ft).

**Closing**

Please contact me at 510-622-2308 or blivsey@waterboards.ca.gov with any questions or comments.

Sincerely,

Ben Livsey
Environmental Specialist

cc: State Clearinghouse, state.clearinghouse@opr.ca.gov
SWRCB, DWQ, Stateboard401@waterboards.ca.gov
USACE, Greg Brown, gregory.g.brown@usace.army.mil
DFG, Suzanne Deleon, sdeleon@dfg.ca.gov
SFPUC, Bureau of Environmental Management:
Debbie Craven-Green, DCravenGreen@sfwater.org
YinLan Zhang, YZhang@sfwater.org

SAN FRANCISCO
**PLANNING DEPARTMENT**

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
**415.558.6378**

Fax:
**415.558.6409**

Planning
Information:
**415.558.6377**

September 19, 2012

Ben Livsey
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

RE: Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair MND (EP Case No. 2012.0475E)

Dear Mr. Livsey:

The following provides responses to your letter dated August 24, 2012, which provided comments on the Preliminary Mitigated Negative Declaration (MND) for the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair project. The enclosed Final MND includes your comment letter and responses to your comments in Attachment B of the Initial Study. Revisions to the Preliminary MND made in responses to your comments are reflected in the Final MND and in the responses below (new text is underlined and deleted text is shown as ~~strikeout~~).

**RWQCB Comments on Alternatives Analysis and Impact Avoidance:** The RWQCB states that the final MND should include an analysis that identifies the least environmentally damaging practicable alternative (LEDPA).

**Response to Comment:** A LEDPA analysis is not required by CEQA. However, the project proponent (SFPUC) indicates the permit application for compliance with Clean Water Act Section 401 will include an impact avoidance and minimization analysis, as required by the permit.

**RWQCB Comments on Impacts to Biological Resources:** The RWQCB states that the final MND should include an accounting of the location and condition of existing and historic stream channels and aquatic resources both in the project boundary and upstream and downstream of the project site. The RWQCB further comments that the project will likely result in downstream hydrologic and sediment load change that will affect biological resources including the beneficial uses of waters of the state. These downstream effects need to be included in the approach to impact analysis and identification of mitigation measures.

**Response to Comment:** In response to the comment concerning condition of the stream, the MND has been revised to describe the condition of the stream channel in the project boundary and upstream and downstream of the project site. It should be noted that CEQA does not require an analysis of impacts based on historic conditions; impacts are gauged against a baseline description, which generally equates to existing conditions at the time of the environmental analysis. Notwithstanding, the following text from the Environmental Setting discussion under Section E.13, Biological Resources, has been appended to describe the condition of the stream:

> ***Natural Communities (Including Wetlands)***
>
> The intermittent drainage onsite is a blue line stream on the Woodside U.S. Geological Survey 7.5-minute quadrangle and is directly connected to the Upper Crystal Springs

Reservoir; therefore, it is a jurisdictional water of the U.S. under the federal Clean Water Act. The stream was culverted in the late 1960s due to construction of the PG&E substation. The historic stream channel is within the same approximate alignment as the existing culvert. Upstream, the stream originates northeast of I-280 and passes through a 42-inch pipe under the freeway before flowing through a detention basin. The stream is a vegetated channel for approximately 2,600 feet southwest of I-280 before being culverted on the project site. Downstream, the stream is a primarily a vegetated channel for approximately 3,900 feet (it passes through a pipe under Cañada Road) before discharging into the Upper Crystal Springs Reservoir. Prior to the construction of the dam, the stream most likely discharged to Laguna Grande, the historic stream that was flooded to create Upper Crystal Springs Reservoir in 1877.

