# SAN JOAQUIN VALLEY COMMUNICATION SYSTEM UPGRADE PROJECT

## Final Mitigated Negative Declaration
## Planning Department Case No. 2012.0183E

June 27, 2013

City and County of San Francisco
San Francisco Planning Department

# SAN JOAQUIN VALLEY COMMUNICATION SYSTEM UPGRADE PROJECT

## Final Mitigated Negative Declaration
## Planning Department Case No. 2012.0183E

June 27, 2013

City and County of San Francisco
San Francisco Planning Department

SAN FRANCISCO
**PLANNING DEPARTMENT**

# Final 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**

| | |
|---|---|
| *Date:* | March 6, 2013; amended on June 27, 2013 (amendments to the PMND are shown in deletions as ~~strikethrough~~; additions in double underline) |
| *Case No.:* | **2012.0183E** |
| *Project Title:* | **San Joaquin Valley Communication System Upgrade Project** |
| *Project Location:* | 20 Project Sites: Tuolumne, Stanislaus, San Joaquin, Contra Costa and Alameda Counties |
| *Project Sponsor* | San Francisco Public Utilities Commission<br>Craig Freeman - (415) 934-5740<br>CFreeman@sfwater.org |
| *Lead Agency:* | San Francisco Planning Department – Environmental Planning |
| *Staff Contact:* | Steven Smith – (415) 558-6373<br>Steve.Smith@sfgov.org |

## PROJECT DESCRIPTION:

The San Francisco Public Utilities Commission (SFPUC) proposes to implement the San Joaquin Valley Communication System (SJVCS) Upgrade Project (the "project") which would provide an upgraded communication system for SFPUC facilities located primarily within the San Joaquin Valley. The project consists of the installation of microwave radio antennas on either new or existing radio towers at 20 project sites. The communication system would use digital microwave radios that have the necessary bandwidth to provide system controls, telecommunications, and security at control stations along the water distribution system.

The SJVCS project sites are located between Moccasin Peak on the east and the Sunol Valley approximately 90 miles to the west. At each site, the SFPUC would install one to four new microwave antennas (parabolic dishes) on either an existing tower or a new radio tower ranging from 20- to 140-feet tall. Proposed power equipment at some of the sites consists of photovoltaic (PV) solar panels and propane-fueled emergency generators.

Project sites are located within the following counties: Tuolumne, Stanislaus, San Joaquin, Contra Costa and Alameda counties. The project sites are located on property owned by the SFPUC, within an easement granted to SFPUC, or at an existing radio tower site owned by another party. At project sites owned by others, the SFPUC would lease space to install its radio communication equipment.

Project construction activities are anticipated to begin in early 2014 and take approximately 12 to 15 months to complete. The construction schedule assumes that construction would occur at several sites concurrently. The duration of construction at each project site would vary with the type of improvements proposed, but generally would require about one month at existing tower sites and one to two months for new tower sites.

## FINDING:

This project could not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and 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.

SARAH JONES
Acting Environmental Review Officer

June 27, 2013
Date of Adoption of Final Mitigated Negative Declaration

cc: Craig Freeman, SFPUC
Master Decision File
Distribution List


SAN FRANCISCO PLANNING DEPARTMENT

# INITIAL STUDY

## Case Number 2012.0183E

## San Joaquin Valley Communication System Upgrade Project

## Table of Contents

## List of Figures

*Page*

## List of Figures (continued)



## List of Tables

*Page*

## List of Tables (continued)

# Acronyms and Abbreviations

| | |
|---|---|
| A | attainment |
| AAA | American Automobile Association |
| AB | Assembly Bill |
| ACEC | Area of Critical Environmental Concern |
| amsl | above mean sea level |
| ATC | American Tower Corporation |
| BAAQMD | Bay Area Air Quality Management District |
| BLM | Bureau of Land Management |
| BMP | best management practice |
| California Register | California Register of Historical Resources |
| CAP | Clean Air Plan |
| C-APE | CEQA-Area of Potential Effects |
| CARB | California Air Resources Board |
| CBC | California Building Code |
| CCIC | Central California Information Center |
| CCP | Comprehensive Conservation Plan |
| CCR | California Code of Regulations |
| CCSF | City and County of San Francisco |
| CDFG | California Department of Fish and Game |
| CDFW | California Department of Fish and Wildlife (formerly CDFG) |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CGS | California Geological Survey |
| CIWMB | California Integrated Waste Management Board |
| CMA | congestion management agency |
| CMP | Congestion Management Plan |
| CNDDB | California Natural Diversity Database |
| CNEL | community noise equivalent level |
| CNPS | California Native Plant Society |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2E$ | carbon dioxide-equivalent |
| CRLF | California red-legged frog |
| CTS | California tiger salamander |
| dB | decibels |
| dBA | A-weighted decibels |
| DPM | diesel particulate matter |

| | |
|---|---|
| DTSC | Department of Toxic Substances Control |
| EA | Environmental Assessment |
| ECAP | East County Area Plan |
| EIR | Environmental Impact Report |
| ERO | Environmental Review Officer |
| FAA | Federal Aviation Administration |
| FARR | Final Archeological Resources Report |
| FCC | Federal Communications Commission |
| FERC | Federal Energy Regulatory Commission |
| FTA | Federal Transportation Administration |
| GHG | greenhouse gases |
| GHz | gigaHertz |
| HHWP | Hetch Hetchy Water & Power |
| I- | Interstate Highway |
| in/sec | inches per second |
| IS | Initial Study |
| kW | kilowatts |
| kWh | kilowatt-hours |
| lbs | pounds |
| Ldn | day-night noise level |
| LEED | Leadership in Energy and Environmental Design |
| Leq | steady-state acoustical energy level |
| Leq(24) | steady-state acoustical energy level over a 24-hour period |
| LOS | level-of-service |
| LPG | liquefied propane gas |
| LUST | Leaking Underground Storage Tank (database) |
| MCAB | Mountain Counties Air Basin |
| MHz | megaHertz |
| MID | Modesto Irrigation District |
| $MMTCO_2E$ | million gross metric tons of carbon dioxide-equivalent |
| MND | Mitigated Negative Declaration |
| MPO | metropolitan planning organization |
| MT | metric tons |
| MW | megawatts |
| N | nonattainment |
| NA | not applicable, no applicable standard |
| NAAQS | National Ambient Air Quality Standards |
| NAHC | Native American Heritage Commission |
| ND | no designation |
| NERC | North American Electricity Reliability Corporation |

| | |
|---|---|
| NOI | Notice of Intent |
| NOx | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| National Register | National Register of Historic Places |
| NWIC | Northwest Information Center |
| NWR | National Wildlife Refuge |
| OPR | California Governor's Office of Planning and Research |
| PG&E | Pacific Gas and Electric Co. |
| $PM_{10}$ | particulate matter, less than 10 microns in diameter |
| $PM_{2.5}$ | fine particulate matter, less than 2.5 microns in diameter |
| ppm | parts per million |
| PPV | peak particle velocity |
| PV | photovoltaic |
| RF | radio frequency |
| ROG | reactive organic gases |
| ROW | right-of-way |
| RTP | Regional Transportation Plan |
| RWQCB | Regional Water Quality Control Board |
| SAAQS | State Ambient Air Quality Standards |
| SABPL | San Antonio Backup Pipeline |
| SBA | SBA Communications Corporation |
| SB | Senate Bill |
| SCADA | supervisory control and data acquisition |
| SFBAAB | San Francisco Bay Area Air Basin |
| SFPUC | San Francisco Public Utilities Commission |
| SIP | State Implementation Plan |
| SJPL | San Joaquin Pipeline |
| SJVAB | San Joaquin Valley Air Basin |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| SJVCS | San Joaquin Valley Communication System |
| SR | State Route |
| StaRT | Stanislaus Regional Transit |
| SWPPP | Stormwater Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TAC | toxic air contaminant |
| TCAPCD | Tuolumne County Air Pollution Control District |
| TID | Turlock Irrigation District |
| tpy | tons per year |
| U | unclassified |

| | |
|---|---|
| USEPA | U.S. Environmental Protection Agency |
| UACFG | Upper Alameda Creek Filter Gallery |
| USACE | U.S. Army Corp of Engineers |
| USFS | U.S. (Department of Agriculture) Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| UST | underground storage tank |
| VoIP | voiceover internet protocol |
| WDR | Waste Discharge Requirement |
| WECC | Western Electricity Coordinating Council |
| WMP | Watershed Management Plan |
| $\mu g/m^3$ | micrograms per cubic meter |

# INITIAL STUDY

San Joaquin Valley Communication System Upgrade Project
Case Number 2012.0183E

## A. PROJECT DESCRIPTION

### A.1 Project Overview

The San Francisco Public Utilities Commission (SFPUC) proposes to implement the San Joaquin Valley Communication System (SJVCS) Upgrade Project (the "project"), which would provide an upgraded communication system for SFPUC facilities located primarily within the San Joaquin Valley. The project consists of the installation of microwave radio antennas on either new or existing radio towers at 20 project sites. The communication system would use digital microwave radios that have the necessary bandwidth to provide system controls, telecommunications, and security at control stations along the water distribution system.

The 20 SJVCS project sites are located between Moccasin Peak to the east and the Sunol Valley, approximately 90 miles to the west. The proposed sites are located within the following counties: Tuolumne, Stanislaus, San Joaquin, Contra Costa and Alameda. Project sites would be located on property owned by the SFPUC, within an easement granted to SFPUC, or at an existing communications site owned by another party. At the three project sites owned by others, the SFPUC would lease space to install radio communication equipment. The project site locations are shown on **Figure 1, Project Overview Map**, along with site vicinity maps (**Figures 1-1** through **1-9**), which are presented at the end of this section (Section A, *Project Description*).

### A.2 Project Background

The SFPUC owns and operates a regional water supply and electrical power supply system that extends from the Sierra Nevada mountain range to the San Francisco Bay Area. System facilities include dams and reservoirs, hydroelectric plants, water treatment plants, solar power operations, pipelines, electrical transmission lines, and related facilities. In the eastern portion of the project area, existing SFPUC facilities include the San Joaquin Pipeline (SJPL), composed of three 47.5-mile-long parallel pipelines that extend westward from the Foothill Tunnel at Oakdale Portal to the Tesla Treatment Facility. From the Tesla Treatment Facility, system water is conveyed 25 miles through the Coast Range Tunnel to existing facilities in the Sunol Valley in the western portion of the project area.

The SFPUC's communication system is an essential component in the operation and security of water supply and power facilities. In the project area, the existing communication system is primarily comprised of 900-MHz data radios to transmit data for supervisory control and data acquisition (SCADA) proposes. Fiber optic lines for communications are scheduled to be installed in portions of the project area during ongoing construction of the SJPL project.

In June 2007, the Federal Energy Regulatory Commission (FERC) granted the North American Electric Reliability Corporation (NERC), a non-governmental organization, the statutory responsibility to regulate and enforce reliability standards for the bulk power[1] system in the United States.[2] SFPUC power operations are part of the bulk power system and are subject to NERC standards and review. Compliance enforcement activities in California are carried out on behalf of NERC by the Western Electricity Coordinating Council (WECC). To enable SFPUC communication systems to be consistent with NERC and WECC reliability standards, improvements to the existing radio communications system in the San Joaquin Valley are necessary. The communication system upgrades proposed under this project would establish: a licensed 6-gigahertz (GHz) microwave radio system with sufficient bandwidth to support multiple functions, including communications; SCADA systems; voiceover internet protocol (VoIP); and safety, security, and power line protection.

## A.3 Project Purpose

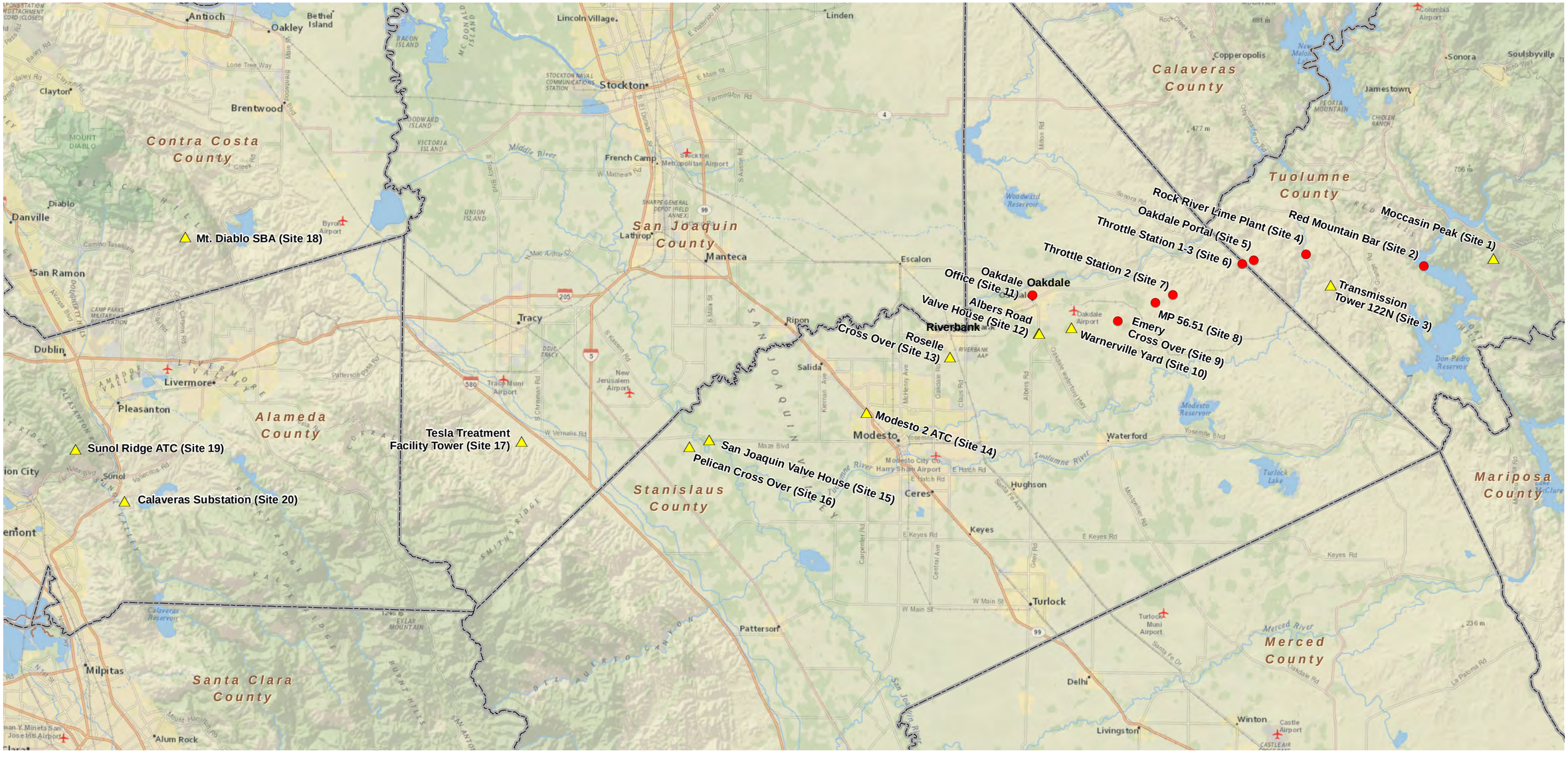
The project's purpose is to replace an outdated, slow, and inadequate communication system with a modern and reliable communication system for the safe, secure, and efficient operation of SFPUC water and power facilities in the San Joaquin Valley. Completing the project would achieve the following objectives:

- Establish a microwave communications system that is consistent with NERC and WECC reliability standards and that is licensed in accordance with Federal Communication Commission (FCC) requirements;
- Ensure rapid communication between the SFPUC control centers and valve houses, pump stations, and other facilities along the SFPUC pipeline and power transmission systems in the San Joaquin Valley; and,
- Provide necessary bandwidth to support multiple functions, such as SCADA, VoIP, security, and power line protection.

---

[1] The bulk power system is the part of the overall electricity system that includes the generation of electricity and the transmission of electricity over high-voltage transmission lines to distribution companies. This includes power generation facilities, transmission lines, interconnections between neighboring transmission systems, and associated equipment. It does not include the local distribution of the electricity to homes and businesses.

[2] North American Electric Reliability Corporation, 2012. http://www.nerc.com/page.php?cid=1 (accessed February 1, 2012).




**SJVCS Project Sites** County Boundaries

- Existing Tower
- New Tower

0 10
Miles

SOURCE: Goodman Networks, 2010; ESRI, 2012

San Joaquin Valley Communication System Project

**Figure 1**

Project Overview Map

This page intentionally left blank

## A.4 Project Components

The proposed communication system consists of a microwave radio network that would transmit communication signals from station to station in "hops" between the project sites shown on Figure 1. Project design and FCC licensing of the radio frequency bands will ensure that the proposed radio system would not interfere with existing communication systems in the project vicinity. The project would install new microwave antennas on existing radio towers and construct eight new towers. In addition to connecting to electrical power from various municipal providers, proposed power equipment at various sites would consist of photovoltaic (PV) solar panels and, in select cases, propane-fueled emergency generators. **Table 1** lists the key components at each project site, including power facilities and new towers, and provides a cross-reference to the applicable locational figures in this document. These individual components are described in more detail below and in **Table 2**. Site plans and photographs showing the general layout and approximate locations of proposed components are presented in **Figures 2-1** through **2-20**, at the end of this section (Section A, *Project Description*).

### *A.4.1 Communications Equipment*

New microwave radio antennas would be installed at each project site. These antennas would be parabolic dishes ranging in diameter from 2 to 6 feet. One to four antennas would be installed on each tower. The size and height of the new antennas at each project site is listed in Table 2.

A waveguide[3] would connect the antenna to a radio control cabinet. The radio control cabinet would be installed either outside near the base of the tower on a small (approximately 6-foot by 8-foot) concrete pad or inside existing buildings, depending on the site. The waveguide is usually supported by a waveguide bridge, which is a metal rack structure between the tower and the radio cabinet or nearby building. Alternatively, the waveguide would be placed in a shallow underground trench.

### *A.4.2 New Towers*

New towers are proposed at eight project sites. The towers would be steel, self-supporting structures ranging in height from 20 to 140 feet, and would be similar to existing towers (e.g., steel lattice towers or monopoles). The new towers would be installed on concrete pad foundations, with the exception of the small towers or poles to be attached to existing buildings at the Red Mountain Bar and Albers Road Valve

[3] A waveguide is a structure which guides waves, such as high frequency radio waves or microwaves. The waveguide is typically a hollow conductive metal pipe up to several inches in diameter.

**TABLE 1**
**PROJECT SITES AND KEY COMPONENTS**

| Site Number | Site Name/ County | Number of New Antennas | New Tower (height) | PV Solar | Backup Propane Generator | Shown on Initial Study Figure Number |
|---|---|---|---|---|---|---|
| | **Tuolumne County** | | | | | |
| 1 | Moccasin Peak | 3 | | | | 1, 1-1, 2-1, 3 |
| 2 | Red Mountain Bar | 1 | X (20 feet) | X | | 1, 1-1, 2-2, 3 |
| 3 | Transmission Tower 122N[a] | 2 | | X | X | 1, 1-1, 2-3, 3 |
| 4 | Rock River Lime Plant | 1 | X (140 feet) | | | 1, 1-1, 2-4, 3 |
| 5 | Oakdale Portal | 3 | X (120 feet) | | | 1, 1-2, 2-5, 3, 4-1 |
| | **Stanislaus County** | | | | | |
| 6 | Throttle Station 1-3 | 1 | X (40 feet) | X | | 1, 1-2, 2-6, 3, 4-2 |
| 7 | Throttle Station 2 | 2 | X (60 feet) | X | | 1, 1-2, 2-7, 3, 4-3 |
| 8 | MP 56.51 Tie-In | 1 | X (60 feet) | X | X | 1, 1-2, 2-8, 3 |
| 9 | Emery Cross Over | 3 | X (120 feet) | | | 1, 1-2, 2-9, 3 |
| 10 | Warnerville Yard | 3 | | | | 1, 1-2, 2-10, 3 |
| 11 | Oakdale Office | 1 | X (60 feet) | | | 1, 1-2, 1-3, 2-11, 3 |
| 12 | Albers Road Valve House | 3 | | | | 1, 1-2, 1-4, 2-12, 3 |
| 13 | Roselle Cross Over | 4 | | | | 1, 1-5, 2-13, 3 |
| 14 | Modesto 2 American Tower Corporation (ATC)[b] | 4 | | | | 1, 1-6, 2-14, 3 |
| 15 | San Joaquin Valve House | 4 | | | | 1, 1-7, 2-15, 3, 4-4 |
| 16 | Pelican Cross Over | 2 | | | | 1, 1-7, 2-16, 3 |
| | **San Joaquin County** | | | | | |
| 17 | Tesla Treatment Facility Tower | 4 | | | | 1, 1-7, 2-17, 3 |
| | **Contra Costa County** | | | | | |
| 18 | Mt. Diablo SBA[b] | 2 | | | | 1, 1-8, 2-18, 3 |
| | **Alameda County** | | | | | |
| 19 | Sunol Ridge ATC[b] | 2 | | | | 1, 1-9, 2-19, 3 |
| 20 | Calaveras Substation | 1 | | | | 1, 1-9, 2-20, 3 |

NOTES:

[a] This project site is located on an easement granted to the SFPUC by the landowner.

[b] This project site is located at an existing communication tower owned by a another party where the SFPUC would lease space for its proposed communication facilities.

**TABLE 2**
**PROJECT OVERVIEW TABLE**

| Site | Site Name | Location | County | New Tower (height) | New Dish (dish diameter and height on tower in feet) | Components | Proposed Power Equipment |
|---|---|---|---|---|---|---|---|
| 1 | Moccasin Peak | Approximately 1.5 miles west of the intersection of Hwy 49 with Marshes Flat Road, near the SFPUC Moccasin Power House | Tuolumne | No | 3 Dishes:<br>- 1 to 4 feet @ 90 feet<br>- 1 to feet @ 75 feet<br>- 1 to feet @ 60 feet | - Dish installation on two existing radio towers<br>- Radio cabinet installed in existing control building | None |
| 2 | Red Mountain Bar | Approximately 4.2 miles southeast of the intersection of County Road J59 and Old Don Pedro Road, on the west side of Don Pedro Reservoir | Tuolumne | Yes<br>(20 feet) | 1 Dish:<br>- 1 to 4 feet @ 18 feet | - Small tower attached to existing building; dish installation on tower<br>- Pinned base caisson concrete foundation above surface, 30 x 30 inches<br>- Install microwave radio cabinet<br>- Some ground field trenching<br>- Fill area around cabinet with concrete to match sidewalk | - Expansion to existing solar power system<br>- 1,980-watt system with nine PV panels<br>- New battery plant inside the equipment building |
| 3 | Transmission Tower 122 North | Approximately 3.7 miles southwest of the intersection of County Road J59 and Old Don Pedro Road | Tuolumne | No | 2 Dishes:<br>- 1 to 2 feet @ 57 feet<br>- 1 to 6 feet @ 50 feet | - Dish installation on existing power transmission tower<br>- Install outdoor microwave radio cabinet and solar battery cabinet on 10- x 6-foot concrete pad<br>- Waveguide bridge (~5 feet)<br>- Conduit (~30 feet)<br>- Fencing around site equipment and tower; gravel fill | - 2,640-watt solar system with 12 PV panels.<br>- New battery plant, 8.5-kW backup generator (on 4- x 8-ft concrete pad) and 500-gallon propane tank |
| 4 | Rock River Lime Plant | 9855 Rock River Road, Jamestown, approximately 2.3 miles south east from the intersection of Rock River Road and Green Springs Road | Tuolumne | Yes<br>(140 feet) | 1 Dish:<br>- 1 to 2 feet @ 135 feet | - New 140-foot tower<br>- Waveguide bridge (~8 feet)<br>- Dish installation<br>- Microwave radio in outdoor cabinet on concrete pad (3 x 6 feet)<br>- Ground field trenching<br>- Conduit (~47 feet) from existing electrical pull box to radio cabinet | None |
| 5 | Oakdale Portal | Approximately 3.3 miles east-southeast of the intersection of Wilms Road and Highway 120/108 | Tuolumne | Yes<br>(120 feet) | 3 Dishes:<br>- 1 to 4 feet @ 115 feet<br>- 1 to 2 ft @ 110 feet<br>- 1 to 6 feet @ 70 feet | - New 120-foot tower<br>- Waveguide bridge (~80 feet) to valve house #3 building<br>- Dish installation<br>- Microwave radio installed in existing valve house<br>- Ground field trenching | None |
| 6 | Throttle 1-3 | Approximately 2.5 miles southeast of the intersection of Wilms Road and Highway 120/108 | Stanislaus | Yes<br>(40 feet) | 1 Dish:<br>- 1 to 2 feet @ 30 feet | - New 40-foot tower<br>- Waveguide bridge (~8 feet)<br>- Dish installation<br>- Microwave radio in outdoor cabinet on concrete pad (3 x 6 feet)<br>- Ground field trenching<br>- Conduit to solar panels (~50 feet)<br>- Extension to fencing around site; gravel fill | -Additional 1,980-watt solar system; nine new PV panels<br>- New 24-volt charge controller and battery plant installed inside existing building. |
| 7 | Throttle 2 | Approximately 2.1 miles northeast of the eastern terminus of Fogarty Road, Oakdale | Stanislaus | Yes<br>(60 feet) | 2 Dishes:<br>- 1 to 4 feet @ 57 feet<br>- 1 to 2 feet @ 55 feet | - New 60-foot tower<br>- Waveguide bridge (~8 feet)<br>- Microwave radio in outdoor cabinet on concrete pad (3 x 6 feet)<br>- Ground field trenching<br>- Conduit to solar panels (~50 feet)<br>- Extension to fencing around site; gravel fill | - Additional 2,640-watt solar system; 12 new PV panels on east side of compound<br>- New 24-volt charge controller and battery plant installed inside existing building |
| 8 | MP 56.51 Tie-in | Approximately 0.9 mile northeast of the eastern terminus of Fogarty Road | Stanislaus | Yes<br>(60 feet) | 1 Dish:<br>- 1 to 2 feet @ 50 feet | - New 60 foot tower<br>- Waveguide bridge (~8 feet)<br>- Dish installation<br>- Microwave radio in outdoor cabinet on concrete pad (3 x 6 feet)<br>- Ground field trenching<br>- Conduit (~30 feet) to solar system and generator<br>- New fencing around site; gravel fill | - 3,080-watt solar power system with 14 PV panels on east side of compound<br>- New charge controller and battery plant installed in existing control building<br>- 8.5-kW backup generator and 500-gallon propane tank |