In response to the comment on changes in sediment load that could affect biological resources, Geotechnical Consultants, Inc. (GTC) conducted a hydrogeomorphic analysis in a memo dated August 30, 2012, which is attached to this letter. The following text from the impacts discussion of the MND under Section E.15, Hydrology and Water Quality has been appended to analyze the potential for erosion upstream and downstream from the project, and reflects the analysis provided by GTC:

**Impact HY-3: The proposed project would not alter the existing drainage pattern or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide a substantial additional source of polluted runoff. (Less than Significant)**

During construction, ~~E~~excavation and grading activities can alter the drainage patterns of a site in a manner that would result in onsite or offsite erosion or siltation. The proposed project would only involve minor grading (in the staging areas) and excavation to install the culvert and appurtenances. However, as discussed in Impact HY-1, the contractor would implement erosion and sedimentation control BMPs to prevent sediment laden water from leaving the site. Moreover, the site would be restored to its pre-project contours post-construction, and therefore, the drainage pattern would not be altered. With implementation of surface water BMPs that would prevent substantial erosion or siltation on or off the site, impacts related to erosion and siltation offsite would be less than significant. While no significant impacts are anticipated from construction, Mitigation Measure M-BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat, requires the protection of riparian habitat onsite and restoration of all temporarily disturbed riparian vegetation, which would further limit any erosion and sedimentation impacts resulting from construction activity.

To minimize the potential for erosion and sedimentation during operations, the proposed culvert is designed to accommodate maximum anticipated stream flows and dissipate the energy and erosive force from the stream. The flow of the intermittent stream onsite during the 100-year storm event is calculated to be 79 cubic feet per second (cfs). The proposed culvert would be 6 feet wide by 4 feet tall and designed to accommodate a discharge rate of 140 cfs, which exceeds the capacity necessary to convey the 100-year

storm. There is no evidence of erosion upstream of the existing 42-inch CMP culvert which indicates that the existing culvert is adequate to handle current stream flows without causing adverse effects to drainage geomorphology upstream. The proposed culvert, which would be larger than the existing culvert, would be adequate to handle the maximum stream flow without causing erosion. Also, the size of the proposed culvert minimizes the potential that the culvert would become clogged with sediment and debris, which can cause localized flooding as well as erosion. With respect to erosion downstream of the culvert, the proposed project would install 10 feet of riprap at both the outlet and inlet to dissipate energy upstream and downstream of the proposed culvert to avoid scouring of the stream bed and bank (GTC, 2012b). Because the proposed culvert would be adequately sized to accommodate the 100-year storm event and is designed with features to minimize erosion upstream and downstream of the culvert, impacts related to altering drainage patterns and contributing to polluted runoff would be less than significant.

**RWQCB Comments on Impacts to Hydrology and Water Quality:** The RWQCB states that without the requisite hydrogeomorphic analysis the MND cannot conclude that the project would not change drainage patterns in a way that would increase erosion, sedimentation, or flooding on or off the site. The RWQCB states that the SFPUC should conduct hydrologic and sediment transport studies to confirm the culvert is sized appropriately to pass the sediment load and stream flow and does not result in any geomorphic changes to channel shape or slope upstream and downstream of the project site or require ongoing maintenance to remove sediment deposited within the box culvert. The hydrogeomorphic analysis should demonstrate that the Project design will not cause channel scour or sedimentation downstream and/or create channel slope instabilities and headcutting upstream. The analysis should also include hydraulic information to ensure adequate flow capacity of the culvert (based on the ability to route storm flows of a specified recurrence interval). This analysis is critical to assess potential impacts and appropriate impact avoidance measures.

**Response to Comment:** In response to this RWQCB comment, the MND has been revised based in part on updated analysis provided by Geotechnical Consultants, Inc. (GTC 2012b). As shown in the MND text revisions above, the proposed culvert is determined to be adequately sized and designed to have a less than significant impact related to erosion and sedimentation.

**RWQCB Comment on Buffers Around Staging Areas:** The RWQCB requests that the final MND identify the establishment of buffers around staging areas as mitigation measures for the categories of Biological Resources and Hydrology and Water Quality. The RWQCB recommends a buffer of 100 feet.

**Response to Comment:** Due to the limited space onsite, a 100-foot buffer for staging is not feasible without resulting in additional vegetation removal. However, a buffer of 75 feet will be provided during construction which would be sufficient given that the majority of the stream is culverted onsite and exposure to potential polluted runoff from construction staging areas would be unlikely with implementation of BMPs. Mitigation Measure BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat, is revised in the Final MND as follows:

**Mitigation Measure BI-2: Protection and Compensation for Loss of Jurisdictional Waters and Riparian Habitat.**

To protect riparian habitat onsite, the SFPUC will implement measures during construction to protect wildlife and adjacent riparian resources including flagging the perimeter of the worksite to prevent damage to adjacent riparian habitat, and prohibiting stockpiling of materials or soil within the creek bank, or the riparian area surrounding the creek. All staging areas within the construction limits would be buffered by a minimum of 75 feet distance from the stream.

If you wish to obtain an electronic version of the Final MND and IS, it is available to view or download from the Planning Department's Environmental Planning web page (tinyurl.com/puccases).

Please contact me at 415/558-6373 or at steve.smith@sfgov.org if you have any questions or require further information regarding these responses to your comments on the Pulgas G20 Shaft Site Drainage Improvements and Erosion Repair project Preliminary MND and IS.

Sincerely,

Steven H. Smith, AICP
Senior Environmental Planner
Environmental Planning Division

Cc: Bill Wycko, San Francisco Planning Dept.
YinLan Zhang, SFPUC

Enclosure: Final MND/IS, GTC Memo

**GEOTECHNICAL CONSULTANTS, INC.**
Geotechnical Engineering • Geology • Hydrogeology

San Francisco Public Utilities Commission
Water Supply and Treatment Division
1000 El Camino Real, P.O. Box 730
Millbrae, California 94030

August 30, 2012

Attention: Eric Choi, P.E., SFPUC
Annie Li, P.E., SFPUC

Subject: Response to RWQCB Comments
Pulgas G-20 Shaft Site Erosion Evaluation

Dear Mr. Choi and Ms. Li:

As requested, we evaluated the culvert replacement at the Pulgas G-20 Shaft Site in order to address the Regional Water Quality Control Board's (RWQCB) comments regarding the need to size the culvert to safely pass the 100-year storm and that the new culvert should not cause erosion.

The proposed project replaces an existing 42-inch diameter corrugated metal pipe (CMP) that is corroding and failing with a 6-foot wide by 4-foot high concrete box culvert. The 42-inch CMP was installed in the late 1960s and has been passing stormwater flows without known incidents until a winter storm in 2011. The erosion in 2011 was caused by an accumulation of vegetation debris at the culvert inlet so that the flow was severely constricted.

We evaluated the required discharge capacity of the culvert using the Rational Method. This calculation indicated a required discharge of 79 cubic feet per second (cfs) for the 100-year storm. Our calculation is attached to this letter. The Rational Method is a simplified approach that does not take into account the complexities of the drainage system upstream of the culvert. The land to the north of Interstate 280, which accounts for approximately one-half of the total drainage area, is conveyed to an approximately 42-inch pipe that passes below I-280. A riser pipe and detention basin control the flow at the downstream end of I-280. These structures upstream of the culvert would reduce the peak discharge at the Pulgas G-20 site. The discharge capacity of a 42-inch CMP which has been handling the stormwater flows to date, without producing headwaters upstream of the culvert, is estimated to be on the order of 45 cfs. Based on the above observations and evaluation, the culvert replacement should be sized to safely pass between 45 and 79 cfs for the 100-year storm. The discharge capacity of a 4' x 6' box culvert, without producing headwaters upstream of the culvert, is estimated to be on the order of 140 cfs. Therefore, the culvert is appropriately sized (or oversized) to safely pass the 100-year storm.

The culvert replacement should not change the flow characteristics of the seasonal drainage. Also, there will be no significant changes or disturbance to the streambed either upstream or

downstream of the culvert. Some scour was observed at the outlet of the 42" CMP despite having a concrete apron at the downstream end. Therefore, to help control erosion, we incorporated rip-rap at the culvert inlet and outlet for a distance of at least 10 feet. The rip-rap and revegetation are designed to reduce the amount of erosion that has historically come from this portion of the seasonal drainage.

Please call if you have any questions.


Sincerely,
GEOTECHNICAL CONSULTANTS, INC.

Deron J. van Hoff 8/30/12

Deron J. van Hoff, P.E., G.E.
Vice President

Attachment: Calculation of Peak Discharge for 100-year Storm at Pulgas G-20 Shaft Site Box Culvert