**TABLE 2 (Continued)**
**PROJECT OVERVIEW TABLE**

| Site | Site Name | Location | County | New Tower (height) | New Dish (dish diameter and height on tower in feet) | Components | Proposed Power Equipment |
|---|---|---|---|---|---|---|---|
| 9 | Emery Cross Over | Approximately 0.6 mile southeast of the intersection of Emery Road and Fogarty Road, Oakdale | Stanislaus | Yes (120 feet) | 3 Dishes:<br>- 1 to 4 feet @ 110 feet<br>- 1 to 2 feet @ 50 feet<br>- 1 to 2 feet @ 40 feet | - New 120-foot tower<br>- Waveguide bridge (10 feet)<br>- Dish installation<br>- Ground field trenching<br>- Microwave radio in outdoor cabinet on concrete pad (8 x 6 feet)<br>- Fencing around site equipment and tower; gravel fill | None |
| 10 | Warnerville Yard | 10501 Warnerville Road, Oakdale | Stanislaus | No | 3 Dishes:<br>- 1 to 6 feet @ 87 feet<br>- 1 foot @ 70 feet<br>- 1 foot @ 64 feet | - Dish installation on existing radio tower<br>- Install microwave radio in new outdoor cabinet and dish antennas<br>- Expand existing concrete pad to 8 x 14 feet<br>- Waveguide bridge extension (~7 feet) | None |
| 11 | Oakdale Office | 405 East C Street, Oakdale | Stanislaus | Yes (60 feet) | 1 Dish:<br>- 1 foot @ 55 feet | - Install new 60-foot tower<br>- Waveguide to existing office building<br>- Dish installation<br>- Ground field trenching<br>- Microwave radio in existing office building | None |
| 12 | Albers Road Valve House | Approximately 0.2 mile north of the intersection of Albers Road and Patterson Road | Stanislaus | No | 3 Dishes:<br>- 2 feet @ 55 feet<br>- 1 to 2 feet on control building | - Dish installation on an existing power transmission tower<br>- Replace existing15-foot pole attached to the valve house building with a 20-foot pole and dish installation<br>- Install microwave radio cabinet inside Albers building<br>- Ground field trenching | None |
| 13 | Roselle Cross Over | East side of Roselle Avenue, approximately 250 feet south of the intersection of Roselle Avenue and Glow Road, Riverbank | Stanislaus | No | 4 Dishes:<br>- 1 to 6 feet @ 92 feet<br>- 1 foot @ 85 feet<br>- 1 foot @ 77 feet<br>- 1 foot @ 65 feet | - Dish installation on existing power transmission tower<br>- Install microwave radio cabinet on concrete pad (6 foot x 8 foot)<br>- Waveguide bridge (~9 feet)h)<br>- Conduit to control building (~80 feet) | None |
| 14 | Modesto 2 ATC | Collegiate Lane and Brink Avenue, Modesto | Stanislaus | No | 4 Dishes:<br>- 1 to 4 feet and 6 feet each @ 105 feet and 130 feet | - Dish installation on existing radio tower<br>- Install microwave radio cabinet on concrete pad (3 x 6 feet)<br>- Waveguide bridge extension (4 feet long) | None |
| 15 | San Joaquin Valve House | Maze Boulevard, Modesto, approximately 2.1 miles east of the intersection of South Kason Road and Maze Boulevard | Stanislaus | No | 4 Dishes:<br>- 4 feet each @ 95–125 feet | - Dish installation on existing power transmission tower<br>- Install microwave radio cabinet on metal grate near base of tower or in yard<br>- Waveguide bridge<br>- New ladder east side of tower<br>- 97-ft conduit to control building | None |
| 16 | Pelican Cross Over | Approximately 0.3 mile west of the intersection of Pelican Road and Orchard Road, Vernalis | Stanislaus | No | 2 New Dishes:<br>- 1 foot @ 70 feet<br>- 1 foot @ 40 feet | - Dish installation on existing power transmission tower<br>- Microwave radio cabinet on concrete pad (6 x 6 feet)<br>- Waveguide bridge (~4 feet long)<br>- Conduit from cabinet to control building (~200 feet)<br>- Fencing (around radio cabinet); gravel fill | None |
| 17 | Tesla Treatment Facility Tower | Western terminus of West Vernalis Road | San Joaquin | No | 4 Dishes:<br>- 1 foot @ 86 feet<br>- 1 foot @ 77 feet<br>- 1 foot @ 68 feet<br>- 1 foot @ 59 feet | - Dish installation on existing radio tower<br>- Waveguide bridge<br>- Radio cabinet on concrete pad<br>- Conduit to control building (~20 feet) | None |
| 18 | Mt. Diablo SBA | West side of Morgan Territory Road, approximately 4.2 miles north-northeast of the intersection of Manning Road and Morgan Territory Road, Danville | Contra Costa | No | 2 Dishes:<br>- 1 to 6 feet @ 30 feet<br>- 1 to 6 feet @ 20 feet | - Dish installation on existing radio tower<br>- Waveguide bridge<br>- Install radio cabinet | None |
| 19 | Sunol Ridge ATC | 1.5 miles northeast of 37000 Palomares Road, Sunol | Alameda | No | 2 Dishes:<br>- 1 to 4 feet @ 135 feet<br>- 1 to 6 feet @ 30 feet | - Dish installation on existing radio tower<br>- Waveguide bridge<br>- Install radio cabinet | None |

**TABLE 2 (Continued)**
**PROJECT OVERVIEW TABLE**

| Site | Site Name | Location | County | New Tower (height) | New Dish (dish diameter and height on tower in feet) | Components | Proposed Power Equipment |
|---|---|---|---|---|---|---|---|
| 20 | Calaveras Substation | Calaveras Road, 0.9 mile south of the intersection of Calaveras Road and Highway 680, Sunol | Alameda | No | 1 Dish:<br>- 1 to 4 feet @ 20 feet | - Dish installation on existing power transmission tower<br>- Install Waveguide bridge to existing control building or radio cabinet<br>- Install radio cabinet<br>- Conduit to control building (~150 feet) | None |

NOTES: SR = State Route; ft = feet

SOURCES: Goodman Networks, *Environmental Clearance Reports*, May 2010, for the following 15 sites: Tesla, Pelican, San Joaquin, Modesto 2 ATC, Roselle, Albers, Warnerville Substation, Emery, MP 56.51 Tie-in, Throttle 1, Oakdale Portal, Throttle 2, Rock River Lime Plant, Transmission Tower, and Red Mountain Bar.
Goodman Networks, *Hetch Hetchy System Layout Plan A-3, Rev. 3*, DWG No.: GNET-HHWP-SYS-02, June 24, 2010.

This page intentionally left blank

House sites. Tower foundations are anticipated to be no more than 18 feet by 18 feet in area. A grounding ring would be installed in a shallow trench surrounding the base of each new radio tower to dissipate energy to the ground from potential lightning strikes. The locations and heights of the proposed new towers are shown in Tables 1 and 2.

### *A.4.3 Solar Power Systems*

New solar power systems consisting of PV panels are proposed for five project sites (see Sites 2, 3, 6, 7 and 8 on Table 2). These PV systems range in size from 9 PV panels generating 1,980 watts of energy to 14 PV panels providing 3,080 watts of energy. The panels would be connected to a charge controller and battery plant, sized to provide 24-hour reserve capacity. Individual solar panels are anticipated to be 2 feet by 4 feet in size and black, charcoal, or dark blue in color. The panels would be ground-mounted and may include a single-axis tracking system to ensure optimum angles for solar energy collection. The panels would be supported by steel structures with an overall height of 4 to 10 feet depending on the required panel tilt angle. The support structures would be installed on concrete foundations.

### *A.4.4 Backup Propane Generators*

Emergency backup generators are proposed at two project sites (see Sites 3 and 8 on Table 2). The generators would be 8.5 kilowatts (kW) and fueled by a 500-gallon liquefied propane gas (LPG) tank. Typical backup generator dimensions are approximately 44 inches long, 29 inches wide, and 32 inches high. The generators are estimated to have noise levels of 65 A-weighted decibels (dBA)[4] at a distance of 23 feet.[5] The generators and propane tanks would be situated on concrete pads near the proposed towers.

### *A.4.5 Ancillary Components*

Additional components include electrical conduits connecting new or existing power supplies to the microwave radio cabinets. The conduits would vary in length and would be buried in shallow trenches. New fencing or extensions to existing fencing surrounding the new equipment is also proposed at some project sites (see Table 2). At these sites, gravel fill, where needed, would be placed within the fencing.

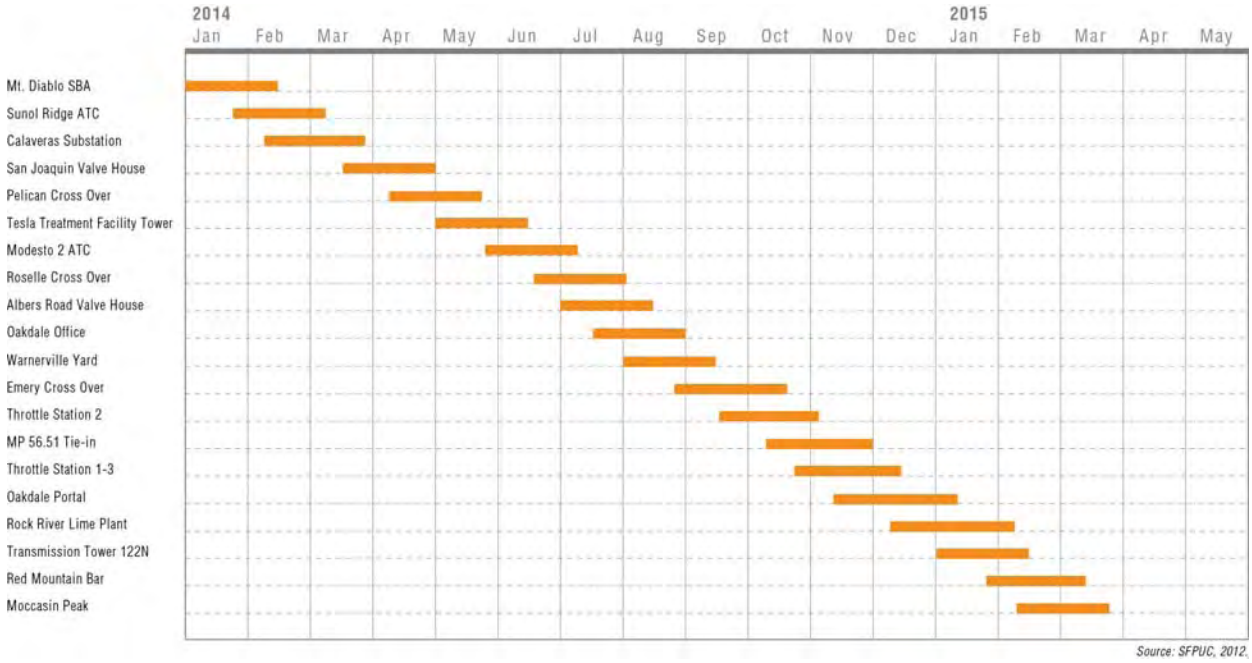
---

[4] The dBA scale of noise measurement approximates the range of sensitivity of the human ear to sounds of different frequencies. On this A-weighting scale, the normal range of human hearing extends from about 0 to 140 dBA.

[5] Kohler Power Systems, 2009. Model: 8.5/12RES, Multi-Fuel LP Vapor/Natural Gas Specifications.

## A.5 Construction Activities and Schedule

Project construction activities are estimated to begin in early 2014 and take approximately 12 to 15 months to complete. The construction schedule assumes that construction would occur at several sites concurrently, as shown in the schedule, below. The duration of construction at each project site would vary with the type of improvements proposed, but generally would require about one month at existing tower sites and one to two months for new tower sites, as discussed below.




San Joaquin Valley Communication System Upgrade Project Construction Schedule

### *A.5.1 Antenna(s) and Communications Equipment Only*

For the 12 sites at existing towers where one or more antenna and communication equipment installation is required (see Table 2), the total construction duration at each site would range from 30 to 35 days. Installation of microwave antennas and radio equipment generally would involve two phases of construction activities: site preparation/outdoor construction activities and antenna/radio system activities.

#### Site Preparation/Outdoor Construction Activities

Site preparation would involve minor leveling and grading of an approximately 6- by 8-foot area to install a concrete pad for radio cabinets, where needed. Shallow trenches for electrical conduits would be excavated approximately 2 feet deep by backhoe or trencher. Outdoor construction activities following site preparation would include the preparation of concrete equipment pads for outdoor radio cabinets

where applicable, installation of conduits for signal cable and power inside the shallow trenches, and backfilling of the trenches. After completion of work, the area around the tower would be cleaned up and leveled, and where applicable, proposed fencing would be installed.

#### Radio and Antenna System Installation

The installation of antennas, radio systems, electrical connections, and system testing would take 10 to 15 days. Limited construction equipment, such as tool and construction trucks, would be needed for this phase of construction activities.

### *A.5.2 Radio Towers*

New self-supporting radio towers would be installed at seven project sites (Sites 4-9 and 11 in Table 1), and a small tower would be attached to the existing building at Red Mountain Bar (Site 2 in Table 1). The total construction duration at these sites would be approximately 45 days, including the installation of antennas and communication equipment, as described above. Anticipated tower installation activities are described below.

#### Tower Foundations and Ground Field Trenching

Excavation of the tower foundations would be accomplished by backhoe. For smaller towers less than 100 feet high (Sites 6, 7, 8, and 11 in Table 1), an estimated 11-foot by 11-foot excavation area is anticipated; for taller towers (Sites 4, 5, and 9 in Table 1), an 18-foot by 18-foot excavation area is anticipated. The depth of the excavations would vary from approximately 4 to 8 feet below ground surface depending on tower height and site conditions. Depending on foundation size, between 18 to 96 cubic yards of soil would be excavated and hauled offsite. After excavation, rebar would be placed in the hole according to design criteria and anchor bolts would be set in position to match the tower leg steel footprint. Concrete would be placed in the excavation and allowed to cure (harden) for a week or longer. Ground field trenches 2 feet deep around the base of the tower, and any additional shallow trenches needed for electrical conduits, would be excavated by backhoe or trencher.

Tower Erection

The steel tower or monopole would be delivered to the site on a flatbed truck and would be off-loaded with a Skytrack-type forklift[6]. Each steel tower section is 20 feet long and no more than 5 feet wide. A 20- by 40-foot laydown area within the project site would be needed to lay out the steel tower sections prior to construction; staging the sections would take less than one week. The tower assembly would be accomplished with a forklift, which would be used to carry the steel sections into position. Finally, a crane or boom truck[7] would be used to stack the sections one upon another until the tower is completed. Tower erection typically takes about four days.

### *A.5.3 Solar Energy Systems*

At five sites (see Sites 2, 3, 6, 7 and 8 on Table 2), additional construction work would be performed to install PV panels. The site preparation for installation of a typical solar panel array could involve minor grading and leveling. A small concrete foundation would support the PV panel array posts. New conduit would be buried from the array to the radio cabinets for power wiring. Installation of the solar energy system is estimated to take approximately 12 days at each site.

### *A.5.4 Backup Generators*

Two sites (see Sites 3 and 8 on Table 2) would require the installation of propane-powered emergency generators with propane tanks on concrete pads. Approximately 12 days at each site would be needed for concrete pad construction, tank and generator installation, and system testing.

### *A.5.5 Construction Staging Areas*

The staging area locations at each project site would be determined by the contractor prior to construction. Staging areas are anticipated to be limited to previously disturbed or non-vegetated areas of the properties. Staging areas could be used by contractors for storage of construction-related equipment and materials, such as construction vehicles, steel tower sections, and small quantities of fuels and lubricants. Staging areas could also be used for the stockpiling of excavated soil for reuse. Once a staging area is no longer needed, it would be restored to its previous condition.

---

6 A Skytrack-type forklift is a forklift with a telescoping arm to provide an extended reach.

7 A boom truck is a vehicle with an extendable boom mounted to the bed or roof. In a bucket boom, sometimes called a cherry picker, a bucket-like apparatus at the end of the extendable boom to lift workers to the top of an electrical pole.

### A.5.6 Construction Equipment

Project construction would involve grading, excavations, erection of towers, and installation of radio equipment at the project sites. Construction equipment would include: flat-bed delivery truck, pickup truck, backhoe, trencher, concrete truck and vibrator, forklift, boom truck, and either a 60-ton or 120-ton crane. Some types of equipment would only be needed for certain phases of the construction activities. If needed, portable lighting would be used; lights would be pointed down at the construction site (away from nearby properties).

### A.5.7 Construction Access

Public roadways or unpaved service roads would provide the primary access routes to the project sites. Project construction workers would park in a number of permanent and temporary onsite parking areas at the project sites.

### A.5.8 Construction Workforce and Construction Hours

An average crew of three to five workers would be required during construction at each project site. Because construction would occur concurrently at several project sites, it is likely that several construction crews would be working at various sites simultaneously. Construction activities are expected to occur primarily from Monday through Friday, 7:00 a.m. to 6:30 p.m. However, construction could occasionally extend into the evening hours or on weekends.

### A.5.9 Standard Construction Measures

The SFPUC has established Standard Construction Measures to be included in all construction contracts.[8] The main objective of these measures is to avoid and reduce impacts on existing resources to the extent feasible. Among other measures, the SFPUC would require that the contractor provide notification at least 14 days in advance to businesses, property owners, facility managers, and residents of adjacent areas potentially affected by project construction about the nature, extent, and duration of construction activities. In addition, the contractor would prepare a Traffic Control Plan to minimize traffic impacts on streets affected by construction of the project.

[8] SFPUC, 2007. *Standard Measures to be Included in Construction Contracts and Project Implementation*. February 7, 2007.

The Standard Construction Measures stipulate that all construction contractors must implement construction stormwater best management practices (BMPs). At a minimum, construction contractors should undertake the following measures, as applicable, to minimize adverse effects of construction activities on water quality: erosion and sedimentation controls tailored to the site and project; placement of straw rolls around each of the nearby stormwater inlets; preservation of existing vegetation; installation of silt fences, use of wind erosion control (e.g. - geotextile or plastic covers on stockpiled soil); and stabilization of site ingress/egress locations to minimize erosion. Further, if groundwater is encountered during any excavation activities, the contractor shall ensure that water is discharged to the stormwater system in compliance with the local standards and requirements.

## A.6 Operation and Maintenance

Operation of the proposed communication systems would involve minimal maintenance of the new project facilities. Every three months, the sites would be cleaned and inspected, and the backup generators, where present, would be tested. Maintenance activities could also include washing of the PV panels, trimming of weeds and overgrowth interfering with the PV panels, and repair or replacement of facility components, as necessary. No additional staffing would be needed to operate and maintain the proposed facilities.

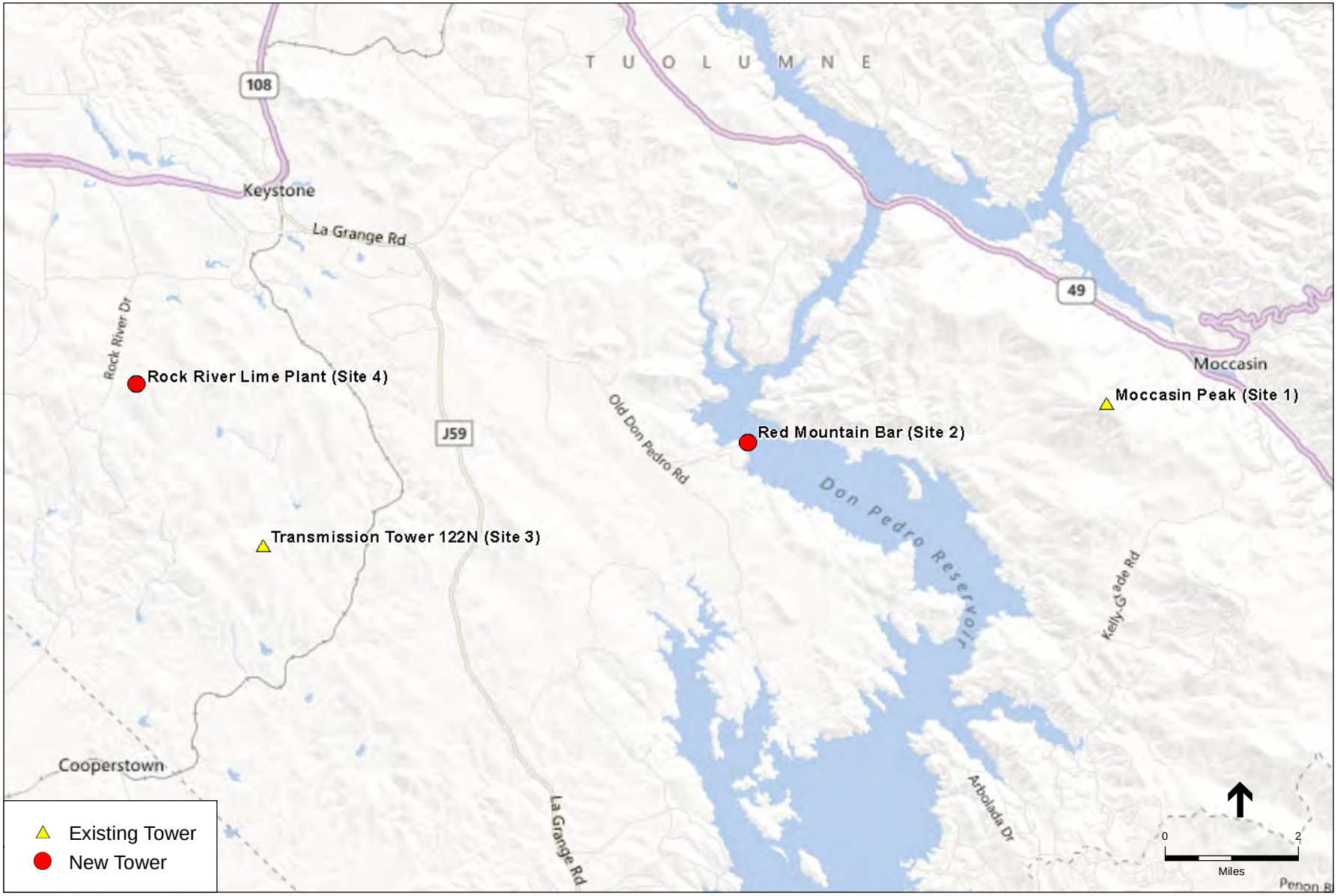
## A.7 Required Actions and Approvals

This Initial Study (IS)/Mitigated Negative Declaration (MND) is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering the approvals necessary for the planning, development, construction, operations, and maintenance of the project.

Permits and authorizations from state and local agencies could rely in whole or in part on this IS/MND. The anticipated potential agency actions and permits at the federal, state, and local level could include:

- Federal Communications Commission (FCC): Licensing of radio system frequency
- Federal Aviation Administration (FAA): Determination of No Hazard to Air Navigation
- Regional Water Quality Control Board (RWQCB): National Pollutant Discharge Elimination System (NPDES) Order 2009-0009-DWQ, "General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities" (Construction General Permit)
- San Joaquin Valley Air Pollution Control District (SJVAPCD): Authority to Construct and Permit to Operate for emergency generator at MP 56.51 Tie-In (Site 8)

- Tuolumne County Air Pollution Control District (TCAPCD): Authority to Construct and Permit to Operate for emergency generator at Transmission Tower 122N (Site 3)
- ~~Tuolumne County Community Resources Agency (TCCRA): Use Permit for antennas at Transmission Tower 122N (Site 3)~~
- Tuolumne County Airport Land Use Commission: Review of proposed towers at Rock River Lime Plant (Site 4) and Oakdale Portal (Site 5) for consistency with the Tuolumne County Airport Compatibility Plan
- City of Modesto: Development Plan Review for antennas at Modesto 2 ATC (Site 14)
- City of Riverbank: Administrative approval for antennas at Roselle Cross Over (Site 13)

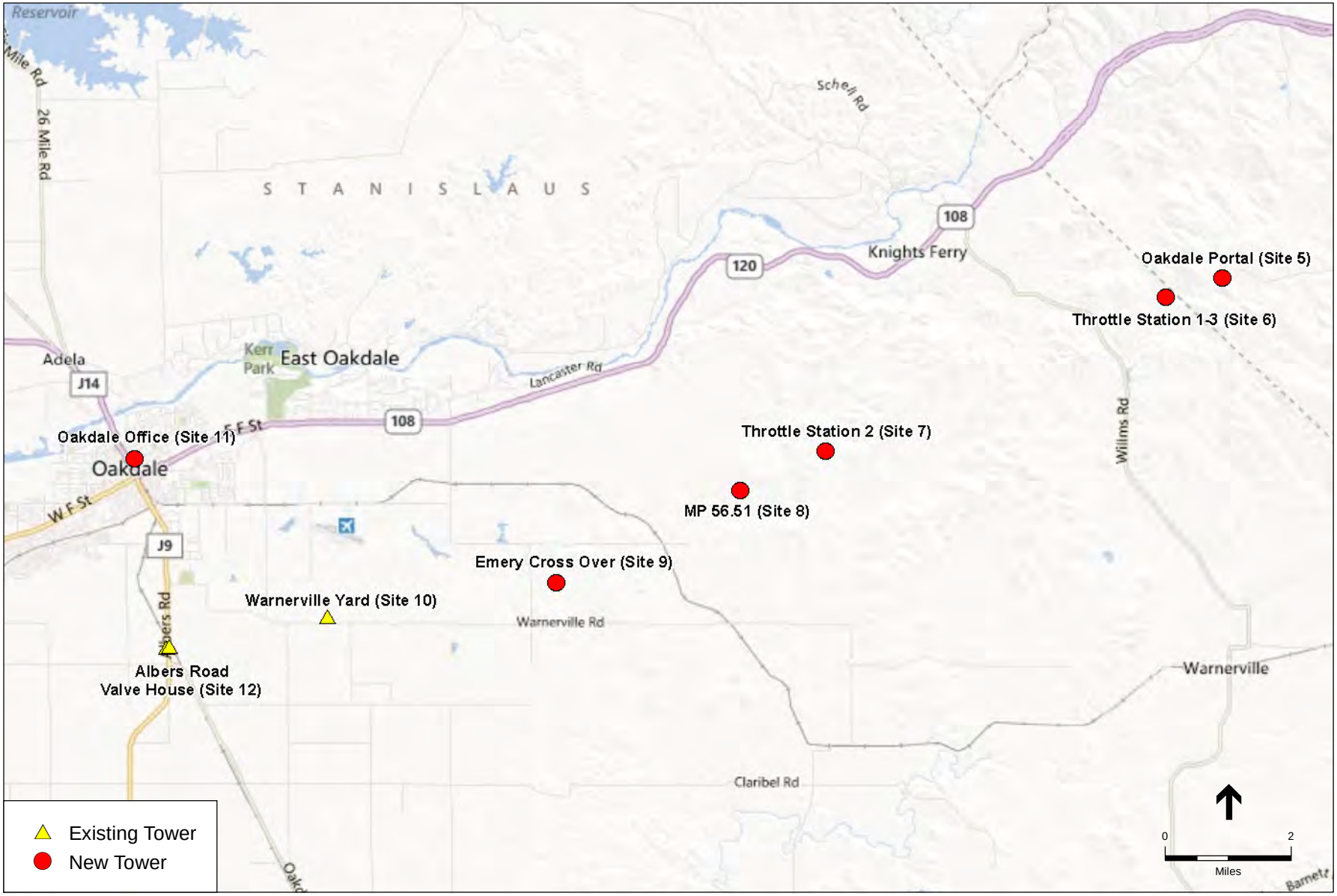



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-1**

Sierra Foothills (Sites 1-4) Vicinity

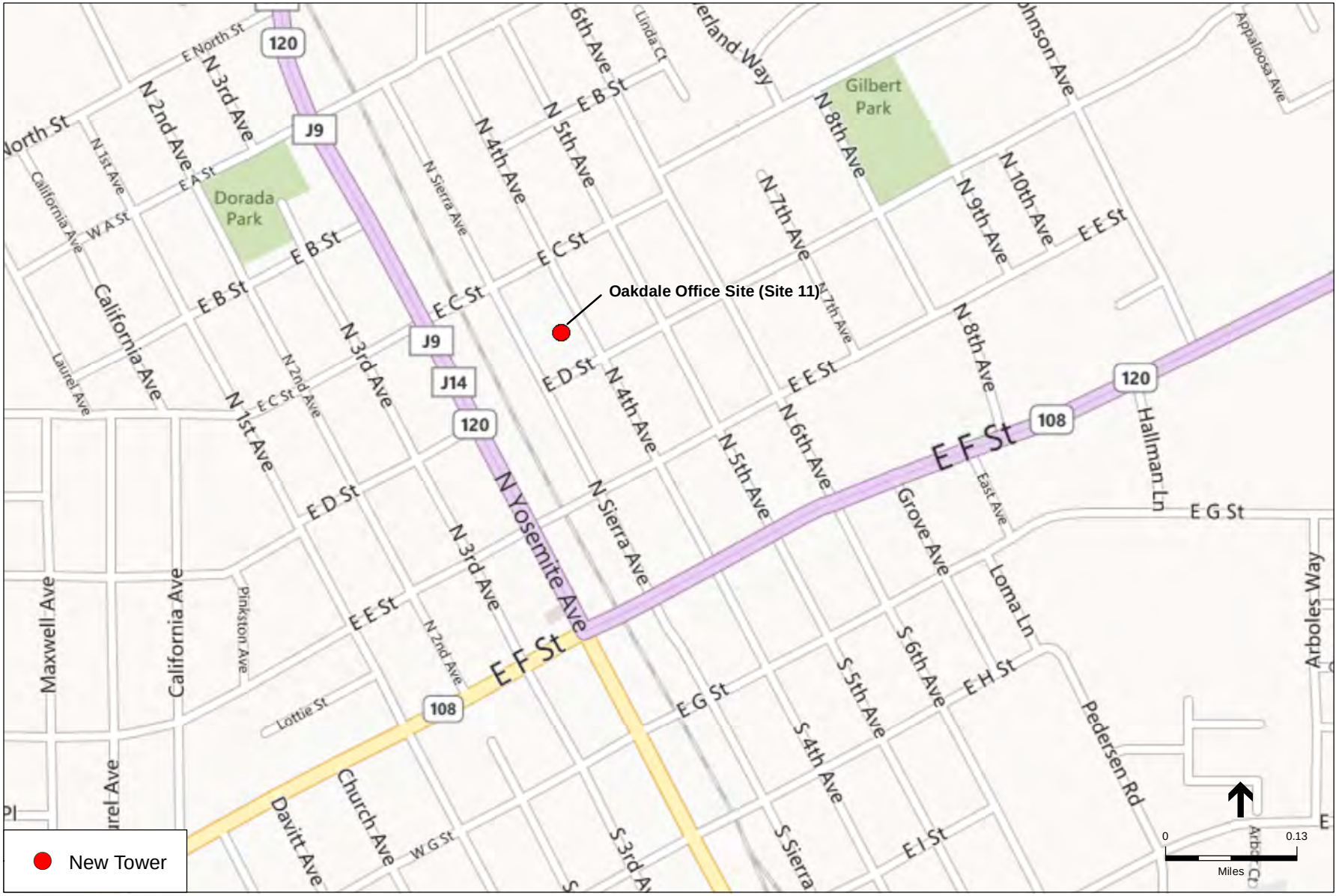



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-2**

East San Joaquin Valley (Sites 5-12) Vicinity




SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-3**

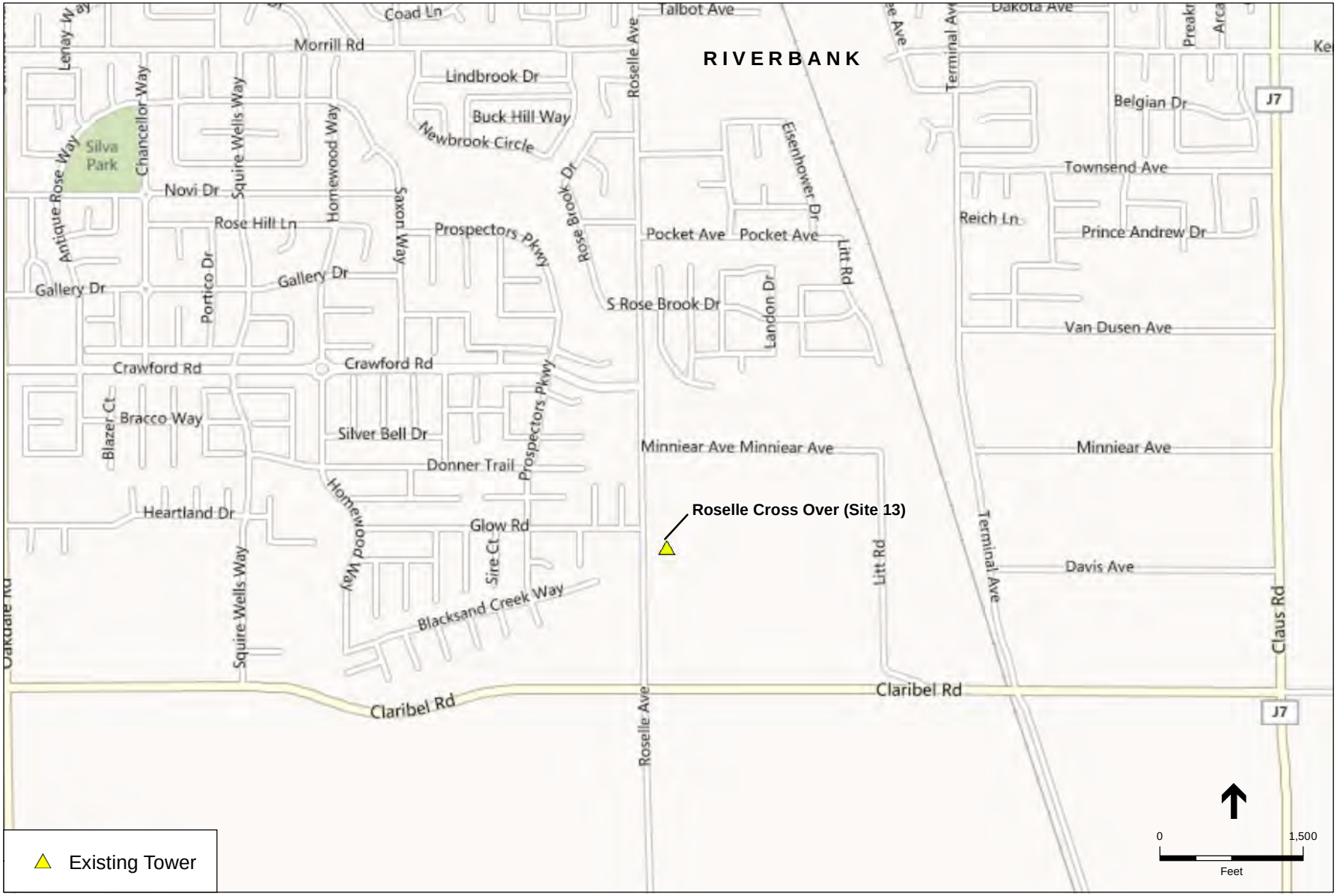
Oakdale Office (Site 11) Vicinity


SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-4**

Albers Road Valve House (Site 12) Vicinity

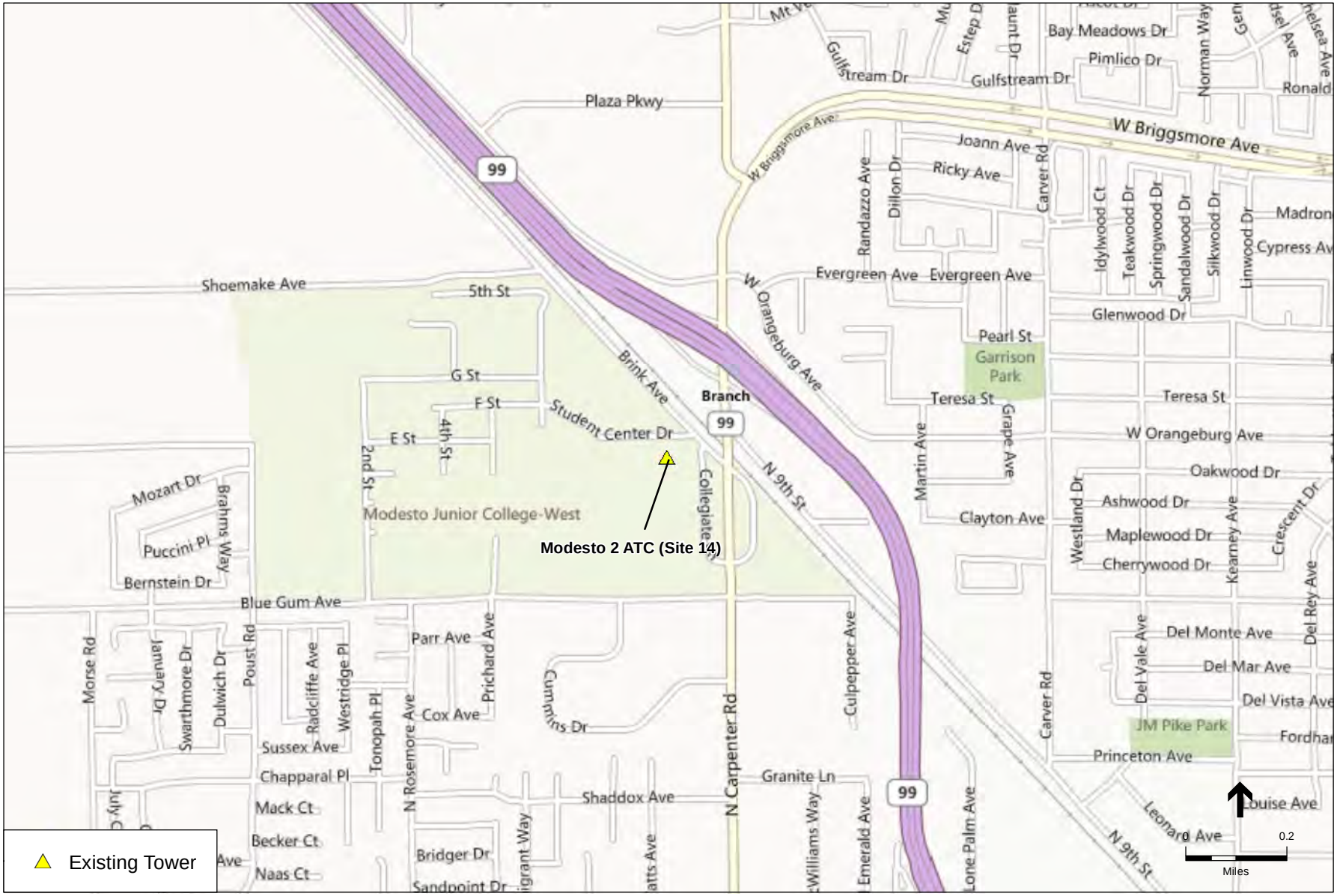



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-5**

Roselle Cross Over (Site 13) Vicinity

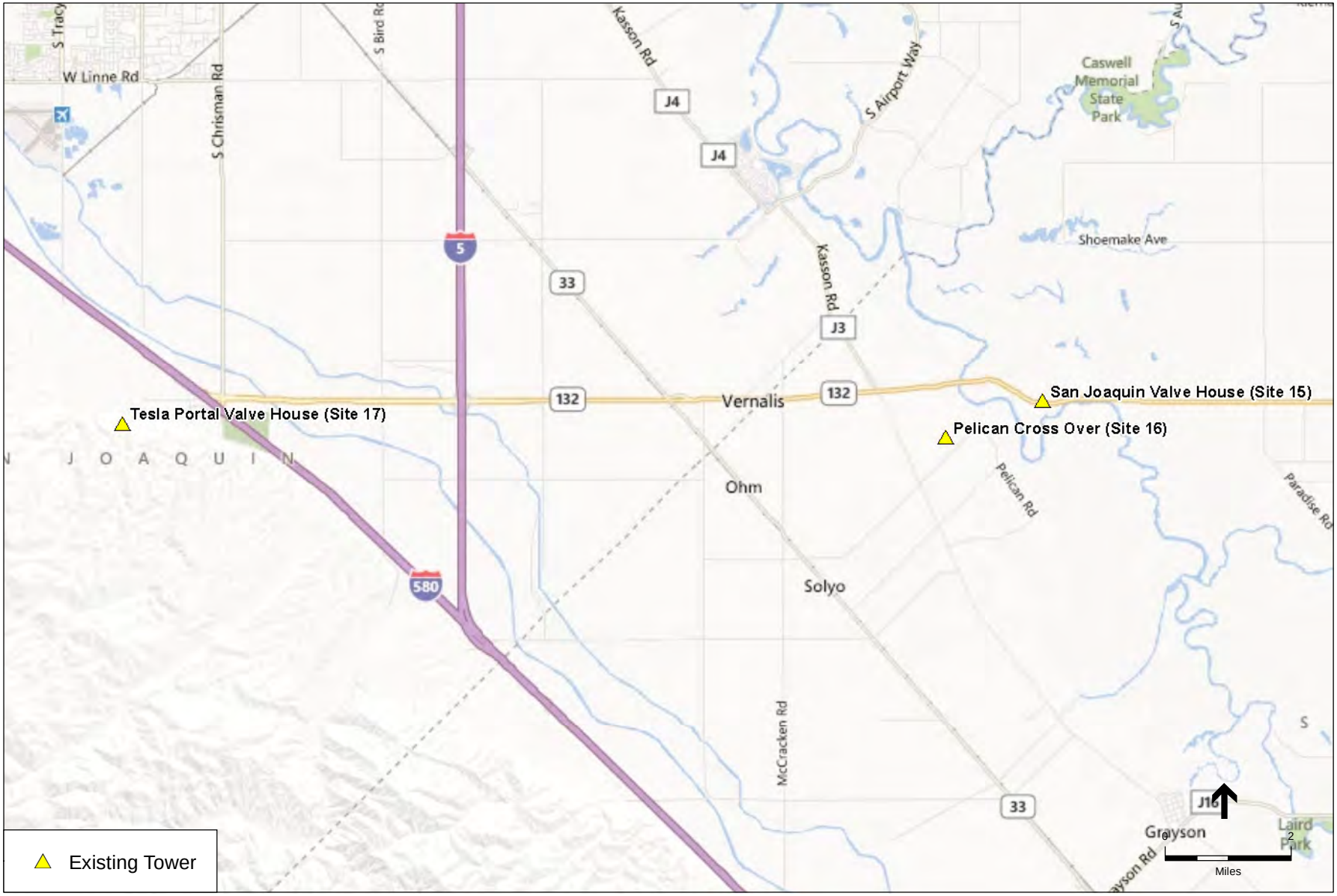



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-6**

Modesto 2 ATC (Site 14) Vicinity

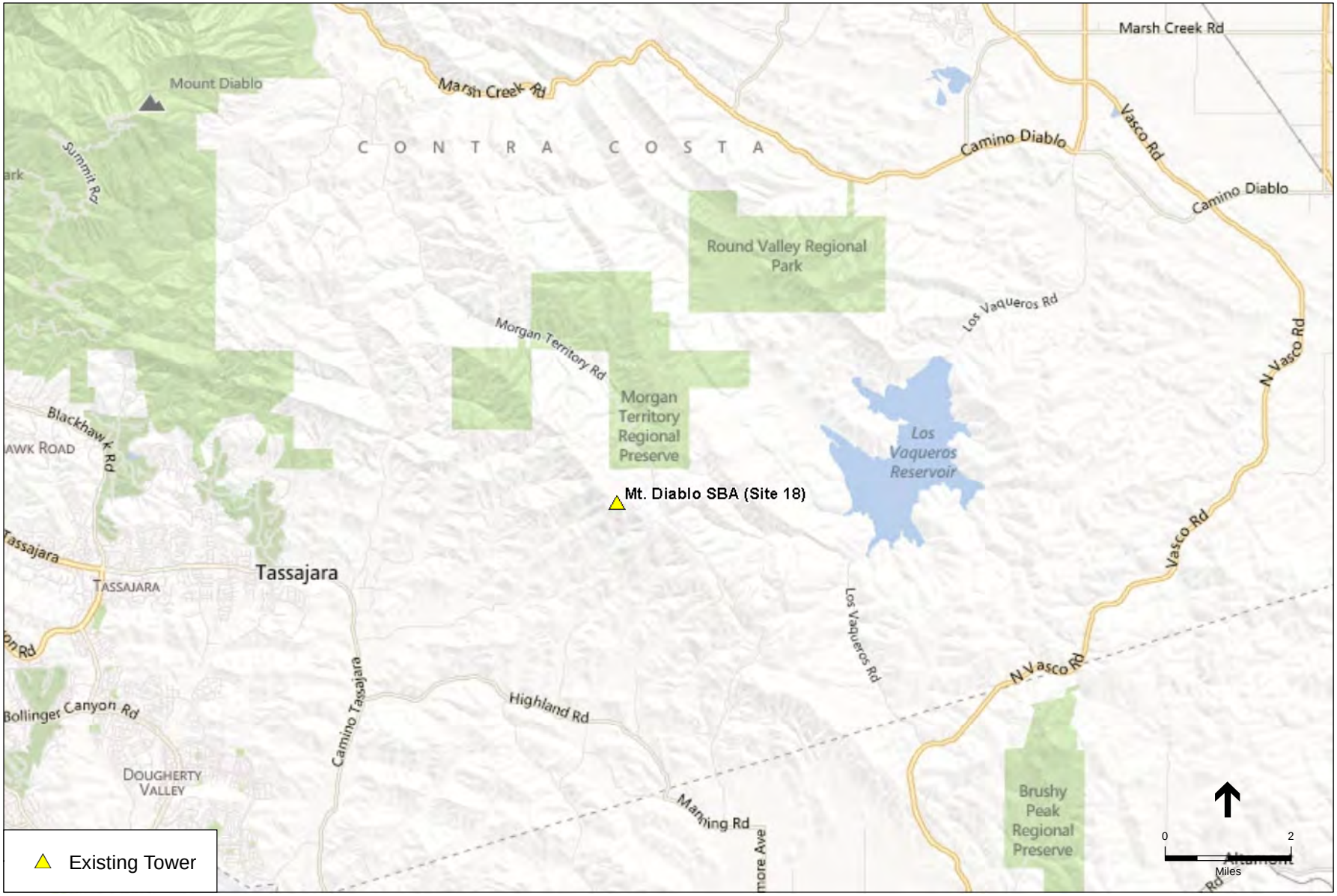



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-7**

West San Joaquin Valley (Sites 15-17) Vicinity

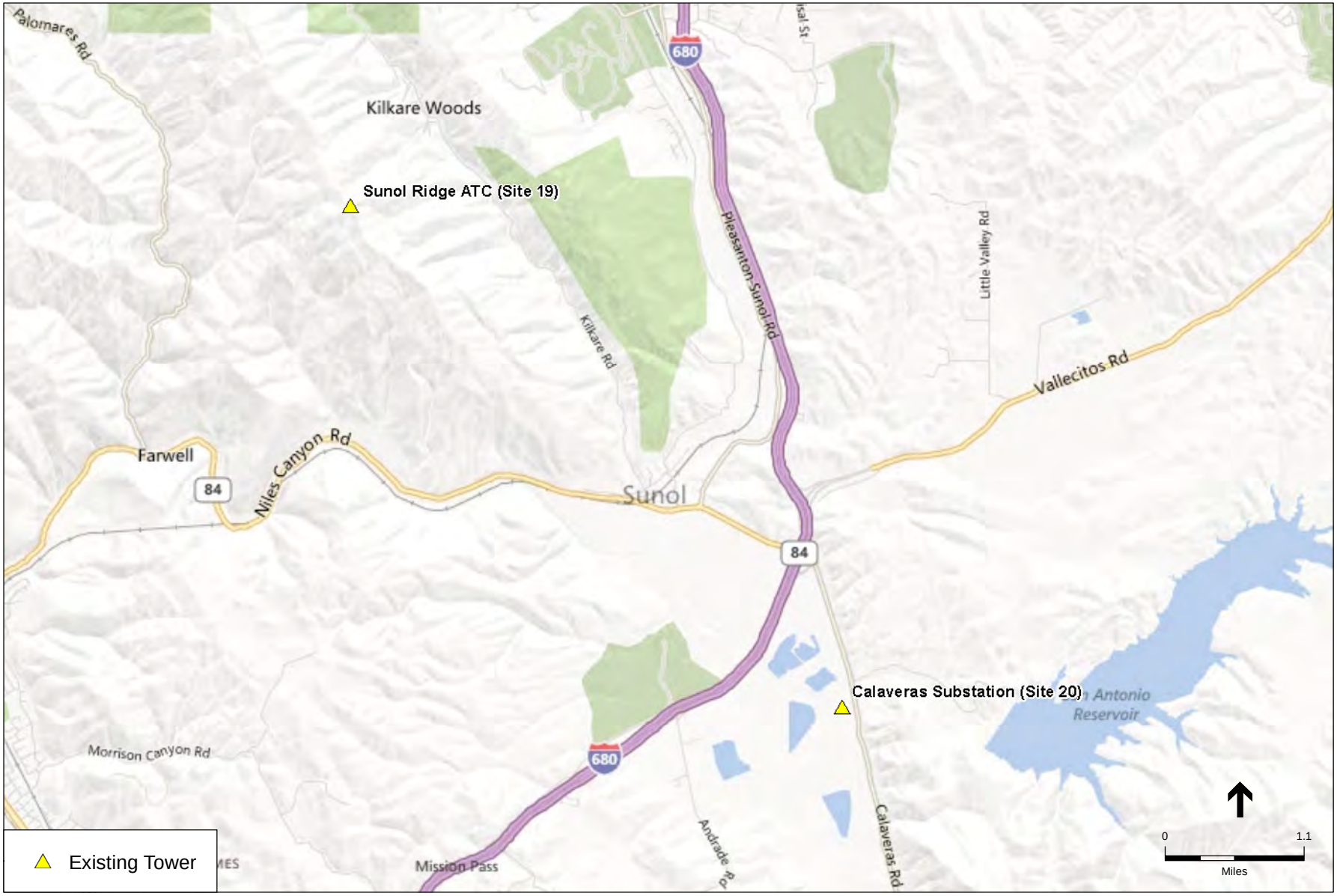



SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-8**

Mount Diablo SBA (Site 18) Vicinity




SOURCE: ESRI, 2012

San Joaquin Valley Communication System Upgrade Project

**Figure 1-9**

Sunol Valley (Sites 19-20) Vicinity


SOURCE: ESRI, 2011

San Joaquin Valley Communication System Upgrade Project

**Figure 2-1**

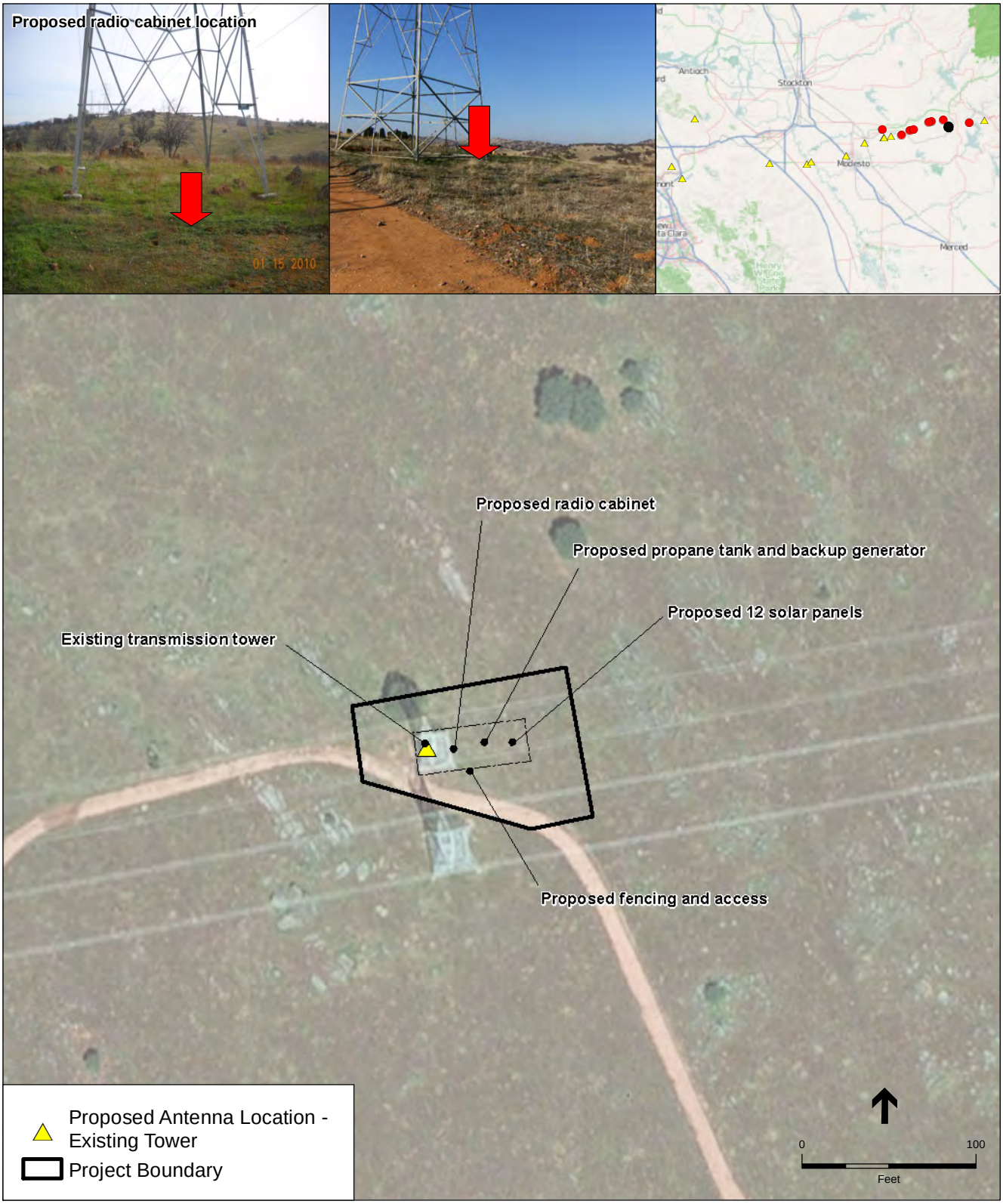
Moccasin Peak (Site 1)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-2**

Red Mountain Bar (Site 2)

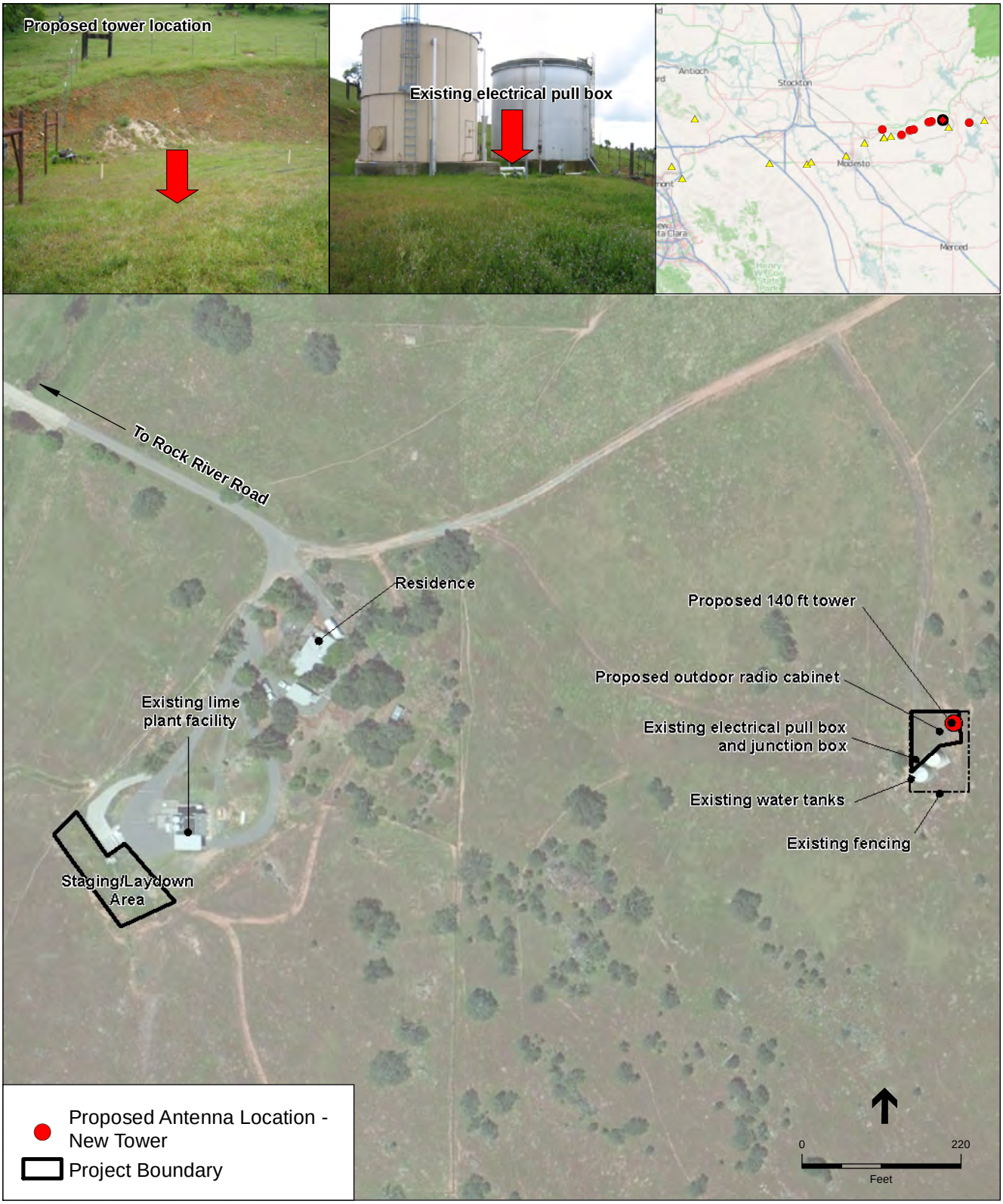



SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-3**

Transmission Tower 122N (Site 3)

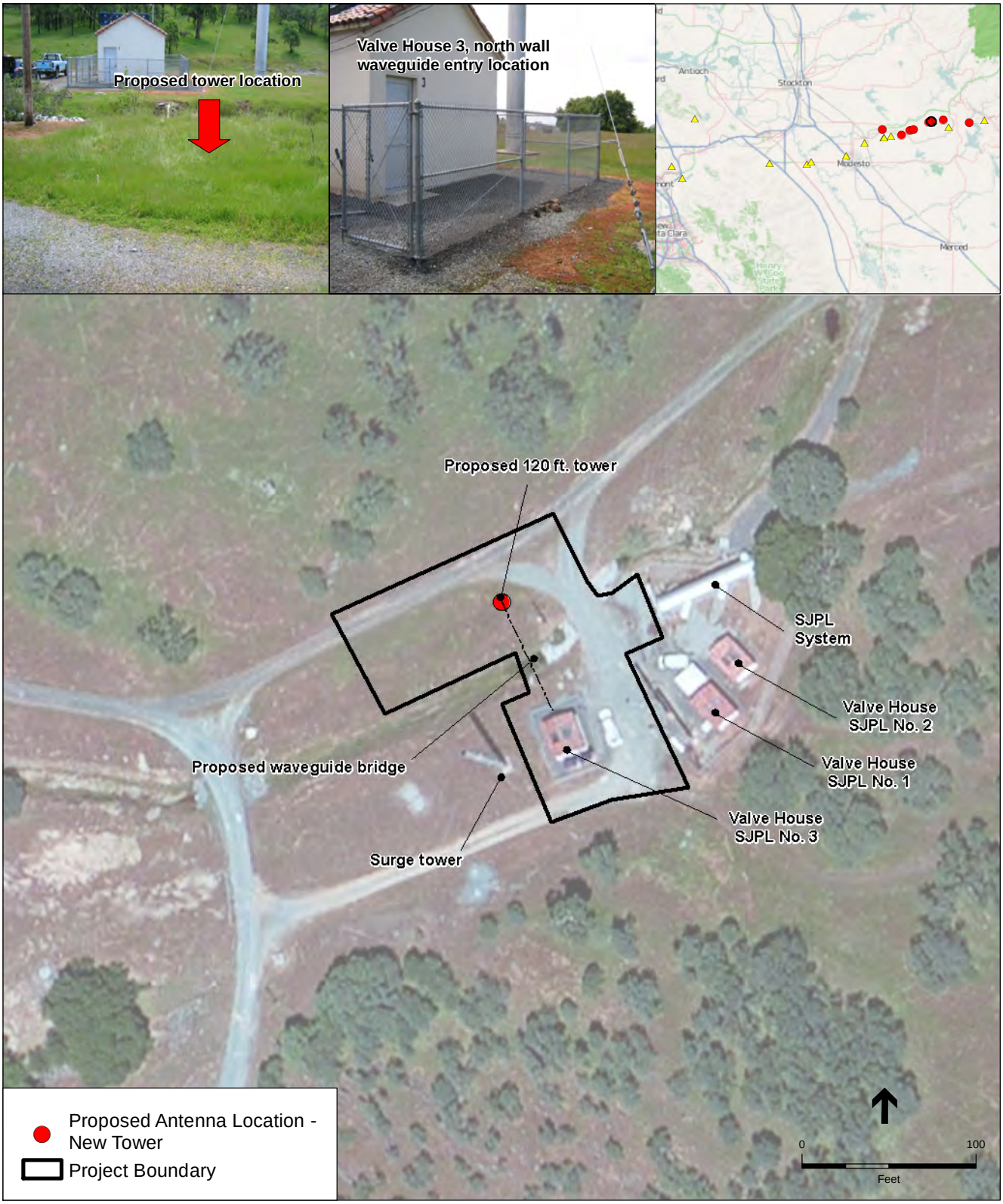



SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-4**

Rock River Lime Plant (Site 4)




SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-5**

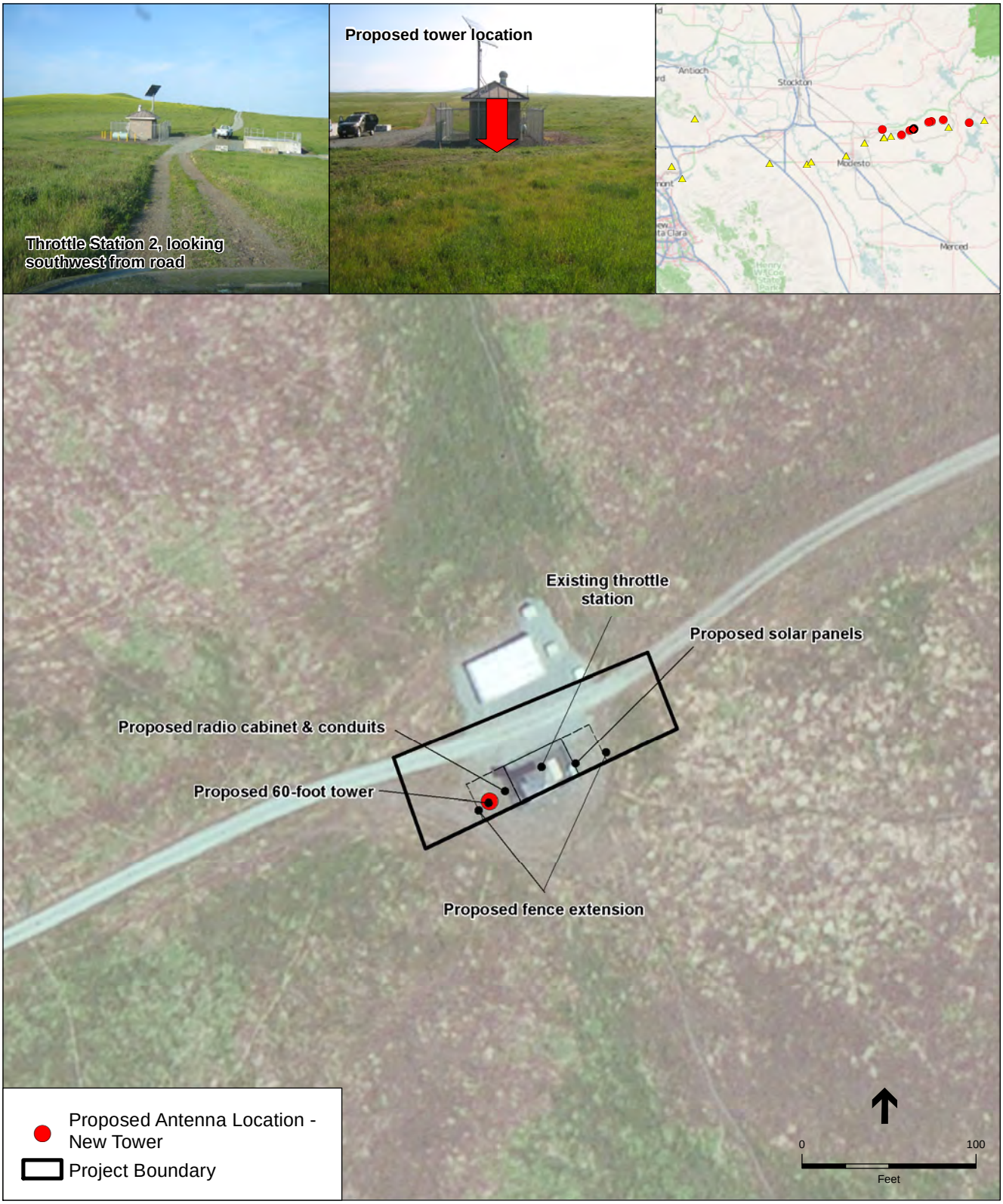
Oakdale Portal (Site 5)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-6**

Throttle Station 1-3 (Site 6)

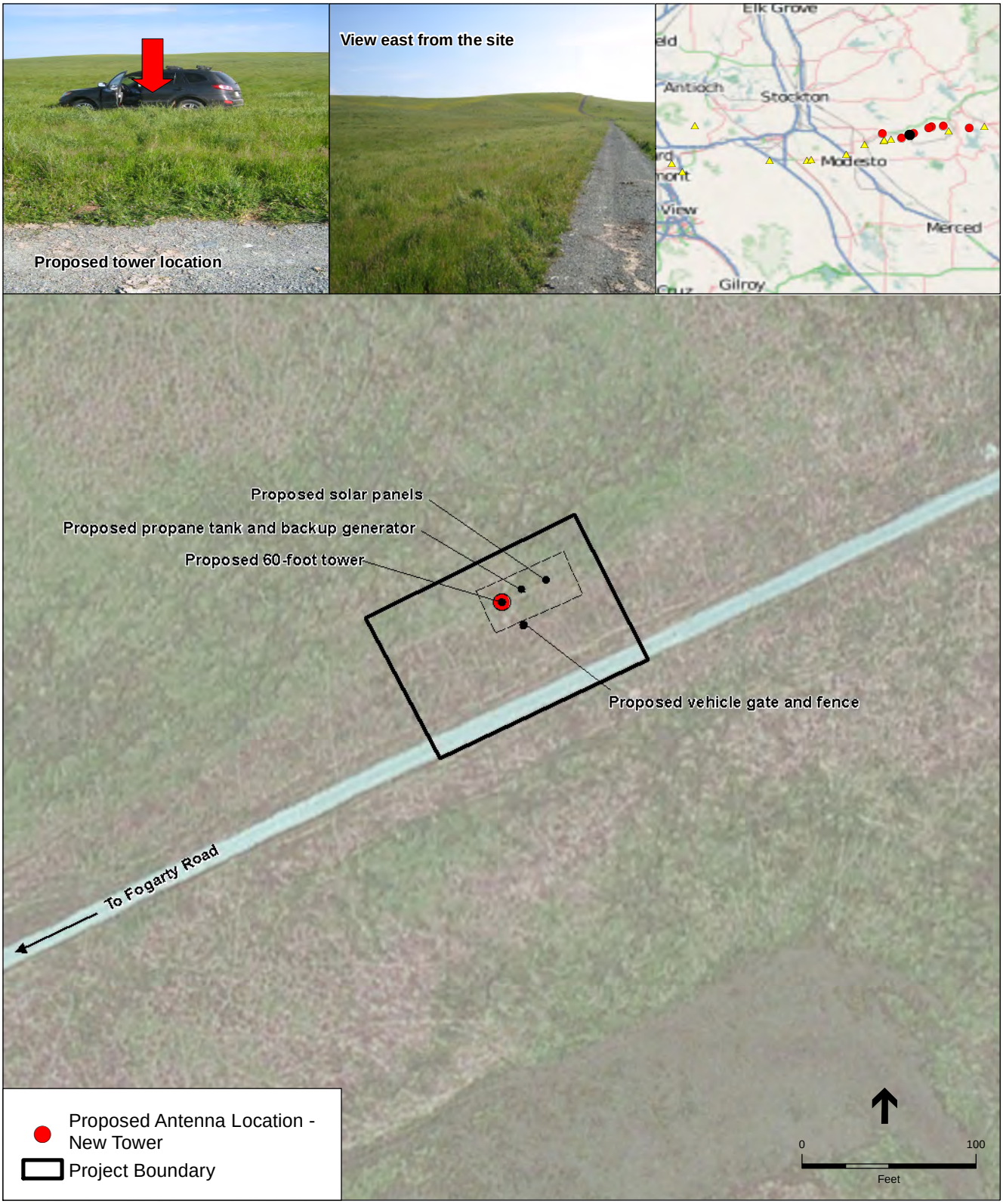



SOURCE: ESRI, 2011; Goodman Networks

San Joaquin Valley Communication System Upgrade Project

**Figure 2-7**

Throttle Station 2 (Site 7)




SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-8**

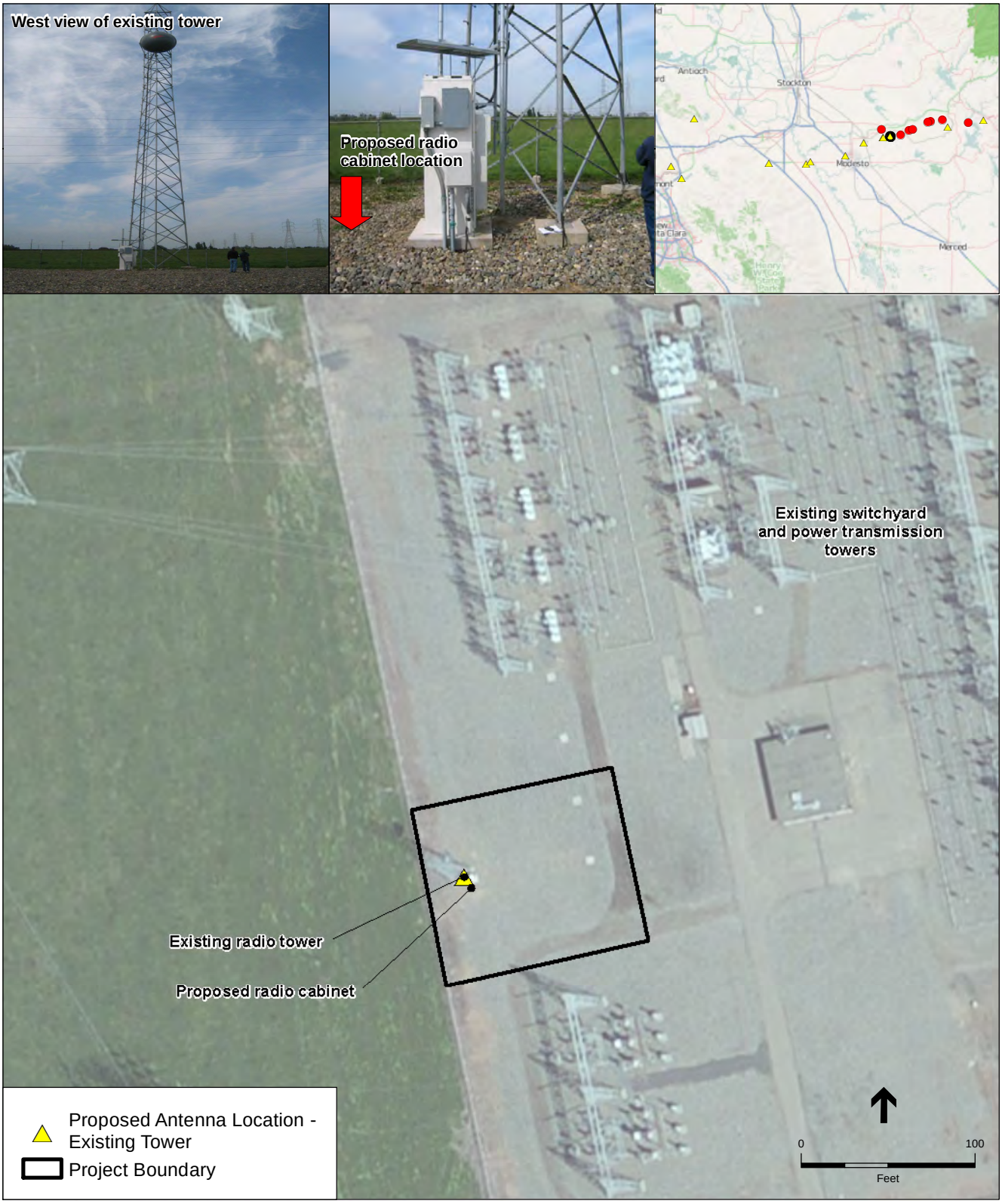
MP 56.51 Tie-in (Site 8)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-9**

Emery Cross Over (Site 9)




SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-10**

Warnerville Yard (Site 10)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-11**

Oakdale Office (Site 11)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-12**

Albers Road Valve House (Site 12)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-13**

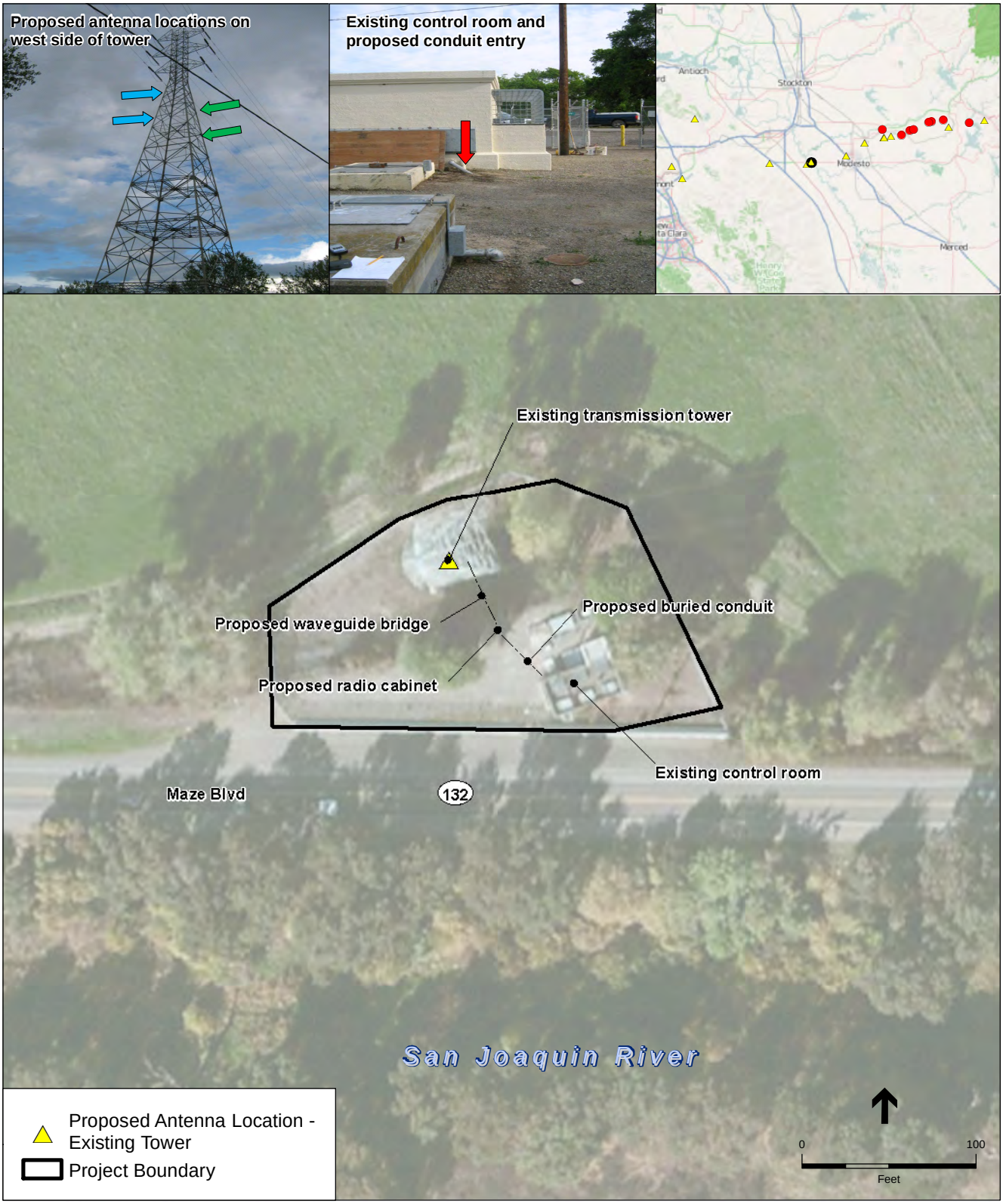
Roselle Cross Over (Site 13)


SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-14**

Modesto 2 ATC (Site 14)

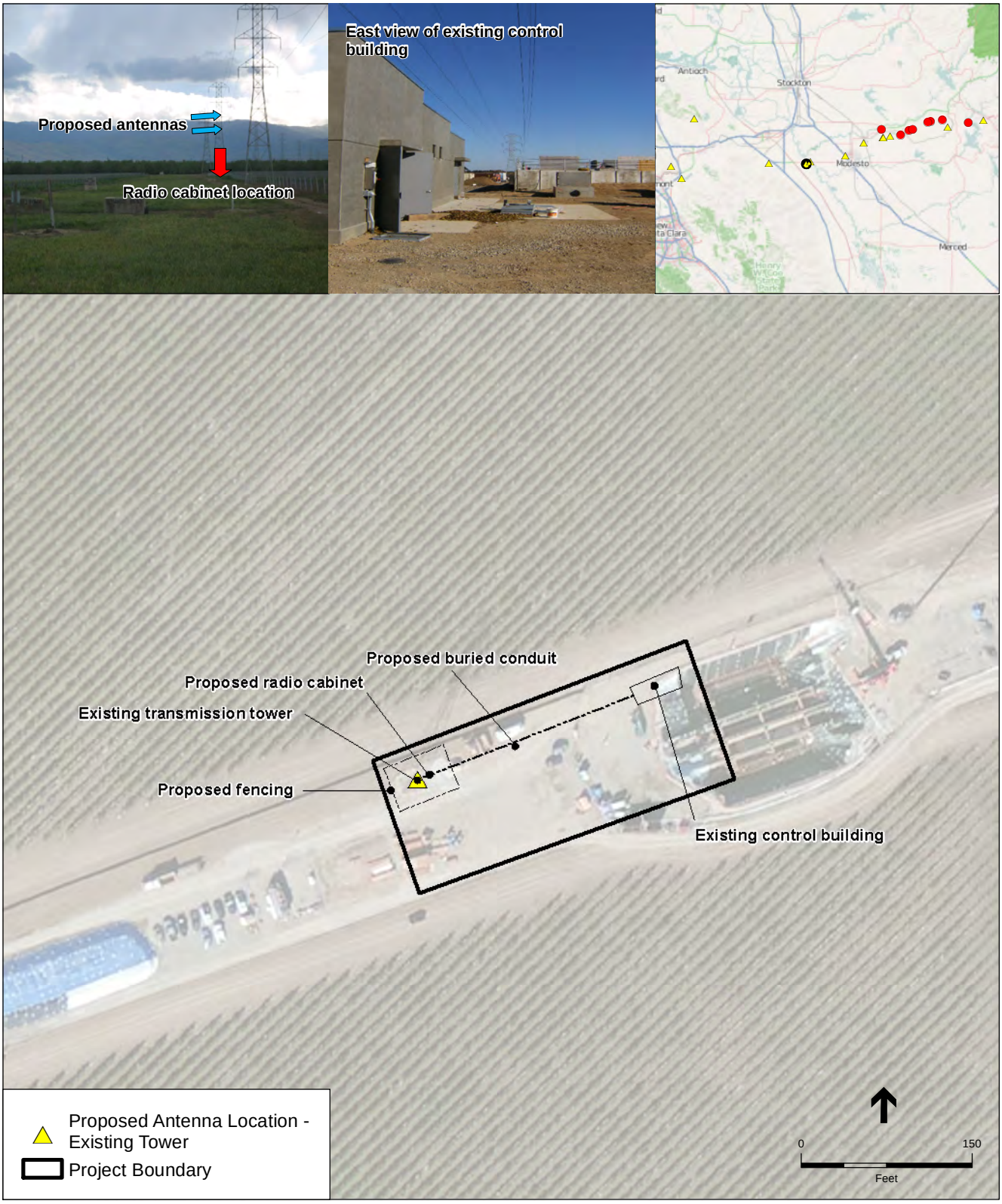



SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-15**

San Joaquin Valve House (Site 15)

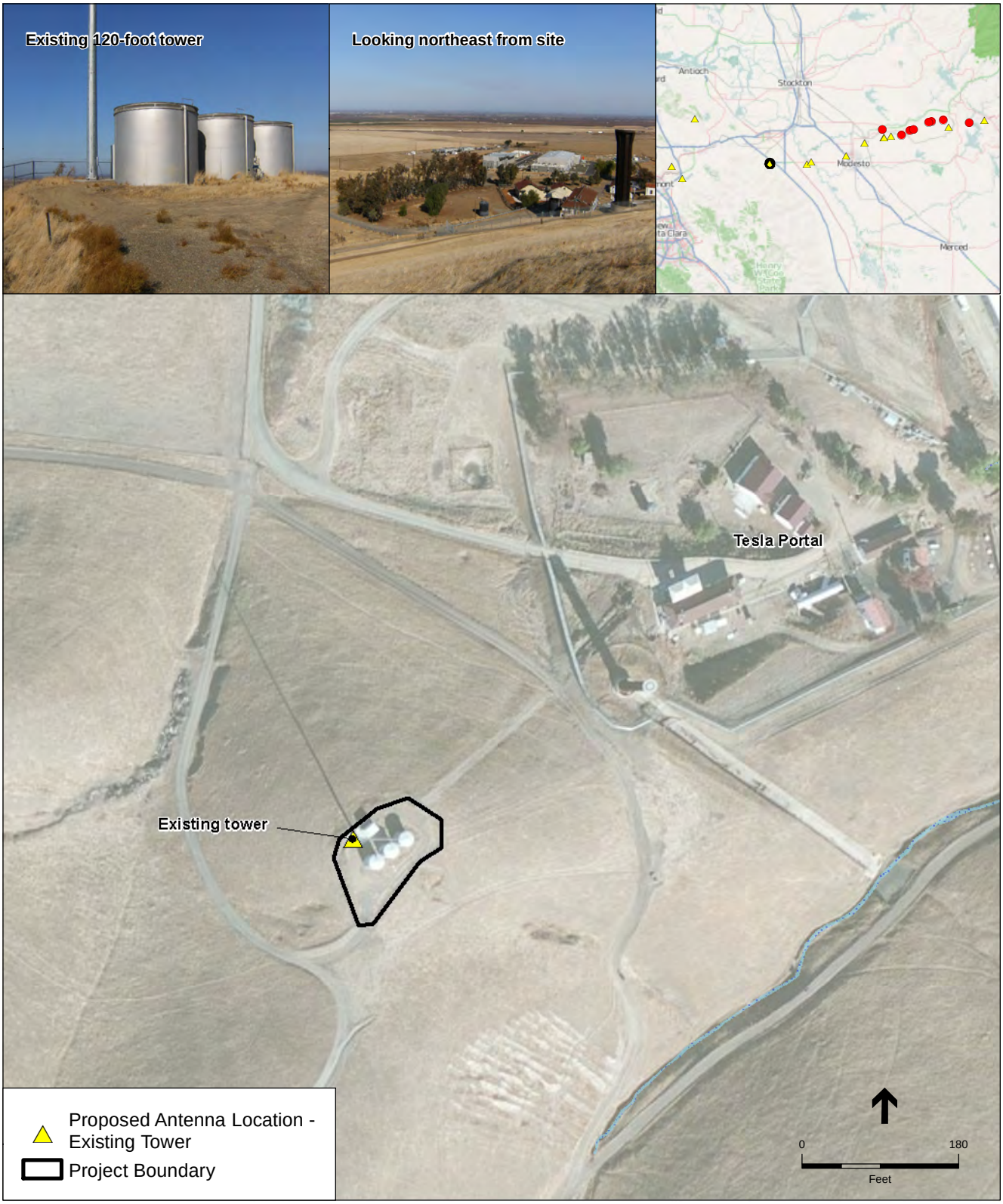



SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-16**

Pelican Cross Over (Site 16)

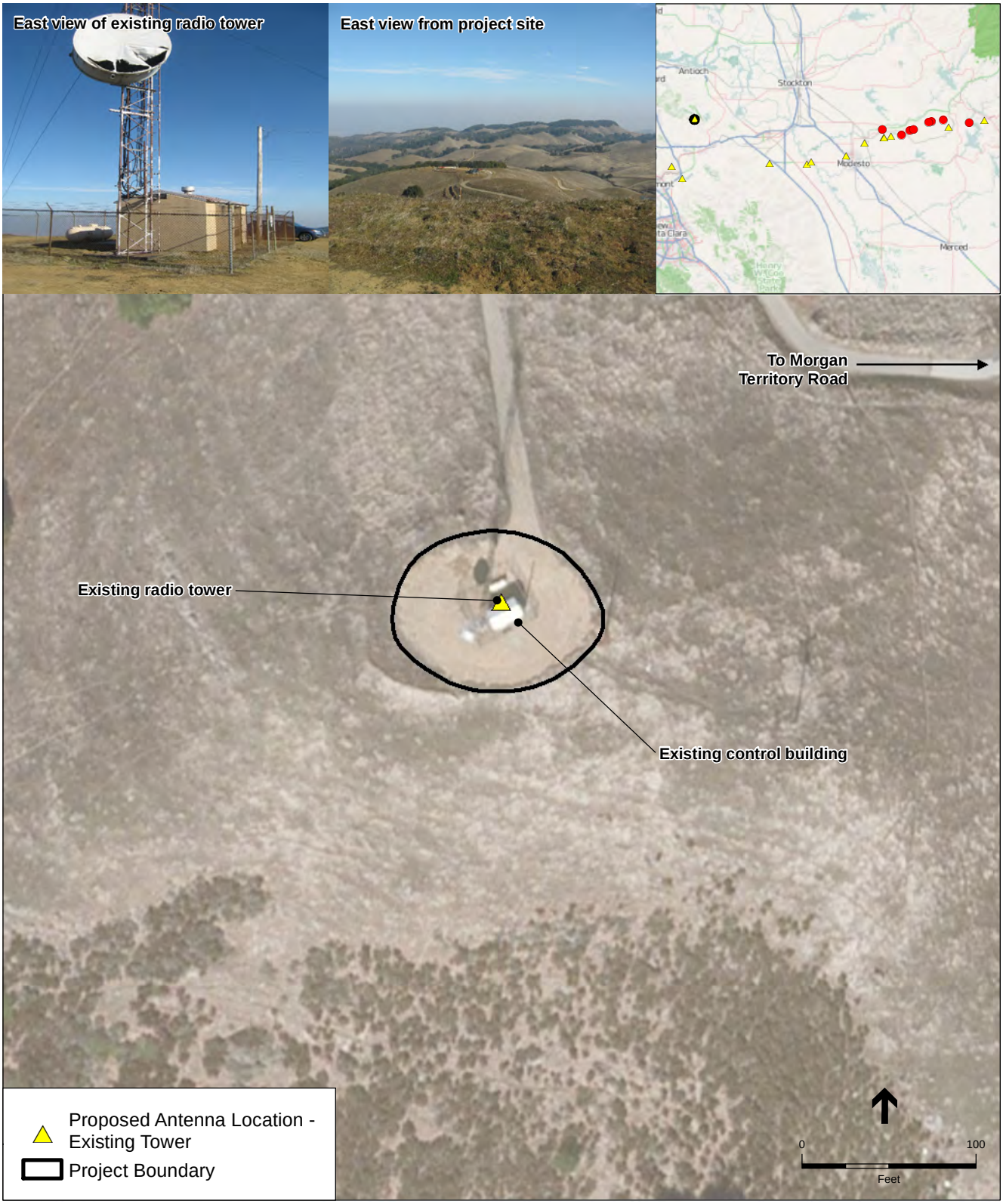



SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 2-17**

Tesla Treatment Facility Tower (Site 17)




SOURCE: ESRI, 2011

San Joaquin Valley Communication System Upgrade Project

**Figure 2-18**

SBA Mt. Diablo (Site 18)


SOURCE: ESRI, 2011

San Joaquin Valley Communication System Upgrade Project

**Figure 2-19**

Sunol Ridge ATC (Site 19)


SOURCE: ESRI, 2011

San Joaquin Valley Communication System Upgrade Project

**Figure 2-20**

Calaveras Substation (Site 20)

## B. PROJECT SETTING

### B.1 Regional and Local Setting

The project area is located in northern California, primarily within the San Joaquin Valley. Project sites extend westward from the edge of the Sierra Nevada mountain range at Moccasin Peak for approximately 90 miles to the Sunol Valley toward the San Francisco Bay. The topography across the San Joaquin Valley is relatively flat, generally sloping downward from the edge of the Sierra Foothills to a low point near the San Joaquin River at an elevation of approximately 25 feet[9], then rising to an approximate elevation of 300 feet near Interstate 580 (I-580) at the western edge of the San Joaquin Valley and the beginning of the Coast Ranges hills.

As described in Section A, *Project Description*, project sites are located at existing SFPUC water and power system facilities located on property owned by the SFPUC or within an easement granted to the SFPUC. The SFPUC facilities include valve houses, throttling stations, pumping stations, pipeline crossovers, electrical substations, power transmission towers, and radio towers. In addition, new antennas and radio equipment are proposed at three existing radio towers owned and operated by others; the SFPUC would lease space at these towers. **Table 3** presents setting information for each of the project sites.

### B.2 Other SFUC Projects

Other SFPUC projects at or in the vicinity of the SJVCS project sites were examined in order to provide pertinent background information on the SJVCS project area, as summarized and presented in the following sections.

#### Hetch Hetchy Communication System Upgrade Project

In October 2007, Hetch Hetchy Water & Power (HHWP), a division of the SFPUC, in cooperation with the U.S. Department of the Interior National Park Service (NPS) and the U.S. Department of Agriculture Forest Service (USFS), prepared an Environmental Assessment (EA)/Preliminary MND and IS for the Hetch Hetchy Communication System Upgrade Project. The Final MND was adopted on April 1, 2008.[10]

[9] Feet above mean sea level.

[10] San Francisco Planning Department, 2008. *Final Mitigated Negative Declaration, Hetch Hetchy Communication System Upgrade Projec*t. April 1, 2008.

**TABLE 3**
**PROJECT SITES SETTING**

| Site Number/Name | Local Setting[a] |
|---|---|
| **Tuolumne County** | |
| 1- Moccasin Peak | This site is currently developed with an existing radio tower and small building for communication equipment surrounded by a chain link fence. The site is accessed by an existing dirt road. The facility is located on a mountain ridge within the Sierra Nevada foothills and surrounded by woodland and open space. |
| 2- Red Mountain Bar | This facility is located adjacent to the Don Pedro Reservoir, approximately 3.2 miles southwest of SR 49. The facility includes an existing concrete building with roof-mounted solar panels, spillway, and fencing adjacent to an electrical transmission tower and power lines. The site is accessed by an existing dirt road. The vicinity is open space with a mixture of grassland and trees, and the adjacent reservoir. |
| 3- Transmission Tower 122N | This existing electrical transmission tower is located on a grassy ridge dominated by grasses and rock outcroppings. The site is accessed by an existing dirt road. Surrounding areas are used for grazing. |
| 4- Rock River Lime Plant | This project site consists of a cut and leveled yard area covered with dirt and grass, surrounded by a barbed wire fence. Two water tanks for the nearby lime plant are adjacent to the project area. Construction staging areas would be located within the lime plant facility yard, which includes a caretaker residence. The site vicinity is comprised of oak savannah and annual grassland, and is used for cattle grazing. |
| 5 - Oakdale Portal | At the Oakdale Portal, the three pipelines connect to the Foothill Tunnel. The facility consists of the pipelines, three small valve house buildings, a surge tower and appurtenant facilities. The valve houses are one-room buildings constructed of board-formed concrete clad in stucco with gable roofs covered in red clay tile. Extensive construction has been underway at this site in for installation of a pipeline (see Section B.2.2, *San Joaquin Pipeline System Project*, below). The vicinity is comprised of grassland and oak savannah, and is used for cattle grazing. |
| **Stanislaus County** | |
| 6 - Throttle Station 1-3 | This existing throttling station consists of a small concrete building with roof-mounted solar panel, a propane tank, fencing and gravel yard. The surrounding area is grassland used for cattle grazing. |
| 7 - Throttle Station 2 | This existing throttling station consists of a small concrete building with a roof-mounted solar panel, propane tank, fencing and gravel yard. The surrounding area is grassland used for cattle grazing. |
| 8 - MP 56.51 Tie-In | This site was recently under construction for the SJPL system project facilities, including a tie-in vault and concrete control building. The surrounding area is grassland used for cattle grazing and agriculture. |
| 9 - Emery Cross Over | This site has also been recently under construction for SJPL project facilities, including a cross over, control building, and transformer. The surrounding area is used for agriculture. |
| 10 - Warnerville Yard | The Warnerville Yard is located off Warnerville Road, approximately 2 miles southeast of the City of Oakdale. The site consists of an electrical power switchyard with existing power transmission towers, a radio tower with a parabolic dish antenna, and associated equipment within a fenced enclosure. The ground surface is either gravel fill or paved roadway and parking area. The surrounding area is primarily in agricultural use. Several residences are located approximately 100 feet to 700 feet south of the site. |
| 11 - Oakdale Office | The Oakdale Office consists of a small two-story building (a former residence) located within the SFPUC service yard and used as an administrative office. The facility also includes a large corrugated metal storage building and a paved yard with various equipment and machinery. A chain-link fence encloses the service yard. The site vicinity is mix of residential, industrial, and institutional uses. Residences are located adjacent to the south, and between 75-150 feet to the north and east. A manufacturing facility, with numerous large storage tanks and towers, is located to the west. |

**TABLE 3 (Continued)**
**PROJECT SITE SETTING**

| Site Number/Name | Local Setting[a] |
|---|---|
| **Tuolumne County** | |
| 12 - Albers Road Valve House | The Albers Road Valve House, constructed in 1950, is a small concrete building clad in stucco with a red clay tile roof surrounded by fencing, located on the west side of Albers Road. Two power transmission towers are located on the east side of Albers Road and electrical transmission lines cross overhead in an east-west direction. The site vicinity is primarily agricultural, with an orchard and cultivated field located adjacent to the site. Two residences are located approximately 220 feet north of the site. |
| 13 - Roselle Cross Over | Roselle Cross Over includes a water conveyance facility, and two electrical transmission towers and transmission lines. The facility has a control building, a small emergency generator building, propane tank, fencing, paved parking areas and gravel yard. Land use in the site vicinity is mixed with a residence and small warehouse-type buildings to the north; an irrigation canal to the east; a grass yard/horse enclosure and residences to the south; cattle grazing lot across the street to the west; and a residential subdivision to the northwest. |
| 14 - Modesto 2 ATC | The Modesto 2 ATC site is an existing radio tower with multiple antennas owned and operated by American Tower Corporation. The tower, control building and radio cabinets are surrounded by chain link fence. The surrounding areas are a gravel parking lot and access roads for Modesto Junior College, located approximately 1,000 feet to the west. Agricultural cropland is present to the north and south, and SR 99 is to the east. |
| 15 - San Joaquin Valve House | The San Joaquin Valve house includes a control building, electrical transmission tower and parking area on an irregularly shaped parcel surrounded by fencing, adjacent to Maze Boulevard. The San Joaquin River is present across the road to the south. The site vicinity includes agricultural use and a wildlife refuge. |
| 16 - Pelican Cross Over | This site was recently under construction for the SJPL project facilities, including a cross over facility and control building. An existing electrical transmission tower and power transmission lines are located on the site. The surrounding area is in agricultural use. |
| **San Joaquin County** | |
| 17 - Tesla Treatment Facility Tower | A monopole-type radio tower and small control building surrounded by a chain-link fence is located on a hillslope approximately 400 feet southwest of the SFPUC Tesla Water Treatment Facility. The surrounding hillsides in the vicinity are primarily grassland used for cattle grazing. |
| **Contra Costa County** | |
| 18 - Mt. Diablo SBA | SBA Communications Corporation operates an existing radio tower located on a peak at Mt. Diablo. The tower, small control building and propane tank are enclosed by a chain-link fence. The site is accessible by a private dirt road. The surrounding area is primarily open space that also supports cattle grazing. A residence was under construction approximately 1,000 feet southeast of the site. |
| **Alameda County** | |
| 19 - Sunol Ridge ATC | The Sunol Ridge ATC site is an existing communications facility operated by American Tower Corporation. Several radio towers and control buildings are located on a ridge, surrounded by fencing and open space that includes grazing. The site is accessible by a private paved road. |
| 20 - Calaveras Substation | The Calaveras Substation is an electrical power substation with multiple transmission towers and transformers and a control building. Fencing surrounds the gravel yard. Immediately adjacent are additional transmission towers and lines. Nurseries, quarries and quarry ponds, grazing, and Alameda Creek are within the site vicinity. |

NOTE:

[a] Site observations based primarily on data collected during site visits completed in December 2011.

This approved project upgraded the existing a communication system, expanded system coverage, and provided infrastructure for NPS and USFS communications equipment associated with their individual communication systems. The project covered 32 proposed sites in the upper Tuolumne River watershed of Yosemite National Park, the Stanislaus National Forest in the Sierra Nevada, and Stanislaus County, including improvements at Moccasin Peak and Warnerville Yard. The SJVCS project addresses similar communication system upgrades for SFPUC facilities located to the west of the Hetch Hetchy Communication System Upgrade Project.

### San Joaquin Pipeline System Project

The SJPL System Project was proposed to improve the regional water system with respect to water quality, seismic response, and water delivery. The existing SJPL system includes three large-diameter pipelines that carry water approximately 48 miles across the San Joaquin Valley. The SJPL System Project includes the construction of about 17.5 miles of new pipeline segments adjacent to the existing SJPL alignments. The new pipeline alignments extend approximately 7 miles to the west of the Oakdale Portal and 10 miles east of the Tesla Treatment Facility Tower within the existing SFPUC right-of-way (ROW). The project also includes the construction of two new crossover facilities, a new valve house at Oakdale Portal, and a tie-in vault. The SJPL System Project Final Environmental Impact Report (EIR) was certified and the project was approved in July 2009.[11] Biological resource surveys, wetland delineations, and cultural resource surveys performed in support of the SJPL System EIR encompassed many of the proposed SJVCS project sites.

### Rehabilitation of the Existing San Joaquin Pipelines Project

The SFPUC Rehabilitation of the Existing San Joaquin Pipelines Project consists of condition assessment, as-needed repair/replacement, installation of cathodic protection, and maintenance of the existing SJPL system. The study area for this project included the entire SJPL, including many of the proposed SJVCS project sites. A Mitigated Negative Declaration (MND) for this project was adopted and the project was approved December 14, 2010. Condition assessment, repair, and maintenance activities under this project are ongoing, year-round, from 2011 to 2031.[12]

---

[11] San Francisco Planning Department, 2009. *Final Environmental Impact Report on the San Joaquin Pipeline System Projec*t. July 9, 2009.

[12] San Francisco Planning Department, 2010. *Mitigated Negative Declaration, Rehabilitation of the Existing San Joaquin Pipelines*. August 4, 2010, amended on November 2, 2010.

## B.3 Other Projects in the Vicinity

Past, present, and reasonably foreseeable future projects occurring in the vicinity of proposed project sites could result in cumulative impacts in combination with the SJVCS project impacts. These projects include SFPUC projects described above as well as other projects identified by the local planning agencies in the project vicinity. A complete list of potential cumulative projects in the SJVCS project vicinity is presented in Appendix A. These projects include numerous proposals for residential developments in urban areas of Oakdale, Riverbank and Modesto for which the construction period is uncertain. Other than SFPUC projects, there are few cumulative projects in rural areas near SJVCS project sites. The discussion of potential cumulative impacts is included in the individual environmental issue area sub-sections within Section E.

## C. COMPATIBILITY WITH ZONING, PLANS, AND POLICIES

| | *Applicable* | *Not Applicable* |
|---|---|---|
| Discuss any variances, special authorizations, or changes proposed to the Planning Code or Zoning Map, if applicable. | ☐ | ☒ |
| Discuss any conflicts with any adopted plans and goals of the City or Region, if applicable. | ☒ | ☐ |
| Discuss any approvals and/or permits from City departments other than the Planning Department or the Department of Building Inspection, or from Regional, State, or Federal Agencies. | ☒ | ☐ |

No variances, special authorizations, or changes to the San Francisco Planning Code or Zoning Map are proposed as part of this project; therefore, these issues are not applicable and are not discussed further.

This section provides a general description of the land use plans and policies and how they apply to the project. This section also discusses potential inconsistencies between this project and the applicable plans, and identifies approvals and/or permits required for project implementation. The focus of this section is on the City and County of San Francisco's (CCSF) land use plans and policies, the SFPUC's plans and policies, and other regional and local plans that apply to the project area. The SJVCS project sites are located in Tuolumne, Stanislaus, San Joaquin, Contra Costa, and Alameda counties, as well as the cities of Riverbank, Oakdale, and Modesto. Project sites are primarily located on property that is owned by the CCSF and managed by the SFPUC. The SFPUC is an agency of the CCSF, and therefore is under the jurisdiction of the City's charter and plans, where applicable. In addition, the SFPUC has adopted plans specific to the management of the agency's water resources. The SFPUC is not legally bound by the land use plans and policies of other jurisdictions; however, non-CCSF land use plans 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 also relevant to the evaluation of project impacts with respect to compatibility of a project with certain aspects of local land use plans and policies.

## C.1 City and County of San Francisco Plans and Policies

The CCSF land use plans and policies are primarily applicable to projects within the jurisdictional boundaries of the City of San Francisco, although in some cases they may apply to projects outside these boundaries. The CCSF has authority (San Francisco Charter, Section 4.112) over the management, use, and control of land it owns outside of the city, subject to the SFPUC's exclusive charge of the construction, management, use, and control of city water supplies and utilities (San Francisco Charter, Section 8B.121). Accordingly, the CCSF considers its own plans and policies on its extraterritorial lands, as applicable.

California Government Code Section 53090 et seq. provides that the SFPUC receive 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. 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.

### *C.1.1 San Francisco General Plan*

The San Francisco General Plan,[13] as amended, sets forth the comprehensive long-term land use and development policies for San Francisco. One of the basic goals of the San Francisco General Plan is "coordination of the growth and development of the city with the growth and development of adjoining cities and counties and of the San Francisco Bay Region." The San Francisco General Plan consists of ten 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 elements that may be relevant to the project are briefly described below.

**Air Quality Element.** This element promotes the goal of clean air planning through objectives and policies aimed at adhering to air quality regulations.

[13] CCSF, 1988. *San Francisco General Plan.* As amended through 1996.

**Community Safety Element.** This element addresses the potential for geologic, structural, and nonstructural hazards to affect city-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 freshwater sources and speaks to San Francisco's responsibility to provide a permanent, clean water supply to meet present and future needs and to maintain an adequate water distribution system.

**Urban Design Element.** This element promotes the preservation of landmarks and structures with notable historic, architectural, or aesthetic value, and seeks to balance development with its natural environmental and visual features.

The San Francisco General Plan sets forth the CCSF's comprehensive long-term land use policy, and as such, is primarily applicable to projects within the CCSF's jurisdictional boundaries. The project, which is located outside the CCSF boundaries, consists of upgrading the existing radio communication system for operation and security of the SFPUC water and power facilities. The project would result in long-term improvement of the reliability of the water and power systems to meet customer needs, and therefore the project would support the health and safety of the communities who are served by the SFPUC utility systems. In addition, the project would adhere to air quality regulations and preserve the integrity of existing historic structures. Thus, the project does not appear to conflict with the San Francisco General Plan and its goals.

### *C.1.2 Accountable Planning Initiative*

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the City Planning Code to establish eight priority planning policies to the San Francisco General Plan. The Priority Policies serve as the basis upon which inconsistencies in the San Francisco General Plan are to be resolved. The eight Priority Policies state that:

1. Neighborhood-serving retail uses be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced
2. Housing and neighborhood character be conserved and protected in order to preserve the cultural and economic diversity of the neighborhoods
3. The City's supply of affordable housing be preserved and enhanced
4. Commuter traffic not impede the Muni transit service or overburden streets or neighborhood parking
5. Diverse economic base be maintained by protecting industrial and service sectors from displacement by commercial office development, and future opportunities for resident employment and ownership in these sectors be enhanced

6. The City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake
7. Landmarks and historic buildings be preserved
8. Parks and open space and their access to sunlight and vistas be protected from development

Of the eight priority policies, only the sixth and seventh (relating to earthquakes and historic buildings, respectively) would be relevant to the project. The remaining six policies would not be relevant because the project would: (1) be constructed outside of San Francisco; (2) be located away from San Francisco neighborhoods; (3) have no effect on nor create the need for affordable housing; (4) not result in any increase in commuter automobiles; (5) not result in commercial office development; and (6) have no long-term effect on open space. Priority policy 6 is aimed at helping the City achieve the greatest possible preparation to protect against injury and loss of life in the event of an earthquake. The SJVCS project would help ensure the reliability of the City's water and power systems in the event of a major earthquake by improving the SFPUC's ability to control its water and power system facilities rapidly and reliably, thus protecting water and power availability during emergencies. With respect to priority policy 7, preservation of landmarks and historic buildings, the project would not result in significant effects on landmarks or historic buildings. The project would directly affect potentially eligible historic resources at Albers Road Valve House and San Joaquin Valve House; however, the alterations would be considered minor and would not substantially alter the setting to the extent that would be considered a significant impact (see Section E.4, *Cultural and Paleontological Resources*). The project does not appear to conflict with the Accountable Planning Initiative.

### *C.1.3 San Francisco Sustainability Plan*

The San Francisco Board of Supervisors endorsed the Sustainability Plan for the City of San Francisco[14] in 1997, although the board has not committed the CCSF to perform the actions addressed in the plan. The plan serves as a blueprint for sustainability, with many of its individual proposals requiring further development and public comment. The plan's underlying goals 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. Ten of these areas 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

[14] CCSF, 1997. *The Sustainability Plan for the City of San Francisco*. Department of the Environment.

wastewater. Five of these areas are broader in scope and cover many issues, including the economy and economic development, environmental justice, municipal expenditures, public information and education, and risk management. Under the topic of "water" are goals addressing water reuse, water quality, water supply, groundwater supply, and infrastructure. Each topic area has a set of indicators that is to be used over time to determine whether San Francisco is moving in a direction that supports sustainability for that area.

The Sustainability Plan for the City of San Francisco was developed to address the city's long-term environmental sustainability. The project does not appear to conflict with the goals of the plan because it would not result in increased water demand or use and would maintain the physical resources and systems that support life in San Francisco.

### *C.1.4 San Francisco Floodplain Management Ordinance*

The 2008 San Francisco Floodplain Management Ordinance, approved by San Francisco's mayor and Board of Supervisors as Chapter 2A, Article XX, Sections 2A.280-2A.285 of the City's Administrative Code, requires that new or substantially improved structures in special flood hazard areas be protected against flood damage, and prohibits uses that would increase flood risks. In general, the ordinance requires that the first floor of structures in flood zones be constructed above the floodplain or be flood-proofed, and be consistent with applicable federal and state floodplain management regulations. The ordinance applies to construction on CCSF-owned property located outside the boundaries of San Francisco.[15]

As discussed further in Section E.15, *Hydrology and Water Quality*, the project would not include new structures in special flood hazard areas or floodplains; therefore, this policy would not apply.

## C.2 SFPUC Plans and Policies

### *C.2.1 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 regional water system within the Tuolumne River, Alameda Creek, and Peninsula watersheds.[16] It also

[15] CCSF, 2010. *San Francisco Floodplain Management Program Fact Sheet*. CCSF Office of the City Administrator. Revised January 29, 2010.
[16] SFPUC, 2006. *SFPUC Final Water Enterprise Environmental Stewardship Policy*. June 27, 2006.

addresses ROWs and properties in urban surroundings under SFPUC management. The policy includes the following provisions:

- 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 operations of the SFPUC water system (including water diversion, storage, and transport); construction and maintenance of infrastructure; land management policies and practices; purchase and sale of watershed lands; and lease agreements for watershed lands protect and restore native species and the ecosystems that support them
- The SFPUC will manage ROWs and properties in urban surroundings under its management in a manner that protects and restores habitat value where available and encourages community participation in decisions that significantly interrupt or alter current land use in these parcels

With implementation of mitigation measures identified in this document, the project does not appear to conflict with the underlying goals of the Water Enterprise Environmental Stewardship Policy, including protection of local watersheds and natural resources.

### *C.2.2 Right-of-Way Integrated Vegetation Management Policy*

In February 2007, the SFPUC adopted the Right-of-Way Integrated Vegetation Management Policy[17] to manage vegetation that poses a threat or hazard to the regional water system's operation, maintenance, and infrastructure throughout the SFPUC water distribution and collection systems. The roots of large woody vegetation (vegetation) can damage transmission pipelines by causing corrosion of the outer casements. Trees and other vegetation directly adjacent to pipelines can also make repairs and emergency and annual maintenance difficult, hazardous, and expensive, and can increase concerns for public safety. Fire danger within the SFPUC ROWs is also a concern, as the SFPUC is required to comply with local fire ordinances, which specify that existing vegetation be identified, reduced, and managed to prevent potential disruption to fire protection services. Another objective of this policy is to reduce and eliminate, to the degree practicable, the use of herbicides on vegetation within the ROWs. Specific elements of the Right-of-Way Integrated Vegetation Management Policy address the management and removal of vegetation (including trees), annual grasses, and weeds within the SFPUC ROWs, and the management and removal of vegetation and trees on land leased or permitted by the SFPUC.

[17] SFPUC, 2007. *Right-of-Way Integrated Vegetation Management Policy*. February 2007.

The SJVCS project components would be installed at existing SFPUC facilities, which are currently managed in accordance with the policy, as well as at leased sites. No herbicide use is proposed under the project. The project does not appear to conflict with the Right-of-Way Integrated Vegetation Management Policy.

### *C.2.3 Right-of-Way Encroachment Policy*

In February 2007, the SFPUC approved a revised Right-of-Way Encroachment Policy that clarifies how it will handle encroachments by others into its ROWs.[18] The policy guides and outlines the procedures for prioritizing and implementing encroachment removal efforts, focusing specifically on encroachments that would:

- Endanger water, sewer, or electrical transmission lines and appurtenances
- Impair access to facilities for emergency repair, maintenance, or operational activity
- Be detrimental to the efficient and effective maintenance of vegetation in the ROW in accordance with the SFPUC Vegetation Management Policy described above
- Obstruct the inspection and monitoring of equipment or the collection of land survey, corrosion control, and water quality data
- Increase the SFPUC's liability

The Right-of-Way Encroachment Policy would not be applicable to the SJVCS project because no encroachment removal efforts are included in the project.

### *C.2.4 Alameda Watershed Management Plan*

The Alameda watershed encompasses 36,000 acres of CCSF-owned lands within the much larger hydrologic boundaries of the Alameda Creek watershed, including lands within the drainage areas of San Antonio and Calaveras Reservoirs as well as lands that drain to Alameda Creek in the Sunol Valley. The SFPUC adopted the Alameda Watershed Management Plan (WMP)[19] for the Alameda watershed to provide a policy framework for the SFPUC to make decisions about activities that are appropriate on watershed lands. The Alameda WMP provides goals, policies, and management actions that address watershed activities and reflect the unique qualities of the watershed. The Alameda WMP is also intended for use by the SFPUC as watershed management implementation guidelines. As part of implementation of the Alameda WMP, the SFPUC reviews all plans, projects, and activities that occur

[18] SFPUC, 2007. *Right-of-Way Encroachment Policy.* February 2007.
[19] SFPUC, 2001. *Final Alameda Watershed Management Plan*. April 2001.

within the Alameda watershed for conformity with the WMP and for compliance with environmental codes and regulations.

One of the SJVCS project sites, the Calaveras Substation, is located within the Alameda Watershed. This project component would be constructed at an existing SFPUC facility that is managed in accordance with the Alameda WMP. The project does not appear to conflict with the Alameda WMP.

## C.3 Conservation Plans

### *C.3.1 San Joaquin River National Wildlife Refuge Comprehensive Conservation Plan*

The San Joaquin River National Wildlife Refuge (NWR) is governed by a Comprehensive Conservation Plan (CCP) that was approved in September 2006. The CCP identifies goals, objectives, and strategies that are meant to guide land use management decisions and planning strategies for the refuge over a 15-year period. The goals identified in the CCP are as follows:

- **Goal 1 (Biological Diversity).** Conserve and protect the natural diversity of migratory birds, resident wildlife, fish, and plants through restoration and management of riparian, upland, and wetland habitats on refuge lands
- **Goal 2 (Threatened and Endangered Species).** Contribute to the recovery of threatened and endangered species, as well as the protection of populations of special-status wildlife and plant species and their habitats
- **Goal 3 (Aleutian Canada Goose).** Provide optimum wintering habitat for Aleutian Canada geese to ensure their continued recovery from threatened and endangered species status
- **Goal 4 (Ecosystem Management).** Coordinate the natural resource management of the San Joaquin River NWR within the context of the larger Central Valley/San Francisco Ecoregion
- **Goal 5 (Public Use of the Refuge).** Provide the public with opportunities for compatible, wildlife-dependent visitor services to enhance understanding, appreciation, and enjoyment of natural resources at the San Joaquin River NWR

The presence of the Hetch Hetchy aqueduct (i.e., the SJPL system) is acknowledged on figures contained in the CCP, and the SJPL ROW agreement is mentioned in the text describing unique characteristics of the refuge. There is no further mention of the SJPL ROW or potential activity within it in the CCP discussion of objectives and strategies.[20] Section E.13, *Biological Resources*, presents a discussion of habitat conservation plans relevant to the project and addresses plan consistency.

[20] USFWS, 2006. San Joaquin River National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Assessment. June 2006.

### *C.3.2 San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan*

The San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan[21] provides a strategy for conserving open space while addressing the need to convert open space to non-open space uses, protecting agricultural resources, preserving property rights, and providing for the long-term management of plant, fish, and wildlife species, especially special-status species. Section E.13, *Biological Resources*, presents a discussion of habitat conservation plans relevant to the project and addresses plan consistency.

## C.4 Local General Land Use Plans

The project is located in portions of Tuolumne, Stanislaus, San Joaquin, Contra Costa, and Alameda counties. ~~This section describes the local and regional land use plans adopted by other jurisdictions that are relevant to the analysis of the proposed project.~~ State law (California Government Code Section 53090 et seq.) mutually exempts cities and counties from complying with each other's building and zoning ordinances. The SFPUC, which is part of the CCSF, is therefore exempt from complying with the building and zoning ordinances of other cities and counties. This same state law also exempts public utilities and special-purpose local agencies from complying with local building and zoning ordinances when locating or constructing facilities for the production, generation, storage, treatment or transmission of water. Although the SFPUC is not legally bound to 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. In addition, this IS addresses aspects of compatibility with local land use planning if the project would:

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts or bicycle racks), or would cause a substantial increase in transit demand that cannot be accommodated by existing or proposed transit capacity or alternative travel modes (analyzed in Section E.5, *Transportation and Circulation*)
- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (analyzed in Section E.6, *Noise*)
- For a project located within an area covered by an airport land use plan (or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport), expose people residing or working in the project area to excessive noise levels (analyzed in Section E.6, *Noise*)
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (analyzed in Section E.13, *Biological Resources*)

[21] San Joaquin County Council of Governments, 2000. *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan*. November 14, 2000.

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (analyzed in Section E.13, *Biological Resources*)
- 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 (analyzed in Section E.17, *Mineral and Energy Resources*)
- Conflict with existing zoning for agricultural use or a Williamson Act (analyzed in Section E.18, *Agricultural and Forest Resources*)

Determinations of project consistency with local general plans would be made by the pertinent land use jurisdictions following notification by the SFPUC pursuant to state law. The project proposes to upgrade the communication system for existing SFPUC facilities, primarily located within the SJPL ROW, which has been maintained as a utility corridor since the 1930s. The project would not result in any change of uses within or outside of the SJPL ROW, and therefore would not appear to be in conflict with any adopted county and city plans and goals.

This IS systematically identifies the potential environmental impacts associated with implementation of the project as well as feasible measures to avoid or substantially lessen such effects. The criteria used in this IS dovetail with the intent of general plan goals and policies related to protection of the environment. As detailed throughout Section E, *Evaluation of Environmental Effects*, most of the environmental impacts attributable to the project are associated with construction activities, and these impacts would be reduced to *less-than-significant* levels through proposed mitigation measures. Therefore, the project would be consistent with the local general plans.

## D. SUMMARY OF ENVIRONMENTAL EFFECTS

The project could potentially affect the environmental factors 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 |

## E. EVALUATION OF ENVIRONMENTAL EFFECTS

This IS examines the project to identify potential effects on the environment. For each item on the IS checklist, the evaluation has considered the impacts of the project both individually and cumulatively. All items on the IS checklist that have been checked "Less than Significant with Mitigation Incorporated," "Less than Significant Impact," "No Impact," or "Not Applicable" indicate that, upon evaluation, staff has determined that the project could not have a significant adverse environmental effect relating to that issue. A full discussion is included for all items checked "Less than Significant with Mitigation Incorporated" and "Less than Significant Impact," and a brief discussion is included for items checked "No Impact" or "Not Applicable." The items checked above have been determined to be "Less than Significant with Mitigation Incorporated."

Impacts at project sites are discussed collectively where similar impacts would occur, and individually if unique site conditions warrant a separate discussion. The impact analysis considers both construction, and operation and maintenance of the project. The significance conclusions presented in the impact statements represent the overall impact for the project; where significance determinations vary by site, the analysis identifies site-specific impacts.

Environmental impacts are numbered throughout this IS using the section topic identifier followed by sequentially numbered impacts. Mitigation measures are numbered to correspond to the impact numbers; for example, Mitigation Measure M-CP-1 addresses Impact CP-1. Cumulative impacts are discussed at the end of each environmental topic impact discussion and use the letter C to identify them; for example, Impact C-CP addresses cumulative cultural and paleontological resources impacts.

———————————————

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☒ | ☐ | ☐ |

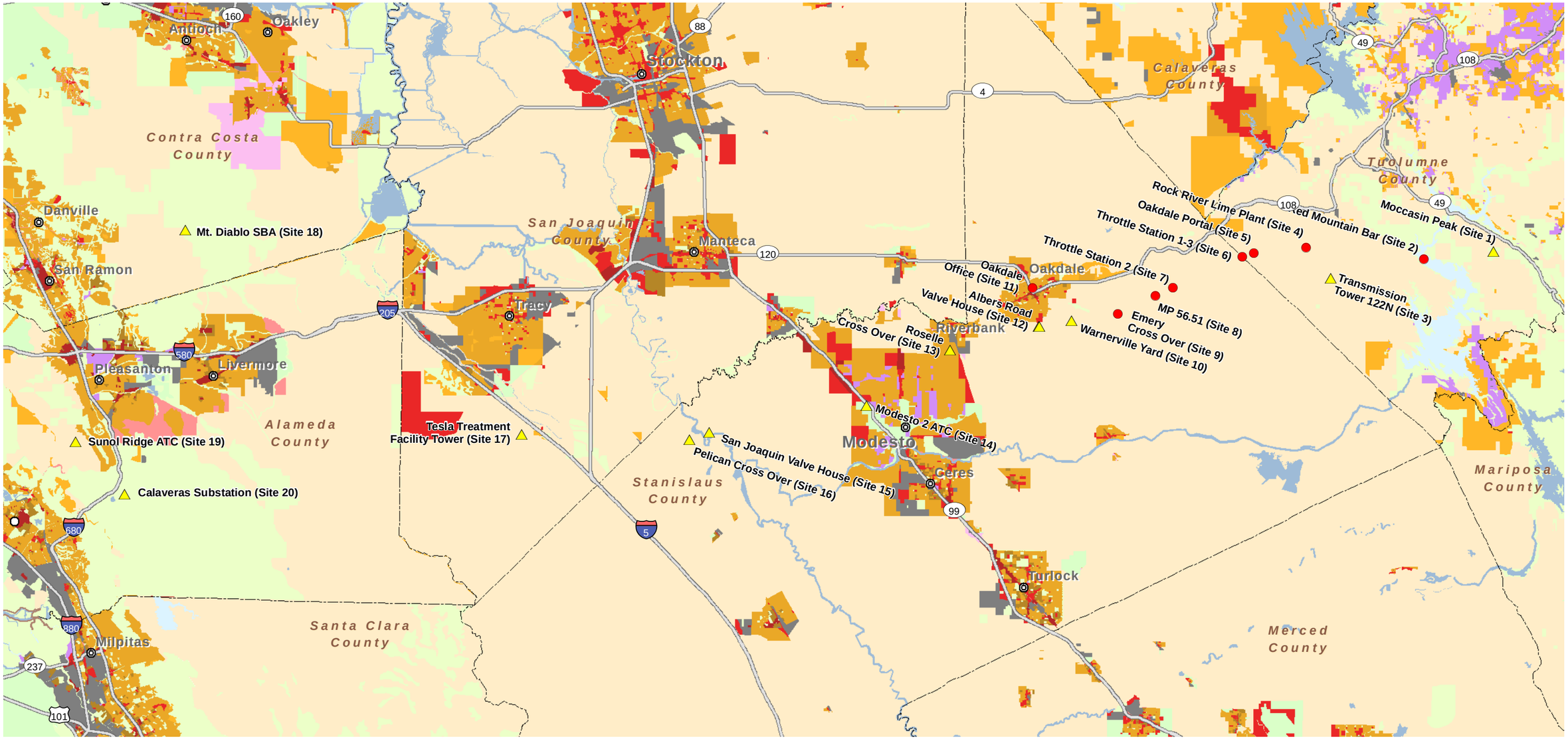
Land uses in the project vicinity generally include rangelands in the Sierra Nevada foothills and agricultural and urban uses in the San Joaquin Valley. Land uses adjacent to the SFPUC ROW where it extends through portions of the cities of Riverbank and Modesto include rural residential development or urban uses (e.g., residential and commercial). Overall land uses in the project vicinity are shown on **Figure 3;** land uses surrounding each project site are described in Section B, *Project Setting*. The majority of the SFPUC ROW is undeveloped and has been maintained as open space to provide access to the SFPUC's regional water and power system facilities (such as the pipelines, valve boxes, valve houses, throttling stations, and electricity transmission towers). However, at some project sites, agricultural uses such as grazing and field crops occur within the ROW.

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

Construction activities would take place primarily at project sites located at existing water and power system facilities within the SFPUC ROW or within other developed communication tower sites. Limited disruption to some agricultural land uses that extend into the SFPUC ROW could occur during project construction; however, these disruptions would be temporary and would not physically divide an established community. When completed, radio towers, antennas, and communication equipment would be contained within site facilities. Operation and maintenance of the project would require routine visits to the sites, similar to current operations. Thus, the project would not result in a permanent obstruction to surrounding land uses, which would continue to interrelate as they do currently. As a result, the project would have *no impact* related to the physical division of a community.

**Impact LU-2: The project would be consistent with applicable plans, policies or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)**

The proposed project facilities would not substantially alter existing land uses; as summarized in Table 3, Project Site Setting, the proposed facilities would be installed at locations with compatible types of uses, typically communications-related and/or water infrastructure. Further, the relatively limited scale of the proposed project facilities at each project site would be compatible with existing onsite and surrounding land uses. The project is not expected to conflict with the plans and policies of the CCSF; the SFPUC; Tuolumne, Stanislaus, San Joaquin, or Alameda counties; or the cities of Riverbank~~, Oakdale,~~ or Modesto.




**SJVCS Project Sites**

- Existing Tower
- New Tower

**Land Use Categories**

- Other - Undetermined
- Agriculture / Grazing
- Industrial
- High Density Commercial
- Low Density Commercial
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Open Space Public Lands
- Water
- Urban Reserve
- Planned Development
- Mixed Use
- Very Low Density Residential

0 10
Miles

SOURCE: ESRI, 2012; Cal-Atlas, 2006

San Joaquin Valley Communication System Project

**Figure 3**

Existing Land Uses

This page intentionally left blank

At the Oakdale Office site, the SFPUC office and corporation yard are an existing non-conforming use on a property zoned as Multiple Family Residential (R-3). Oakdale Code does not allow the expansion of a non-conforming use or wireless communication towers as a permitted or conditional use in the R-3 zone. The zoning of the Oakdale Office property, however, does not appear to have been adopted for the purpose of avoiding or mitigating an environmental effect per criteria E.1(c) above. In addition, with implementation of mitigation measures provided herein, this environmental analysis has identified no significant environmental effects that would occur at the Oakdale Office site as a result of project implementation. Further, as discussed in Section C.4, *Local General Land Use Plans*, the SFPUC is exempt from complying with the building and zoning ordinances of other cities and counties.

Therefore, impacts related to conflict with applicable land use plans, policies, or regulations would be *less than significant*.

**Impact LU-3: The project would not have a substantial impact upon the existing character of the project vicinity. (Less than Significant)**

## Construction

Project construction would consist of activities (e.g., excavation, use of construction equipment, and construction traffic) that could result in increased traffic, noise, and emissions that, when combined, could temporarily alter the character of existing open space, agricultural, residential, or commercial land uses. Potential physical environmental effects on surrounding land uses resulting from implementation of the project are addressed in Section E.2, *Aesthetics*; Section E.5, *Transportation and Circulation*; Section E.6, *Noise*; and Section E.7, *Air Quality*. Because project construction activities would be temporary (one to two months at each project site), would be limited in scale and intensity, and primarily located within existing facilities that are small and dispersed, the impact would be *less than significant*.

As described in Section A, *Project Description*, the SFPUC would provide notice, at least 14 days prior to construction, to adjacent business, landowners, and residents potentially affected by project construction. This notice would include contact information for a designated project liaison that would be responsible for responding to questions and complaints regarding project activities.

## Operation

Project sites are surrounded by a variety of land uses that include open space, agricultural, residential, and commercial (refer to Table 3, Project Site Setting). All project facilities would be installed within existing SFPUC facilities, or at existing radio communication tower facilities. Due to the nature of the existing land uses at each project site (e.g., communications and/or infrastructure), the project would not result in a substantial change to existing land uses, or the permanent introduction of new or incompatible land uses that would adversely affect surrounding areas. As discussed in Section E.2, *Aesthetics*, the addition of new towers at some of the project sites would be within the context of these developed facilities and would not substantially alter the visual character of the project vicinity. While the Oakdale Office site includes residential uses to the south and east, the surrounding land use character is heavily influenced by nearby commercial and industrial uses. To the west/southwest of the project site, such land uses include a dairy feed manufacturing facility involving bulk storage within numerous tanks and silos. North of the Oakdale Office site is a storage yard and parking area that includes a small office. Given these existing land uses, development of the proposed 60-foot lattice or monopole tower at the Oakdale Office site is not anticipated to substantially alter the existing land use character of the surrounding area. Therefore, the overall impact of project facilities on land use character in the vicinity would be *less than significant*.

Installation of radio towers or solar power facilities at the Transmission Tower 122N (Site 3), Throttle 1-3 (Site 6), Throttle 2 (Site 7), and MP 56.51 Tie-In (Site 8) would require the permanent conversion of less than 0.12 acre of open space/and or grazing land for the project. No other project sites would require the conversion of existing land use acreages. Because the impacted area would be small and dispersed, and because grazing uses could continue around the project sites, the project would not change the overall existing land use character of the area. Therefore, impacts from the conversion of open space/grazing land to land used for project facilities would be *less than significant*.

Project operation and maintenance activities would remain substantially consistent with current operations at these facilities. Potential impacts of project operation and maintenance on nearby land uses would be *less than significant*.

**Impact C-LU: The proposed project, in combination with past, present and reasonably foreseeable future projects in the vicinity of project sites, would not result in significant cumulative impacts related to land use. (Less than Significant)**

Cumulative projects included in Appendix A involve the conversion of agricultural land and open space to residential subdivisions and business parks which could substantially alter the existing character in the vicinity of some SJVCS project sites, particularly in San Joaquin and Stanislaus counties. However, because the proposed project would occur within developed sites and would not substantially alter the existing character of project areas, it would not contribute to any potential cumulative land use impact (*less than significant*).

---

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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 which 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 which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties? | ☐ | ☐ | ☒ | ☐ | ☐ |

The description of visual resources in the project area was developed based on a site reconnaissance conducted on November 30 and December 1, 2011, and other information sources such as the Caltrans State Scenic Highway Program, American Automobile Association (AAA) maps, and city and county general plan maps. In addition, general information on land use, public access and roadways, and other public-use areas within 2 miles of each site was evaluated to establish the sensitivity of public areas to visual change. Photographs of the project sites are shown on Figures 2-1 through 2-20. The study area for visual resources was generally considered to be areas within 2 miles that have views of any of the project sites.

## Visual Character

The general visual character of the land uses in the eastern portion of the project area, from Moccasin Peak to the Emery Cross Over (see Figures 1-1 and 1-2), is open space characterized by low rolling hills of the Sierra Nevada foothills. These foothills are primarily used as grazing land and they support low-growing grasses and scattered patchworks of oak woodland. Site elevations in this region range from a high of approximately 2,940 feet above mean sea level (amsl) at Moccasin Peak down to approximately 280 feet amsl at Emery Cross Over. Public roads in the area are typically lightly traveled rural roads; many of the project sites are accessible only by privately owned unpaved roads. The primary public travel corridors are State Route (SR) 108, SR 49 and SR 120, all of which are located to the north of the project sites. SR 108, which roughly parallels the south side of the Stanislaus River, is more than 2 miles north of and out of view of the project sites. SR 49 and SR 120 from the west end of Don Pedro Reservoir to the Moccasin Powerhouse are approximately 1 mile to the northeast of the Moccasin Peak site.

The general visual character of the central portion of the project area, from Warnerville Yard to the Pelican Cross Over (see Figures 1-2 through 1-7), is flat, agricultural and rural, characterized by low-growing agricultural row crops and orchards, existing water and electrical transmission facilities, rural roads, and interspersed urban areas (i.e., cities of Oakdale, Riverbank, and Modesto). Members of the public that may be more sensitive to visual changes in the vicinity of the project sites include travelers on the designated State Scenic Highways listed below and visitors to the San Joaquin River National Wildlife Refuge. With two exceptions, the Oakdale Office (Site 11) and the Modesto 2 ATC (Site 14), project sites in the San Joaquin Valley are located at existing water system facilities, typically co-located with a power transmission line corridor characterized by large steel lattice towers and cleared ground.

In the western portion of the project area, from the Tesla Treatment Facility Tower (Site 17) to Calaveras Substation (Site 20) (see Figures 1-7 through 1-9), the project sites are located within the California Coast Ranges, which are characterized by generally parallel, northwest-trending valleys and ridges. All three sites in this area are developed with either existing radio towers or a substation.

## Visibility of Project Sites from Scenic Routes

The scenic routes in the project area (as designated by either county or state agencies in the region) are listed below, along with descriptions of the visibility of project sites:

- While there are no officially designated State Scenic Highways in Tuolumne County, SR 49, SR 120, and portions of SR 108 located within Tuolumne County are identified by Caltrans as eligible for State Scenic Highway status.[22] Portions of SR 49, SR 120, and SR 108 are identified as locally designated scenic routes by Tuolumne County (the closest site is Moccasin Peak, located 1 mile to the southwest).[23] They are also considered Scenic Byways by AAA.[24] The project sites are not visible from these scenic routes, due primarily to topographic relationships and distance. While Moccasin Peak itself is visible from SR 49 and SR 120, the project site is not visible because it is on the backside (south) of the peak, and because it is screened by vegetation.

- Interstates I-580 and I-5 (from the Merced County line to its junction with I-580) in San Joaquin County are both designated State Scenic Highways and also considered scenic routes by San Joaquin County for their views of agricultural land to the east and topography to the west (the closest project site is the Tesla Treatment Facility Tower, located 0.8 mile to the northeast).[25,26] Both the Tesla Treatment Facility Tower (Site 17) and the Pelican Cross Over (Site 16) may be visible from I-580, although the Pelican Cross Over is likely to be too distant and small in size to be distinguishable from other visible background elements. Due to its elevated position, the Tesla Treatment Facility site may be visible to drivers on I-580 looking west for a period of up to several minutes from distant views.

- I-5 in Stanislaus County is a designated State Scenic Highway.[27] The Stanislaus County General Plan does not identify any additional local scenic routes beyond those already designated by the state. Based on site reconnaissance, none of the project sites are visible from I-5 in Stanislaus County, due to distance.

- I-680 in Contra Costa and Alameda Counties and Niles Canyon Road in Alameda County are designated State Scenic Highways.[28] The Calaveras Substation (Site 20), located 0.6 mile to the southeast of I-680 and 1½ miles from Niles Canyon Road, is not visible from these roads due to distance, screening vegetation along the highway, and elevation variations. The Sunol Ridge ATC site (Site 19) may be intermittently visible from I-680 due to its elevated position. While the peak of Mt. Diablo may be visible from I-680, the Mount Diablo SBA (Site 18) site is too distant and small in size to be distinguishable from other visible background elements.

### Scenic Vistas, Scenic Resources, and Sensitive Observers

A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated or uninterrupted vantage points that offer panoramic views of great breadth and depth. Scenic vistas may be officially recognized or designated (e.g., within local planning documents or the Caltrans scenic highway program), or they may be informal

[22] Caltrans, 2012. *Officially Designated and Eligible State Scenic Highways*. http://www.dot.ca.gov/hq/LandArch/scenic_highways (accessed on January 17, 2012).
[23] Tuolumne County, 1996. *Tuolumne County General Plan Policy Document*, Circulation Element. Adopted December 26, 1996.
[24] American Automobile Association, 2012. TripTik Travel Planner Scenic Byway Info. http://www.aaa.com (accessed January 23, 2012).
[25] San Joaquin County, 1992. *San Joaquin County General Plan 2010*, Open Space Element. Adopted July 19, 1992.
[26] Caltrans, 2012. *Officially Designated and Eligible State Scenic Highways*. http://www.dot.ca.gov/hq/LandArch/scenic_highways (accessed on January 17, 2012).
[27] Ibid.
[28] Ibid.

in nature (e.g., mountain peaks or coastal bluffs). For the purpose of this analysis, scenic vistas are considered static vista points (such as along a highway), views from a designated scenic highway, or views that are publically accessible and meet the definition of a scenic vista above.

Parks and open space areas in the project vicinity are generally considered to provide high-quality, aesthetically pleasing surroundings, and in some instances may provide access to high-quality scenic vistas. The open space areas outside of the San Joaquin Valley are generally valued for providing high quality views of the natural setting of the Sierra Foothills and Coast Ranges. The Red Mountain Bar (Site 2) and Moccasin Peak (Site 1) sites may be within the viewshed[29] of the Don Pedro Reservoir and the Don Pedro Overlook Trail located on Bureau of Land Management (BLM) land in the Red Hills Area of Critical Environmental Concern (ACEC). The Red Hills ACEC is considered a sensitive area because it is underlain by a large body of serpentinite, which hosts several rare and/or unique plant species. The overlook trail on the west end of the Red Hills ACEC provides elevated, high-quality views of the Coast Ranges and the Don Pedro Reservoir, and thus would be considered a scenic vista. The other sites in the Sierra Foothills, while scenic in nature due to their natural open space setting, are surrounded by private grazing land that is inaccessible to the public. Access to the project sites is limited to infrequently traveled unpaved roadways.

Within the San Joaquin Valley, the only major open space area not occupied by agricultural, utility, or urban land uses is the San Joaquin River NWR, located along the San Joaquin River corridor.[30,31] The San Joaquin Valve House (Site 15) is located on the north side of Maze Boulevard, which forms the northern border of the San Joaquin River NWR. The refuge is primarily used for waterfowl hunting, but also features a wildlife trail (Pelican Trail) and observation platform.[32] Based on site reconnaissance, users of the NWR would not have views of the project sites due to extensive screening vegetation and low elevation differences.

**Impact AE-1: The project would not have a substantial adverse effect on a scenic vista. (Less than Significant)**

This criterion is applicable only to project sites that would be located on or disrupt access to a scenic vista, or that would result in visual changes within its viewshed. The project would be considered to have a substantial adverse effect if it would appreciably damage or remove the visual qualities that make the

[29] A viewshed is the area that is readily visible from a fixed vantage point, in this case from the public areas at the Don Pedro Reservoir and the Overlook Trail.
[30] San Joaquin County, 1992. *San Joaquin County General Plan 2010*, Open Space Element. Adopted July 19, 1992.
[31] USFWS, 2011. San Luis National Wildlife Refuge Complex, Pacific Southwest Region. http://www.fws.gov/sanluis/sanjoaquin_info.htm, updated on March 24, 2011 (accessed on January 25, 2012).
[32] Ibid.

vista or its views unique, unobstructed, and/or exemplary. None of the project sites would be located on or would disrupt access to a scenic vista. Six project sites are potentially within the viewshed of a scenic vista: Moccasin Peak, Red Mountain Bar, Pelican Crossover, Tesla Treatment Facility Tower, Mt. Diablo SBA, and Sunol Ridge ATC. The short-term (construction) and long-term (operation and maintenance) impacts of the project on scenic vistas at these sites are described below. All other project sites are outside the viewshed of a scenic vista (which include scenic highways); therefore, this impact criterion *is not applicable* to these sites.

Project construction activities could affect the viewsheds of scenic vistas, including the viewsheds of scenic highways in the project area; however, construction activities would be temporary, lasting from one to two months in any given location. During construction, the viewsheds from scenic vistas would experience minor visual changes due to the presence of excavated soils, material laydown areas, and the presence of construction equipment (e.g., pickup/delivery trucks, backhoe, trencher, concrete truck and vibrator, sky track forklift, and either a 60-ton or 120-ton crane) within individual project site boundaries. However, these activities would be short-term and barely perceptible because they would occur within background views from the scenic highway corridor identified above in the setting discussion. The open space/agricultural character of the area would remain dominant, and it is unlikely that a casual observer would notice the visual changes associated with the project construction due to the scale and distance. Therefore, impacts from construction activities on scenic vistas during project construction would be temporary and *less than significant*.

Long-term visual changes associated with the project sites within the viewshed of a scenic highway or other scenic vista are generally minor due to viewing relationships (e.g., project site is a minor element in background views), and the low degree of visual change that would occur (e.g., minor addition to existing structure or developed area). Each of the project sites within the viewshed of a scenic highway or other scenic vista is discussed below:

- **Moccasin Peak (Site 1).** Due to its topographic prominence, Moccasin Peak is visible from several of the region's scenic highways and recreational open space areas (including Don Pedro Reservoir and the overlook trail within the Red Hills ACEC). However, due to the typically great distance from which Moccasin Peak is viewed, and the vegetation that surrounds the site, it is unlikely that visual changes on the site would be perceived or noticed by motorists traveling along scenic roadways or recreationalists in the region. Further, the extent of visual change would be negligible, because radio equipment on the Moccasin Peak site would be installed on an existing tower and no new tower would be required. For these reasons, visual impacts to the viewshed from a scenic highway and scenic vistas would be *less than significant*.

- **Red Mountain Bar (Site 2).** Located near the shore of the Don Pedro Reservoir, this site has the potential to be within the viewshed of the Don Pedro Overlook Trail on BLM land located northwest of the site and in the viewshed of recreational boaters. However, the scenic vista impact would occur in the context of a developed site that includes a siphon and valve house associated with the SFPUC water system. The proposed radio equipment would be affixed on a new 20-foot pole mount on the side of the existing building. The installation radio equipment and pole mount, as well as new solar PV panels on the west side of the building, could result in a noticeable visual change for affected viewers. However, the change would be minor in magnitude, adjacent to a developed area, and the general visual setting, as seen from scenic vistas, would remain substantially unaffected. For these reasons, visual impacts to the viewshed from a scenic highway and scenic vistas would be *less than significant*.

- **Pelican Cross Over (Site 16).** While the Pelican Cross Over is technically within the viewshed of I-580, it is likely too distant and small in size to be distinguishable from other visible background elements. Visual changes associated with the site would include installation of new antenna dishes on an existing transmission tower and a microwave radio cabinet at its base. No new tower is proposed. Such visual changes are minor even from close range, and therefore likely to be imperceptible to motorists viewing the site from a distance on the scenic highway. Thus, visual impacts to the viewshed from a scenic highway and scenic vistas would be *less than significant*.

- **Tesla Treatment Facility Tower (Site 17).** Due to its elevated position, the Tesla Treatment Facility Tower site may be visible to drivers on I-580 looking west for a period of up to several minutes from distant views. However, the visual change associated with the site would be minor because microwave dishes would be installed on an existing radio tower monopole. Due to distance and the minor visual changes, motorists on I-580 are unlikely to notice the visible components of either the Tesla Treatment Facility Tower site. Thus, visual impacts to the viewshed from a scenic highway and scenic vistas would be *less than significant*.

- **Mt. Diablo SBA (Site 18) and Sunol Ridge ATC (Site 19).** These sites are far removed from the designated scenic highways in the vicinity; however, due to their topographic prominence, they are within their viewsheds. Both sites are already developed with numerous radio and communications towers. The addition of communications dishes 4- to 6-feet in diameter and small ground-level radio cabinets would involve a minor and imperceptible visual change for motorists on scenic highways. No new towers are proposed. Thus, visual impacts to the viewshed from a scenic highway and scenic vistas would be *less than significant*.

In summary, as seen from the scenic vistas described above in the setting, the visual changes associated with project construction, operation, and maintenance would be *less than significant*.

**Impact AE-2: The project would not 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. (Not Applicable)**

Scenic resources are considered visual features, either natural or built, that positively contribute to the scenic quality of an area. Scenic resources have a distinctive and noticeably positive effect on a viewer's impression of a site or area. Common scenic resources include water, vegetation, trees, landscaping, and landform features that add color, harmony, pattern, and visual variety to the existing scenic setting.

None of the project sites contain scenic resources. Project sites contain existing development and/or structures, or are within an existing enclosed facility. The visual features at these sites, which are generally located within the SFPUC ROW, are consistent with a utility corridor and include the presence of utility facilities, as described in Section B, *Project Setting*. Sites not located in the SFPUC ROW are likewise characterized by the presence of existing communications or substation equipment and paved/disturbed ground. Because none of the sites contain scenic resources, this impact criterion is considered *not applicable* for all project sites.

**Impact AE-3: The project would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant)**

The impact of the project on the visual character and quality of an area is based on the visual sensitivity of an area and the degree of overall visual change introduced by the project. The key factors in determining the overall visual change are visual contrast, dominance, and view blockage. Specifically, an adverse visual impact may occur when an action: (1) perceptibly and substantially changes the existing physical features of the landscape that are characteristic of the region or locale; (2) introduces new features to the physical landscape that are perceptibly uncharacteristic of the region or locale or that become visually dominant from common viewpoints; or (3) blocks or totally obscures aesthetic features of the landscape. The degree of visual impact depends on how noticeable the adverse change is and the related visual sensitivity (discussed above in the setting).

During construction, project sites would experience temporary visual changes due to the presence of excavated soils, material laydown areas, and the presence of conventional construction equipment (e.g., pickup/delivery trucks, backhoe, trencher, concrete truck and vibrator, sky track forklift, and either a 60- or 120-ton crane) within individual project site boundaries. However, these disruptions would be short-term, lasting for a maximum of two months in any given location. For this reason, construction impacts on visual quality and character would be *less than significant*.

Long-term effects on the visual character and quality of project sites and their surroundings are considered to be *less than significant* for the following reasons. Most of the sites are in remote and/or rural areas that generally have low visual exposure to the public due to lack of nearby public roadways, presence of visual screening elements, and/or lack of sensitive observers (i.e., recreationists or residences). As discussed in Impact AE-1, even sites within the viewshed of a scenic vista (including scenic highways) are either too distant or involve such minor visual changes that affected viewers are unlikely to notice or

negatively perceive them. Sites not within the viewshed of a scenic vista are mostly co-located with existing facilities within the SFPUC ROW or with existing radio tower sites, are in remote locations not accessed by the public, and/or would involve minor visual changes (such as addition of radio communication dishes to existing towers or small radio equipment cabinets). The only sites that require further consideration and analysis are those that: (1) are proximal to residential areas, public roadways, or other public viewers; and (2) would require installation of a new radio tower. Long-term visual impacts at projects sites that meet these two conditions are described below:

- **Rock River Lime Plant (Site 4).** The site is located approximately 1,500 feet east of Rock River Road, a paved two-lane rural roadway with low traffic volumes. Because the site is located on a hillside facing the roadway, it has a relatively high degree of visual exposure to motorists on Rock River Road. The site currently contains two large cylindrical water tanks and is characterized by low-growing grasses surrounded by sparse and scattered patchworks of oak woodland. Communication system components proposed on the site include a 140-foot high tower with a radio cabinet at its base and an 8-foot-long waveguide bridge connecting the tower to the cabinet. Installation of the radio tower would introduce a new visual element in easterly views from Rock River Road; the new tower would project above the skyline. However, due to its narrow shape, it would not substantially block or obscure views of the surrounding landscape. Certain motorists might perceive the addition of the new radio tower negatively. However, the number of motorists on the roadway is low, the duration of views of the site is brief, and the new radio tower is proposed adjacent to existing water tanks. Thus, because the landscape is already slightly compromised by existing development, the duration of views is limited, the portion of the view that would be affected is minor, and the number of affected viewers is low, the impact would be *less than significant*.

- **Emery Cross Over (Site 9).** The nearest public roadway to the site is Emery Road, a two-lane rural roadway located approximately 1,500 feet to the west. The only component of the site that would be visible from this road would be a new 120-foot tower with three communication dishes. Motorists on Emery Road would have middleground to background views of the tower for a brief period as they travel along the road. Because the site is at a similar elevation to the road, and the intervening topography is of gently rolling hills, ground-level components of the site (such as the radio cabinet) would not be visible. Views from Emery Road are generally rural in character; however, existing electrical transmission lines cross the road in the vicinity of the project site. Due to the relatively low number of viewers, the brief duration of view, and the presence of existing transmission lines, the proposed improvements at this site would have a *less-than-significant* impact on the visual character and quality of the site and its surroundings.

- **Oakdale Office (Site 11).** This site is located in a mixed use neighborhood of Oakdale, with residential, commercial and industrial uses located nearby. The neighborhood's visual context includes numerous aboveground electrical distribution lines, some privately owned satellite antennas, and the nearby Gilbert Feed agricultural processing facility with tall tanks and silos. All of these visual features are tall, thin, vertical elements that currently introduce visual interruptions into available street views. Existing development at the project site is characteristic of the neighborhood (a small house and warehouse), and does not have visual features that either detract or contribute to the visual appeal or character of the neighborhood. Due to the location of residences in close proximity to the project site, the visual sensitivity of the vicinity is greater than at other more remote sites. While there are no open spaces or parks immediately adjacent to the site, the proposed 60-foot tower would be visible from residences and public roads in the vicinity,

and possibly from parks within ¼ mile of the site, including Dorada Park, Oaklawn Memorial Park, and Clarence E. Wood Park. Due to the location of the proposed tower behind existing buildings, proposed ground-level site components would be out of view. At 60 feet tall, the proposed tower would extend above the top of the adjacent buildings and, as such, would be noticeable and may be negatively perceived by the viewing public. Height perceptions would depend on the perspective of the observer relative to other vertical features. Electrical distribution lines in the vicinity are not as tall, but are located closer to public streets, thereby appearing almost as tall. Whether constructed as a lattice or monopole structure, the proposed tower would not substantially block or obscure aesthetically pleasing views, and would not be visually dominant or perceptibly uncharacteristic of the surrounding area. As such, it would not substantially degrade the existing visual character of the neighborhood. While the visual impact could be considered adverse, it would not exceed the significance threshold of substantially degrading the existing visual quality of the site; therefore, the impact would be *less than significant*.

**Impact AE-4: The project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or that would substantially impact other people or properties. (Less than Significant)**

Construction activities at each of the project sites would occur during the daytime hours (Monday through Friday, 7:00 a.m. to 6:30 p.m.). While typical construction activities would not extend into evening hours, certain circumstances could require construction crews to work into the evening hours, in which case portable lighting may be required. If nighttime lighting is required, portable lighting would only be used intermittently during the construction phase of the project (1 to 2 months, depending on the site), and lighting would be pointed downward toward the construction area rather than being directed onto adjacent properties. For the above reasons, impacts with respect to lighting during construction would be *less than significant*.

None of the project sites would require permanent lighting, and therefore there would be *no impact* with respect to lighting during project operation and maintenance. Regarding potential glare impacts, none of the sites requiring installation of PV panels (Red Mountain Bar, Transmission Tower 122N, Throttle Station 1-3, Throttle Station 2, and MP 56.51) would be adjacent to or near residences or motorists. The sites with proposed PV panels are accessed via unpaved access roads and are not within the view of any paved public roadways. The size and color of the panels has not yet been determined. However, the number of panels would range from 9 to 14; such panels are typically black, charcoal, or dark blue in color; and they are designed to absorb the maximum amount of incoming sunlight. The proposed PV panels are not highly reflective and are not in close proximity to sensitive viewers; therefore, they are not expected to cause adverse effects with respect to glare. The project proposes new radio towers in proximity to either motorists on public roadways or residences at two sites: Emery Cross Over and

Oakdale Office. The towers would be a steel-lattice or monopole type, and thus would not contain continuous flat reflective surfaces and would be expected to weather to a dull finish. For these reasons, the new towers would not produce intense or distracting glare and the impact of the project would be *less than significant*.

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

The geographic scope of potential cumulative impacts on aesthetics encompasses the project sites and viewsheds shared by the SJVCS project and other cumulative projects in the nearby vicinity listed in Appendix A. At sites where only new antennas and appurtenant facilities are proposed (no new towers), the visual changes would be so minor that they would not contribute appreciably to any potential cumulative aesthetic impact. Therefore, this analysis focuses on the potential for the proposed project to contribute to cumulative aesthetic impacts resulting from the proposed construction of new towers. Cumulative projects in the vicinity of Red Mountain Bar (Site 2) and Rock River Lime Plant (Site 4) include two quarry projects and a residential subdivision project. These three cumulative projects are physically separated by topography and would not create visual changes within the same viewshed, and thus would not contribute to a cumulative impact. Other than the SFPUC's SJPL projects, there are no cumulative projects identified within the viewsheds of proposed new tower sites in the San Joaquin Valley: Oakdale Portal (Site 5), Throttle Station 1-3 (Site 6), Throttle Station 2 (Site 7), MP 56.51 Tie-In (Site 8), and Emery Cross Over (Site 9). Construction-related aesthetic impacts due to the SJPL System Project and the Rehabilitation of the Existing SJPL Project would be relatively minor and of limited duration; permanent impacts on visual character of the SJVCS project vicinity would be negligible as most improvements are below ground. Therefore, any cumulative aesthetic impact resulting from the SJPL projects and the proposed project would be less than significant. Numerous cumulative projects identified within the vicinity of the Oakdale Office (Site 11) could cause pronounced visual changes, primarily resulting from the conversion of agricultural land to residential and commercial uses. Because the proposed tower at the Oakdale Office would be constructed within an existing light industrial site, the project would not contribute to a potential cumulative impact related to degradation of the visual character of the site vicinity (*less than significant*).

———————————

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☐ | ☒ |

The project would improve the SFPUC's communications abilities along its regional water system, but would have no effect on the geographic extent or capacity of its existing water supply system, and thus would not induce population growth. The construction workforce would be small and would not require additional housing accommodations, and operation and maintenance of the project would not require any additional workforce. The project would not otherwise displace housing or create additional demand for housing. For these reasons, the CEQA criteria related to population and housing are considered *not applicable* to the project.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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, as well as the potential for disturbance of human remains during construction activities. The assessment of project impacts on cultural resources includes the following steps:

- Identify cultural resources and historical resources within the CEQA-Area of Potential Effects (C-APE).
- Evaluate the legal significance of historical resources, as defined by CEQA Section 15064.5, that may be affected by the project, if applicable.
- Determine whether the project may cause a substantial adverse change to historical resources or on significant cultural resources.

The results of the cultural resources investigations are presented in the *San Joaquin Valley Communication System Upgrade Project - Historic Context and Archaeological Survey Report*[33] and the memorandum *San Joaquin Valley Communication System Upgrade Project – Historical Resources Discussion*.[34] These results are summarized below as they relate to impacts under CEQA.

### *CEQA Area of Potential Effects*

The definition of the C-APE developed by the San Francisco Planning Department's Environmental Planning Division is modeled after the federal Area of Potential Effects definition contained in Title 36 of the Code of Federal Regulations (CFR) 800.16(d). The C-APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historical resources (i.e., California Register of Historical Resources [California Register]-eligible resources), if any such resources exist. The C-APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

The C-APE for the SJVCS project includes all areas of proposed ground-disturbing activity and the immediate vicinity. Work areas and staging areas are also included in the C-APE boundaries. The vertical project footprint includes all areas where potential activity could occur as a result of implementation of the project; the vertical C-APE varies with each project location based anticipated construction activities. For each project component, the estimated excavation depths are 4 to 8 feet for tower foundations and 1 to 2 feet for electrical conduits and grounding. However, the maximum depth of 8 feet will only occur in

[33] Koenig, Heidi, 2012. *San Joaquin Valley Communication System Upgrade Project – Final Historic Context and Archaeological Survey Report*. Prepared for the San Francisco Planning Department and the SFPUC.

[34] Brewster, Brad, 2013. *Memorandum: San Joaquin Valley Communication System Upgrade Project – Revised Historical Resources Discussion*.

small discrete portions of the C-APE, with disturbances in the majority of the C-APE being surficial or shallow in nature.

### *Archaeological and Architectural Background Research*

A literature review was completed to determine what cultural resources studies have occurred at the project sites in relation to other SFPUC projects, including the SJPL project, the San Antonio Backup Pipeline (SABPL) project, and the planned Upper Alameda Creek Filter Gallery (UACFG) project. Following the literature review, it was determined that project locations could be grouped into three categories regarding the level of cultural resources analysis necessary to complete the Historic Context and Archaeological Survey Report and the CEQA documentation.

- **Previously surveyed (9 locations).** These locations were sufficiently surveyed during the SJPL project,[35] the UACFG project,[36] and/or the SABPL project.[37] These include:
    - Oakdale Portal (Site 5)
    - Throttle 1-3 (Site 6)
    - Throttle 2 (Site 7)
    - MP 56.51 Tie-In (Site 8)
    - Emery Cross Over (Site 9)
    - Roselle Cross Over (Site 13)
    - Pelican Cross Over (Site 16)
    - Tesla Treatment Facility Tower (Site 17)
    - Calaveras Substation (Site 20)

- **Previously surveyed – field visit required to assess Finding of Effect for eligible architectural resource (2 locations).** These locations were surveyed during the SJPL project.[38] At these locations, an architectural resource that is eligible for listing in the California Register and National Register of Historic Places (National Register), i.e., a historical resource per CEQA Guidelines Section 15064.5, is located within the C-APE for the proposed SJVCS project. An assessment must be made as to whether the SJVCS project could cause an adverse effect to the historical resources. These project sites are:
    - Albers Road Valve House (Site 12)
    - San Joaquin Valve House (Site 15)

---

[35] URS Corporation, 2009. *San Joaquin Pipeline System Project, Archaeological Survey Report and Finding of Effects*. Prepared for the USACE on behalf of the SFPUC. March 2009.

[36] Koenig, Heidi, 2011. *Upper Alameda Creek Filter Gallery Project, CUW35201, Alameda County, California, Final Historic Context and Archaeological Survey Report.* Prepared for the San Francisco Planning Department and the SFPUC.

[37] Wohlgemuth, Eric and Phillip Kaijankoski, 2009. *Historic Context and Archaeological Survey Report for the San Antonio Backup Pipeline Project, Alameda County, California.* Prepared by Far Western Anthropological Research Group, Inc. for the SFPUC. On file (S-36480), NWIC, 2009.

[38] URS, 2009. *San Joaquin Pipeline System Project, Archaeological Survey Report and Finding of Effects*. Prepared for the USACE on behalf of the SFPUC. March 2009.

- **New location / updated survey – survey required (9 locations).** Consistent with the SJVCS project Archaeological Survey Plan,[39] these locations were surveyed for both archaeological and architectural resources. This includes the following sites:

    - Moccasin Peak (Site 1)
    - Red Mountain Bar (Site 2)
    - Transmission Tower 122 North (Site 3)
    - Rock River Lime Plant (Site 4)
    - Warnerville Substation (Site 10)
    - Oakdale Office (Site 11)
    - Modesto 2 ATC (Site 14)
    - Mount Diablo ATC (Site 18)
    - Sunol Ridge ATC (Site 19)

For the nine project site locations listed above that had not undergone a recent cultural resources analysis, a records search was completed at the California Historical Resources Information System. The records search was conducted at the Northwest Information Center (NWIC) for projects in Alameda and Contra Costa counties on October 24, 2011 (File No. 11-0462) and at the Central California Information Center (CCIC) for projects in San Joaquin, Stanislaus, and Tuolumne counties on October 26, 2011 (File No. 8084 NO). The purpose of the records search was to: (1) determine whether cultural resources have been previously 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.

ESA submitted a sacred lands file search request to the Native American Heritage Commission (NAHC) on November 3, 2011. A response was received on November 7, 2011. A records search of the sacred land file did not indicate the presence of Native American resources in the 20 project C-APEs; however, it was noted that the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any of the project locations. A list of Native American groups and individuals who may have cultural resources in the any of the 20 project C-APEs was provided. On behalf of the San Francisco Planning Department, ESA sent letters to each of the groups and individuals provided by the NAHC. On November 24, 2011, Silvia Burley, Chairperson of the California Valley Miwok Tribe, responded via email and letter that the tribe's only concerns are that "since Miwok Indians regularly lived and traveled through these areas, there is a heightened possibility that historic Miwok artifacts could be found." The tribe

[39] Koenig, Heidi, 2012. *Final CEQA Area of Potential Effects and Archaeological Survey Plan for the San Joaquin Valley Communication System Upgrade Project*. Prepared for San Francisco Planning Department and San Francisco Public Utilities Commission.

requested that it be kept apprised of Miwok artifacts if any are found. ESA placed follow-up telephone calls to all of the other groups and individuals on December 22, 2011. No additional comments were received.

### *Paleontological Background Research*

To determine the rock units underlying each of the project sites, the sites were overlain on a regional geologic map of the San Francisco-San Jose Quadrangle.[40] The paleontological potential of each geologic unit was rated based on its origins and existing records of fossil finds within the same unit.[41] In addition, each project site was categorized in terms of degree of excavation needed to install project components: no excavation, minor grading, and deep excavation (i.e., deeper than 5 feet). This was based on the existing site conditions (i.e., bare ground or paved), as well as on whether a new tower would be needed. This information was used to determine the potential for each site to cause adverse impacts to paleontological resources.

## Setting

### *Prehistoric Background*

Archaeologists have developed individual cultural chronological sequences tailored to the archaeology and material culture of each subregion of California. Each of these sequences is based principally on the presence of distinctive cultural traits and stratigraphic separation of deposits. Fredrickson[42] initially divided human history in central California into three broad periods: the Paleoindian period, the Archaic period, and the Emergent period. This scheme used sociopolitical complexity, trade networks, population, and the introduction and variations of artifact types to differentiate between cultural periods. New radiocarbon dates are used by Rosenthal et al.,[43] who have divided human history in central California into five broad periods: Paleoindian (11,550 to 8500 B.C.), Lower Archaic (8550 to 5550 B.C.), Middle Archaic (5550 to 550 B.C.), Upper Archaic (550 B.C. to A.D. 1100), and Emergent (A.D. 1100 to the historic-period). Economic patterns, stylistic aspects, and regional phases further subdivide cultural

[40] CGS, 1991. *Regional Geologic Map of the San Francisco-San Jose Quadrangles*, prepared by D. L. Wagner, E. J. Bortugno, and R. D. McJunkin, CGS Map No. 5A.

[41] University of California Museum of Paleontology, 2012. Paleontological Collections Database. http://ucmpdb.berkeley.edu/loc.html (search performed on February 23, 2012).

[42] Fredrickson, D. A., 1974. "Cultural Diversity in Early Central California: A View from the North Coast Ranges," in *Journal of California Anthropology* 1(1):41–53.

[43] Rosenthal, Jeffrey S., Gregory C. White, and Mark Q. Sutton, 2007. "The Central Valley: A View from the Catbird's Seat," in *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp 147-163, Altamira Press, Lanham Maryland.

periods into shorter phases. This scheme uses economic and technological types, sociopolitics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

### *Ethnographic Context*

From east to west, the 20 project sites are located in regions occupied by three distinct ethnographic groups. The eastern project sites are within what was recorded ethnographically as territory of the Central Sierra Me-Wuk. The name "Me-Wuk," from Central Sierra Me-Wuk *miwü* (person), was an appellation of ethnographers and had little meaning to Me-Wuk speakers, in that they did not consider themselves a single group. They were, instead, separate, independent tribelets who together shared common language and culture.[44]

At the time of European contact, the San Joaquin Valley was inhabited by the Northern Valley Yokuts. Because of the early decimation of the aboriginal populations in the San Joaquin Valley, most information regarding the Northern Valley Yokuts is gleaned from translated accounts by the Spanish military and missionaries.[45] Northern Valley Yokuts territory is defined roughly by the crest of the Diablo Range on the west and the foothills of the Sierra Nevada on the east. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills approximately 500 years ago.

The westernmost portion of the project is located in the Ohlone tribal territory.[46] These people were collectively referred to by ethnographers as Costanoan, but were actually distinct sociopolitical groups that spoke at least eight languages of the same Penutian language group. The Ohlone occupied a large territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south.

### *Historic Context*

Lieutenant Gabriel Moraga left the Mission San Jose on September 21, 1806, and was the first European to enter the San Joaquin Valley to explore the Californian interior in search of suitable locations for missions. During his exploration, Moraga named the Stanislaus River, which was later used to designate the county.

---

[44] Levy, R., 1978. "Eastern Miwok," in *California*, edited by R.F. Heizer, pp. 398–413. *Handbook of North American Indians*, Volume 8. William G. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

[45] W. J. Wallace, 1978. "Northern Valley Yokuts," in *California*, edited by R.F. Heizer, pp. 462–470. *Handbook of North American Indians*, Volume 8. William G. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

[46] Levy, R., 1978. "Costanoan," in *California*, edited by R.F. Heizer, pp. 485–495. *Handbook of North American Indians*, Volume 8. William G. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

In 1827, Euro-American trappers, including Jedediah Strong Smith, began to enter the region to hunt the fur-bearing animals that inhabited the Central Valley. Settlement of the valley was aided by the issuing of land grants, with Spanish, and later Mexican, governors giving settlers large sections of land to use for farming and raising cattle. Prior to the Gold Rush, the San Joaquin Valley was devoted to grazing and hunting, as immense herds of cattle and some horses roamed the valley.[47]

With the resulting influx of population resulting from the discovery of gold in 1848, the production of food was needed to support the miners, and the San Joaquin Valley was developed to become an agricultural resource. Some of the miners, disappointed in the search for gold, turned to farming in the fertile swamp lands in the San Joaquin Valley.

### Brief History of the Spring Valley Water Company and the Hetch Hetchy Water System

The origins of San Francisco's water system lie with the Spring Valley Water Company (SVWC), which was established in 1865 with the consolidation of two of San Francisco's first water suppliers: the San Francisco Water Works and the Spring Valley Water Works. The SVWC, a private utility company, began with a modest network of pipes that tapped a natural spring within San Francisco and used reservoirs to store and flumes to carry water throughout the city. The Spring Valley system expanded south along the San Francisco Peninsula in the 1870s with the establishment of more extensive watersheds and large reservoirs that increased the supply of water for the city. Although the City of San Francisco attempted to purchase and municipalize the utility company many times over the years, the SVWC remained private and continued to expand until the 1930s. Its system included facilities on the south and east sides of the San Francisco Bay, extending as far east as the Sunol Valley.[48]

The San Joaquin pipelines and their associated valve houses are a part of the Hetch Hetchy system, which was planned and developed by the City and County of San Francisco (CCSF) to create a municipal water source. The Hetch Hetchy water system was the result of the Raker Act of 1913, which granted water and power resource rights-of-way on the Tuolumne River in Yosemite National Park to San Francisco, the right to dam the Hetch Hetchy Valley as a reservoir, and the potential right of municipalized electricity for the city. Construction of Hetch Hetchy Dam, ancillary water storage structures, the CCSF's extensive

[47] Hoover, M. B., H. E. Rensch, E. G. Rensch, and W. N. Abeloe, 2002. *Historic Spots in California.* Revised by Douglas E. Kyle. Palo Alto, CA: Stanford University Press.

[48] San Francisco Planning Department, 2009. *Final Environmental Impact Report on the San Joaquin Pipeline System Project*. July 9, 2009.

water conveyance system, and its power plant at Moccasin proceeded over several decades, from 1913 into the late 1930s.[49]

Construction began on the Early Intake Powerhouse on the Tuolumne River in 1917 to provide electricity for the O'Shaughnessy Dam construction site. To assure continuous operation of the powerhouse, a dam was built on Eleanor Creek to supplement the natural flow of water from Cherry Creek. The Lake Eleanor Dam was the first one constructed for the Hetch Hetchy system. In 1923, the electric powerhouse at Moccasin Creek was completed, where Hetch Hetchy water was diverted through giant turbine generators. While the transmission lines were being built, the CCSF agreed to sell the electricity from Moccasin to PG&E. By 1925, transmission lines had been strung all the way to the South Bay.[50]

In 1925, the Mountain Tunnel from Early Intake to Priest Reservoir above Moccasin was completed; this tunnel provided water to the Moccasin Powerhouse. The tunnel was drilled through solid granite, with a design capacity of 470 million gallons of water per day. From 1925, construction continued westward, including the Foothill Tunnel completed in the late 1920s. Ground broke for the San Joaquin Pipeline (SJPL) No. 1 in 1931, with SJPL Nos. 2 and 3 completed in the 1950s and 1960s, respectively. At the same time improvements were being completed in the Sierra; the Coast Range Tunnel was completed in January 1934, followed by the Bay Pipelines, which were built in the 1920s and improved through the 1970s.[51]

Provided below are brief histories of the valve houses constructed along various points of the SFPL route which are relevant to the proposed project. Numerous other facilities were constructed contemporaneously with the SJPLs, but as no physical alterations to them are proposed as part of this project, they are not discussed here.

The Oakdale Portal facility connects the Foothill Tunnel with SJPL Nos. 1, 2, and 3. The facility is comprised of the Oakdale Portal manifold and associated three valve houses (east, middle, and west). The Oakdale Portal facility including the Middle Valve House (Valve House No. 1) was initially completed in 1932 in association with SJPLs No. 1. The Eastern Valve House (Valve House No. 2) was built in 1953 in association with SFPL No. 2, and the Western Valve House (Valve House No. 3) was constructed in 1968 in association with SFPL No. 3.[52] All three valve houses function to shelter and

[49] Ibid.
[50] Ibid.
[51] Carey and Co., 2009. *San Joaquin Pipeline System Project, Historic Resources Inventory and Evaluation Report*. Prepared for the USACE on behalf of the SFPUC. March 2009.
[52] Ibid

provide access to valves situated that control the flow of water through the pipelines. The Middle and East Valve Houses have retained sufficient historic integrity and have been recommended eligible for the California and National Registers under Criterion A/1; however, these valve houses are outside of the C-APE for the project. The Western Valve House, which is within the C-APE, is less than 45 years old and is not significant for its association with the development of the Hetch Hetchy water system and does not appear to possess the exceptional importance required for a recently constructed resource to be eligible for listing in the National Register under Criteria Consideration G or the California Register.[53]

The Albers Road Valve House was constructed in 1950 in association with SFPL No. 2, and functions to shelter and provide access to valves situated along SJPL No. 2 that control the flow of water through the pipeline.[54]

The San Joaquin Valve House was first constructed in 1932 in association with SJPL No. 1. It similarly functions to shelter and provide access to valves situated along the SJPL No. 1. The valve house was modified in 1950 corresponding to the construction of SJPL No. 2, at which time a reinforced concrete valve house was added to its north façade to shelter automatic pressure relief valves.[55]

**Impact CP-1: The 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. (Less than Significant)**

This section discusses historical resources of the built environment (i.e., structures, buildings, objects, and districts). A discussion of archaeological resources, including those that qualify as historical resource as defined in *CEQA Guidelines* Section 15064.5, is provided in Impact CP-2, below.

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

[53] Ibid
[54] Ibid
[55] Ibid

The results of the records search and field survey indicate that there are two previously recorded historical resources in the C-APE that could be affected by the project at the following sites: Albers Road Valve House and San Joaquin Valve House.

### Albers Road Valve House (Site 12)

The Albers Road Valve House is eligible for the California and National Registers under Criterion A/1 at the local level due to its association with the development of the San Francisco water system, which is significant for influencing the growth and prosperity of the San Francisco Bay Area. Specifically, the Albers Road Valve House, constructed in 1950, was identified as eligible as a significant component of the San Joaquin Pipeline No 2. The Albers Road Valve House retains a high level of all aspects of historic integrity and is considered a historical resource.[56]

The Albers Road Valve House is a one-room, one-story building with a rectangular plan. The building is poured board-formed concrete building clad in stucco with a gable roof clad in red clay tile. There is also a decorative molding located just under its roofline. The building has a wood-paneled entry door on its east side and steel sash windows on the front and rear sides that are covered by decorative metal grilles. The main façade's upper wall has a raised panel similar to the water system's other valve houses. A historic photograph shows that it was originally inscribed with lettering that read "San Francisco Hetch Hetchy Water Supply" and the construction date. The lettering has since been stuccoed over. The Albers Road Valve House's character-defining features were identified as its small-scale rectangular plan, red clay tile roof, stucco cladding, and metal window grilles. The property boundary is the approximately 60-foot-long by 50-foot-wide chain link fence that surrounds the structure. Attached to the south façade is a non-original 15-foot-high steel pole, about 4 inches in diameter, with an antenna on the top.

Project components at the Albers Road Valve House site would consist of installation of two 4-foot-diameter microwave dishes on an existing electrical transmission tower across Albers Road from the valve house. At the valve house, the existing 15-foot-high metal pole attached to the building would be replaced with a 20-foot-high pole of similar dimensions and materials. A 2-foot-diameter dish would be attached to the top of the new pole, replacing the antenna in this location.

[56] Carey and Co., 2009. *San Joaquin Pipeline System Project, Historic Resources Inventory and Evaluation Report*. Prepared for the USACE on behalf of the SFPUC. March 2009.

The current setting at the Albers Road Valve House includes structures associated with the operations of the facility, as well as an existing 15-foot pole mounted on the south-facing wall of the building. Replacing the existing pole and antenna with one that is 5 feet taller and a dish would not alter the setting to an extent that would be considered a significant impact to the historical resource. None of the property's character-defining features, such as the small-scale rectangular plan, red clay tile roof, stucco cladding, or metal window grilles, would be affected. As the project would not alter any of this property's character-defining features, no significant impacts to historical resources are anticipated.[57]

### San Joaquin Valve House (Site 15)

The San Joaquin Valve House is eligible for the California and National Registers under Criterion A/1 at the local level due to its association with the development of the San Francisco water system, which is significant for influencing the growth and prosperity of the San Francisco Bay Area. Specifically, the San Joaquin Valve House, constructed in 1932 and modified in 1950, was identified as eligible as a significant component of the San Joaquin Pipelines Nos. 1 and 2. The San Joaquin Valve House also retains a high level of all aspects of integrity, except for setting due to the modern construction surrounding the building. The building is considered a historical resource.[58]

The San Joaquin Valve House is relatively large, compared with other valve houses of the regional water system. It is a one-story building with a complex plan and a flat roof. The building is constructed of reinforced concrete clad in stucco. Architectural detailing includes a high base around the perimeter walls and slightly overhanging eaves. There is a below-grade entry at one side of the building, accessed by stairs and covered by a metal cage structure. Its character-defining features were identified as its flat roof, stucco cladding, water table, and slightly overhanging eaves. Its boundary is the irregularly shaped chain-link fenced compound that surrounds the structure. The fence's perimeter measures 705 feet.

Project components at the San Joaquin Valve House consist of dish installation on an existing transmission tower, which is located approximately 50 feet northeast from the building. A microwave radio cabinet of approximately 4 square feet would be installed near the tower. Additional components would include a waveguide bridge from the tower to the radio cabinet and an underground electrical

[57] Brewster, 2013. *Memorandum: San Joaquin Valley Communication System Upgrade Project – Revised Historical Resources Discussion*.

[58] Carey and Co., 2009. *San Joaquin Pipeline System Project, Historic Resources Inventory and Evaluation Report*. Prepared for the USACE on behalf of the SFPUC. March 2009.

conduit from the radio cabinet to the valve house. A small opening at the base of the valve house would be created to receive the conduit into the interior of the building, near the location of existing conduit leading into the base of the building.

The current setting at the San Joaquin Valve House includes structures associated with the operations of the facility. Dish installation on an existing tower as well as ancillary facilities would not alter the setting to an extent that would be considered a significant impact to the historical resource. The project would have no significant effect on the property's character-defining features, such as its flat roof, stucco cladding, water table, or slightly overhanging eaves. A small opening at the base of the valve house near existing conduit openings would be made to allow for electrical conduit from the radio cabinet to be inserted into the valve house. This opening would be relatively small (approximately 4 inches in diameter) and would not result in a substantial alteration to the stucco cladding or water table. As the project would not substantially alter this property's character-defining features, no significant impacts to historical resources are anticipated.[59]

Overall, project impacts to historical resources at the Albers Road Valve House and San Joaquin Valve House project sites would be relatively minor, and therefore *less than significant*, as they would not demolish or substantially alter the character-defining features of any of these resources.

**Impact CP-2: The 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)**

CEQA requires that a project's effects on an archaeological resource shall be taken into consideration and that if a project might affect an archaeological resource, it shall first be determined whether the archaeological resource is a "historical resource"; that is, whether the archaeological resource meets the criteria for listing in the California Register. To be eligible for listing in the California Register under Criterion 1, 2, or 3, an archaeological site must contain artifact assemblages, features, or stratigraphic relationships associated with important events, or important persons, or that are exemplary of a type, period, or method of construction.[60] To be eligible under Criterion 4, an archaeological site must show the

[59] Brewster, 2013. *Memorandum: San Joaquin Valley Communication System Upgrade Project – Revised Historical Resources Discussion*.

[60] CEQA Guidelines Section 15064.5(a)(1) and (3) and (c)(1) and (2).

potential to yield important information.[61] An archaeological resource that qualifies as a "historical resource" under CEQA generally qualifies for listing under Criterion 4 of the California Register.[62] An archaeological resource may qualify for listing under Criterion 4 if the resource has the potential to significantly contribute to questions of scientific/historical importance. The research value of an archaeological resource can only be assessed within the context of its historical background and prior archaeological research related to the property type represented by the resource. The results of the records search at the NWIC and the CCIC indicate that there are no previously recorded archaeological resources in the 20 project C-APEs. Background research indicates that 11 of the project sites have been previously surveyed during recent projects also completed for the SFPUC. No archaeological resources were located at those locations within the SJVCS C-APE.

An ESA Registered Professional Archaeologist surveyed the remaining 9 project locations on November 30, December 1, and December 21, 2011. One project location (Sunol Ridge ATC) was not accessible; however, the project components at that location consist solely of installing a dish on an existing tower. No archaeological resources were identified within the C-APE of the 8 project locations surveyed.

Seventeen of the project C-APEs are located on geologic landforms that have a low potential to contain archaeological resources that have been buried by natural processes such as alluvial deposition. While three C-APEs are located in Holocene-age alluvial deposits, previous ground disturbance from construction of the SJPL and associated facilities have lessened the potential that intact buried resources would be present. There is, however, the potential that modern disturbances have obscured archaeological resources.

While no archaeological resources were identified during the background research and surface surveys, the potential to accidentally discover archaeological resources cannot be entirely discounted at project sites where ground disturbance would occur. In the event that unanticipated archaeological resources are encountered during project construction, implementation of **Mitigation Measure CP-2~~1~~, Accidental Discovery of Archaeological Resources** would ensure that impacts to archaeological resources (either historical resources or unique archaeological resources) would be reduced to a *less-than-significant* level.

[61] U.S. Department of the Interior, 1995. *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preservation, Rehabilitation, Restoration, and Reconstruction*.
[62] CEQA Guidelines Section 15064.5 (a)(3)(D).

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

For **all project sites**, the following mitigation measure is required to avoid any potential adverse effect from the project on accidentally discovered buried or submerged historical resources as defined in *CEQA Guidelines* Section 15064.5(a)(c). The SFPUC shall distribute the San Francisco 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, and pile driving) 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, and supervisory personnel. 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 meeting the Secretary of Interior standards for archaeology. 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 subject to review by the ERO. The ERO may also require that the SFPUC immediately implement a site security program if the archaeological resource is at risk from 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 describes 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 NWIC shall receive one copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the San Francisco Planning Department shall receive one bound copy, one unbound copy, and one unlocked searchable PDF copy on CD of the FARR, along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the California or Registers. 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 project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (Less than Significant with Mitigation)**

Any construction activity involving subsurface soil excavation has the potential to disturb or destroy paleontological resources. However, the probability for impacts to paleontological resources depends on both the paleontological potential of the underlying geology and the magnitude and depth of excavation that would be required at any one site. As largely buried resources, the exact location or presence of fossils within unexposed and undisturbed geologic units cannot be determined, but the relative likelihood of encountering fossils can be estimated based on the paleontological potential of the rock unit. The Society of Vertebrate Paleontology has established criteria for rating the paleontological potential of rock units,[63] indicating that rock units where fossil resource have not been recovered in the past have a low paleontological potential; this would include igneous and most volcanic rocks, due to their subsurface or high temperature origin. Rock units where vertebrate fossils or significant suites of invertebrate fossils have been recovered in the past (anywhere within their geographic extent) are generally considered as having a high paleontological potential. This generally includes most sedimentary rock units dating older than Holocene (i.e., more than 10,000 years old) that have not been substantially metamorphosed.[64]

Impacts on paleontological resources would be *less than significant* at sites underlain by geologic units of low paleontological potential, or where only minor excavation or grading would occur (i.e., sites that do not require a new tower). At these sites, the probability of encountering fossil resources is extremely low due to either excavations limited to the top 2 feet of soil or the site's low paleontological potential. This includes all but four of the project sites: Throttle 2, MP 56.51 Tie-in, Emery Cross Over, and Oakdale Office. Impacts on paleontological resources at the remaining 16 project sites would be *less than significant*.

Impacts on paleontological resources at the Throttle 2, MP 56.51 Tie-in, Emery Cross Over, and Oakdale Office sites would be *potentially significant* due to excavation beyond minor grading into units of high paleontological potential (pre-Holocene age sedimentary rock units). At these sites, excavation depths would be a maximum of 8 feet, although the volume of excavation would be relatively minor (i.e., 18 to 96 cubic yards) compared to other large development, tunneling, or long-distance trenching projects that more typically encounter fossils. Such small-scale excavations, even in geological units of high paleontological potential, have a low probability of encountering fossils. Even though fossil discoveries would be unlikely

[63] Society of Vertebrate Paleontology, 1995. Assessment and mitigation of adverse impacts to nonrenewable paleontologic resources: standard guidelines, Society of Vertebrate Paleontology News Bulletin, Vol. 163, p. 22-27.

[64] Altered under high heat and pressure over millions of years.

at these sites, insufficient information exists to make a definitive conclusion that no fossils would be encountered in the course of project related excavations. Because the uniqueness or significance of a fossil locality is unknown until it is identified to a reasonably precise level, any fossil discovery should be treated as potentially unique or significant until determined otherwise by a professional paleontologist.[65] For this reason, **Mitigation Measure M-CP-3, Unanticipated Discovery Measures for Paleontological Resources** shall be implemented at the Throttle 2, MP 56.51 Tie-in, Emery Cross Over, and Oakdale Office sites to ensure that any unanticipated fossil finds are adequately assessed for their significance by a trained professional, and recovered, if appropriate. This measure would reduce the potential impact to a *less-than-significant* level.

> **Mitigation Measure M-CP-3: Unanticipated Discovery Measures for Paleontological Resources**
>
> At the **Throttle 2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office** sites, if construction crews discover fossils or fossil-like material during excavation and earth-moving operations, all earthwork and other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified paleontologist, as defined by Society of Vertebrate Paleontology guidelines, can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the qualified paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and activities occurring on the site. If treatment and salvage is required, recommendations will be consistent with Society of Vertebrate Paleontology guidelines[66] and currently accepted scientific practice. If required, treatment for fossil remains may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report describing the finds. The paleontologist's recommendations shall be subject to review and approval by the ERO or designee. The SFPUC and/or its contractor will be responsible for ensuring that treatment is implemented. If no report is required, the SFPUC and/or its contractor will nonetheless ensure that information on the nature, location, and depth of all finds is readily available to the scientific community through university curation or other appropriate means.

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

Under state law, human remains and associated burial items may be significant resources in two ways: (1) they may be significant to descendent communities for patrimonial, cultural, lineage, and religious reasons; and (2) they may be important to the scientific community, such as prehistoric archaeologists

[65] Scott and Springer, 2004. CEQA and Fossil Preservation in California, AEP Spring 2004 CEQA Workshop Series, p. 5, *The Environmental Monitor*. Fall 2004.

[66] Society of Vertebrate Paleontology, 1996. Conditions of Receivership for Paleontologic Salvage Collections, Society of Vertebrate Paleontology News Bulletin, Vol. 166, p. 31-323. February 1996.

and physical anthropologists. CEQA and state regulations concerning Native American human remains provide procedural requirements to assist in avoiding potential adverse effects to human remains within the contexts of their value to both descendants and the scientific community.

The background research and surface survey did not indicate the presence of archaeological resources in the 20 project C-APEs, including archaeological resources that could contain human remains. Because the project entails ground disturbance, it is possible, although unlikely, that undiscovered burials could be encountered during construction at locations of ground-disturbing activities. Although the likelihood is remote at sites where only minor grading or excavation would occur, this impact is considered *potentially significant* at all project sites. Implementation of **Mitigation Measure M-CP-4, Unanticipated Discovery Measures for Human Remains, 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.

> **Mitigation Measure M-CP-4: Unanticipated Discovery Measures for Human Remains, Associated or Unassociated Funerary Objects**
>
> For **all project sites**, the treatment of human remains and of associated or unassociated funerary objects discovered during any soils-disturbing activity shall comply with applicable state laws. Such treatment would include immediate notification of the applicable county Coroner and, in the event of the Coroner's determination that the human remains are Native American, notification of the NAHC who shall appoint a Most Likely Descendant (Public Resources Code [PRC] Section 5097.98). The archaeological consultant, SFPUC, and Most Likely Descendant shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects [(CEQA Guidelines Section 15064.5(d)]. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. If the Most Likely Descendant and the other parties cannot agree on the reburial method, the SFPUC shall follow Section 5097.98(b) of the PRC, which states that "the landowner or his or her authorized representative shall 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." All archaeological work performed under this mitigation measure shall be subject to review by the ERO or designee.

**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 geographic scope of potential cumulative impacts on cultural resources encompasses the project sites and nearby vicinities. All cumulative projects identified in the vicinity (see Appendix A) are assumed to cause some degree of ground disturbance during construction and thus contribute to a potential

cumulative impact on buried cultural resources. Projects that could contribute to cumulative effects on historic architectural resources are primarily other SFPUC projects in the vicinity, such as the SJPL System Project, the Roselle Crossover Rehabilitation Project, and the SABPL Project.

Proposed alterations at the Albers Road Valve House and San Joaquin Valve House, in conjunction with other SFPUC projects, would not result in a significant cumulative impact on historical resources because the changes to architectural features are relatively minor.

Background research and site surveys suggest that the potential to encounter archaeological and paleontological resources or human remains for the SJVCS project would be low; however, the proposed project would have the potential to affect unknown resources should they be present in the project area. In combination with other cumulative projects, the potential for a cumulative impact is significant without mitigation. With implementation of mitigation measures M-CP-2 (Accidental Discovery of Archaeological Resources), M-CP-3 (Unanticipated Discovery Measures for Paleontological Resources) and M-CP-4 (Unanticipated Discovery Measures for Human Remains), the proposed project's contribution to the potential cumulative impact would be less than cumulatively considerable (*less than significant with mitigation*).

---

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☒ | ☐ |

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☒ | ☐ | ☐ |

Project sites would be located throughout the counties of Tuolumne, Stanislaus, San Joaquin, Contra Costa, and Alameda, which have established level-of-service (LOS) standards implemented by their respective congestion management agencies (CMAs). The CMAs (Tuolumne County Transportation Commission, Stanislaus Council of Governments, San Joaquin Council of Governments, Contra Costa County Transportation Authority, and Alameda County Transportation Commission) have LOS standards and documented Congestion Management Plans (CMPs) that are intended to regulate long-term traffic impacts due to future development and do not apply to construction projects. The project would require periodic operation and maintenance (e.g., site cleaning and inspection, washing of PV panels) similar to existing facilities. However, project operations would not result in a change in vehicle trips over an extended period of time. Because the project would not generate long-term traffic, consideration of LOS impacts on CMP roadways or local roadways during operation of the project components is not applicable. Therefore, significance criterion 5b above is *not applicable* and is not discussed further.

The study area for transportation and circulation consists of a network of regional and local (paved and unpaved, generally with two travel lanes) roadways primarily within the San Joaquin Valley. These roadways would be used by construction workers' vehicles and other construction vehicles, including trucks that would transport construction equipment and materials, to access work sites for the construction of new radio towers and the installation of microwave radio antennas, generators, and PV solar panels.

Although the majority of project sites would be located in rural or isolated areas not served by or accessible by transit, the Roselle Cross Over and Modesto 2 ATC sites are located near transit facilities. The Stanislaus Regional Transit (StaRT) Bus Route 60 operates weekday and Saturday bus service along SR 108, but with

no bus stops adjacent to any of the project sites.[67] Modesto Area Express Bus Routes 33 and 36 operate daily fixed-route bus service along Carpenter Road and Blue Gum Road in Modesto, and include two bus stops directly south of the Modesto 2 ATC site.[68]

There are no bicycle or pedestrian facilities in the proximity of, or adjacent to, the project sites, except for raised concrete sidewalks located in and around the Oakdale Office, Roselle Cross Over and Modesto 2 ATC sites.

The transportation impacts identified below allow for a general assessment of the nature and magnitude of potential impacts associated with the construction of each proposed facility. The final construction scheduling of specific facilities could result in traffic impacts related to concurrent (or overlapping) construction activities. Thus, traffic generation is described for individual facilities and for potential concurrent construction. Because most of the transportation impacts associated with construction would be specific to the work sites, impacts associated with concurrent construction would be limited to construction-generated traffic using the same roads due to the relative proximity of the project work sites.

Operations and maintenance activities associated with each project facility would require minimal periodic monitoring and maintenance, and would require no additional staffing. Therefore, there would be no increase in long-term vehicle trips to the sites once the project is completed and fully operational. Because the project would not result in an increase in long-term trips relative to existing conditions, impacts to traffic congestion on affected roadways would be negligible and are not included in the assessment of transportation impacts, as discussed below.

**Impact TR-1: The project would not 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. (Less than Significant)**

The project facilities would span multiple jurisdictions, with each county and city enforcing rules, regulations, and requirements pertaining to operation and maintenance of the transportation network within its respective jurisdiction. The SFPUC would coordinate with, and be guided by, the general plan

[67] Stanislaus Regional Transit, 2012. Bus Transit Timetable – Route 60 Modesto-Riverbank-Oakdale. http://www.srt.org/fixed_route_schedules.htm (accessed February 1, 2012).

[68] Modesto Area Express, 2011. Bus Transit Timetable – Route 30 and 36, effective August 2011.

goals and policies established by such entities.[69] Specific objectives and policies applicable to the project include discouraging the use of truck traffic through sensitive areas and enforcing the use of haul truck routes within Stanislaus County (Goal 1-Policy 5, Measure 3); continued utilization of designated routes for the movement of trucks and other freight vehicles throughout Tuolumne County (Policy 2.A.f); regulation of the movement of truck traffic and hazardous materials throughout the City of Riverbank (Policy CIRC-4.1); and avoiding conflicts with circulation and all users of the roadway in Contra Costa County (Policy 5-13). In addition to these local policies, the SFPUC would be required to adhere to federal regulations outlined in 49 CFR, which address safety considerations for the transport of goods, materials, and substances, and govern the transportation of hazardous materials, including types of materials and marking of the transportation vehicles.[70] On a statewide level, any state facilities that are used as access routes by construction workers and construction vehicles are subject to regulations established by the California Department of Transportation (Caltrans). Caltrans requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance.[71] State highways that are likely to be used as access routes by construction vehicles to the various project sites include: I-5, I-680, I-580, I-205, SR 84, SR 99, SR 108, SR 120, SR 49 and SR 132.

Each work site would generate up to approximately 12 one-way trips per day by up to five construction workers, accounting for commute and miscellaneous midday trips. Truck traffic would include deliveries of materials/equipment (including tower steel, PV panel material, new facility equipment, grading equipment, and other miscellaneous deliveries) to each site. The number of trucks would vary depending on the construction needs of each project site, as some of the project sites would require excavation and haul trucks to export spoils offsite. As stated in the Project Description, seven of the project sites would require excavation, ranging between 18 and 96 cubic yards per site, for the new tower foundations. Based on these estimates and assuming each haul truck can accommodate up to 10 cubic yards of spoils, the project would generate between two and 10 truckloads (between four and twenty one-way truck trips) for one or two days at the sites with new towers. The projected low number of deliveries required for each site would result in low levels of truck trips (a few per day at most) on area roadways.

---

[69] Alameda County, 2008. *Alameda County Strategic Vision*.
City of Modesto, 2008. *City of Modesto Final Urban Area General Plan*. Adopted October 14, 2008.
City of Oakdale, 1994. *City of Oakdale 2015 General Plan*. Adopted January 1994.
City of Riverbank, 2009. *City of Riverbank General Plan Update 2005-2025*. Adopted April 2009.
Contra Costa County, 2005. *Contra Costa County General Plan 2005-2020*. Adopted January 2005.
San Joaquin County, 1992. *San Joaquin County General Plan*, Transportation Element. Adopted 1992.
Stanislaus County, 2008. 1994 *Stanislaus County General Plan*, Circulation Element. Revised December 2008.
Tuolumne County, 1996. *Tuolumne County General Plan*, Circulation Element. Adopted December 26, 1996.

[70] 49 CFR: Transportation. Office of the Secretary of Transportation. http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&tpl=/ecfrbrowse/Title49/49tab_02.tpl (accessed February, 1, 2012).

[71] Caltrans, 2010. *California Manual on Uniform Traffic Control Devices for Streets and Highways*. Amended January 21, 2010.

The duration of construction at each project site would vary depending on the planned improvements; however, the total construction period of the project is anticipated to commence in early 2014 and take between 12 and 15 months. Construction activities are expected to occur primarily during daytime hours (7:00 a.m. to 6:30 p.m.), five days a week (Monday through Friday); however, construction activities could occur during the evening hours, depending on scheduling and construction needs. Staging of construction equipment, machinery, materials, and worker vehicles would be onsite or within appropriate easements or construction corridors. No construction staging would occur within public ROWs (e.g., state highways, local roadways) or in other public or private properties. Project construction would not occur within public roadways or travel lanes, and therefore would not reduce the roadway capacity on roads that provide access to the project sites.

Operation of the proposed facilities at each project site would require periodic inspection and maintenance (e.g., cleaning and inspection of site area and components). No additional staff would be required to perform operations and maintenance activities; therefore, the project would not generate any operational traffic or haul truck traffic during these activities.

### Increased Traffic Impacts

Construction at each project site would result in short-term increases in vehicle trips on area roadways. The number of construction-related vehicle trips would vary each day, depending on the type of project component, construction phase, planned activity, and material needs. The addition of construction traffic to the current roadway volumes, without increasing roadway capacity, could result in increased congestion and delays for vehicles, including public transit (see above for a description of public transit service in the project site areas). The impact of construction vehicle traffic on local and regional roadways would vary by time of day, number and type of construction-related vehicles, number of travel lanes on the affected roadways, and existing traffic volumes on these roadways. Impacts of construction traffic would be most noticeable on roadways in the immediate vicinity of the project work sites and less noticeable on regional roadways (with their higher capacity) and local roadways farther away from the sites (as project trips disperse over the road network). In addition, because construction activities would occur concurrently at various sites, construction activities could cause a compounded increase in traffic volumes and could worsen traffic conditions along affected roadways. However, the current schedule for project work at each site (see Figure 3 in Section A, *Project Description*) indicates relatively limited overlapping (concurrent) work at sites proximate to each other.

As stated, construction activities would occur primarily during the daytime hours (7:00 a.m. to 6:30 p.m.). Worker trips to the work sites would occur prior to the a.m. peak traffic hour, but would occur during the p.m. peak traffic hour. Truck trips would be spread over the course of the 11-hour work day. Based on the above-described estimated traffic generation for each project site and the current project schedule, and the reasonable assumptions that the workers' residences would be spread among several cities throughout multiple counties, and project trips would be dispersed on different roads, traffic associated with concurrent construction activities at project sites would represent less than 1 percent of existing traffic volumes on regional roads. While project traffic would be more noticeable on local two-lane roads than regional roads, the increased traffic volumes would remain at levels less than the carrying capacity of those local roads (which is about 10,000 to 15,000 vehicles per day). Impacts related to a temporary increase in traffic volumes on area roadways would be *less than significant.*

### Public Transit Impacts

With respect to project construction effects on existing bus transit services, as described above, most work sites do not have buses operating on nearby roads. Modesto Area Express bus routes 30 and 36 operate along Carpenter Road and Blue Gum Avenue, which generally bound the Modesto 2 ATC Site, with bus stops adjacent to the project site. In addition, StaRT Bus Route 60 operates on SR 108 through the cities of Riverbank and Oakdale. The short-term modest traffic increases that would occur on these roadways during project construction would not substantially disrupt transit service, and the impacts related to alternative modes of transportation would be *less than significant*. Overall, the project's potential impacts to transportation and circulation (e.g., effects on traffic flow, access and safety) in the project areas would be *less than significant*.

**Impact TR-2: The project would not 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. (Less than Significant)**

The Oakdale Airport is located in the vicinity of three project sites. It is situated approximately 1 mile north of Warnerville Yard, 2½ miles southeast of Oakdale Office, and 2½ miles west of Emery Cross Over. No new tower is proposed at Warnerville Yard. The construction of a new 60-foot tower at Oakdale Office and a 120-foot tower at Emery Cross Over project sites could cause an obstruction to flight patterns and result in substantial safety risks if the project were constructed without proper notification and implementation of any required safety features. The project would not affect air traffic patterns at the remaining project sites, and therefore would have *no impact* at those sites.

FAA Regulations Part 77 (14 CFR 77) establish height restrictions for development within approach and take-off patterns to allow aircraft maneuvering room and to ensure that neither the operating capability of the airport nor the usable runway is adversely affected by obstructions in the surrounding airspace. The FAA has an established height restriction of 150 feet for objects within 5,000 feet from the end of each runway. In addition, the FAA has notification requirements for construction within the vicinity of airports, which require that the FAA be notified of any construction or alteration greater in height than the distance from the closest runway divided by 100, out to a distance of 20,000 feet. For any such projects, the FAA requires submission of a Notice of Proposed Construction or Alteration (Form 7460). The FAA will determine whether the project will create a hazard to navigable airspace and issue either a Determination of No Hazard or a Notice of Presumed Hazard.

The FAA's Obstruction Evaluation/Airport Airspace Analysis website[72] contains a notice criteria tool to assist with determining whether the FAA must be notified based on a number of factors: height, proximity to an airport, location, elevation, and frequencies. Based on preliminary screening of proposed project tower locations with this tool, the SFPUC would be required to notify the FAA and request approval prior to commencing construction of the proposed towers at Oakdale Office and Emery Cross Over. The FAA could require marking or lighting of the towers prior to approval. If a proposed tower would cause an obstruction to air traffic, the FCC will not license the radio tower, and therefore it would not be constructed. Due to the distance from the Oakdale Airport and proposed tower heights, it is anticipated that the project would not create a hazard to navigable airspace. With an FAA Determination of No Hazard, the safety hazards resulting from construction and operation of the project in proximity to the Oakdale Municipal Airport would be *less than significant*. The project would not affect air traffic patterns at the remaining project sites, and therefore would have *no impact* at those sites.

**Impact TR-3: The project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. (Less than Significant)**

Implementation of the project and its facilities would neither change the road network nor introduce incompatible uses, but could cause potential traffic safety hazards due to: (1) conflicts where construction vehicles access a public ROW from the project site(s); or (2) increased truck traffic in general (and their slower speeds and wider turning radii) during construction. Traffic safety hazards could also occur where delivery and haul trucks share the roadway with other vehicles.

[72] FAA, 2012. Notice Criteria Tool. https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm (accessed February 27, 2012).

As described in Impact TR-1, above, the increase in daily traffic volumes resulting from construction traffic generated by each individual project site would not be substantial relative to the background traffic volumes on roads used to access those project sites (i.e., generally an increase of less than 1 percent of existing traffic volumes). Thus, due to the limited volume of construction traffic, potential adverse traffic safety hazards for vehicles on public roadways during construction activities would be *less than significant*.

**Impact TR-4: The project would not result in inadequate emergency access. (Less than Significant)**

Construction staging areas and construction activities would occur onsite, with no roadway or lane closures. Primary access to each project site would be from existing public roadways or unpaved service roads. For project sites located in non-rural locations or locations adjacent to existing buildings (e.g., Oakdale Office, Roselle Cross Over, and Modesto 2 ATC sites), slow-moving trucks could result in temporary impeded access to land uses and cross-streets for both general and emergency vehicles in the vicinity of the work sites. However, because the construction-related increases in truck traffic would be temporary and small in relation to the existing traffic volumes, the impacts to access (and to emergency access in particular) would be *less than significant*.

**Impact TR-5: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)**

Construction of the project would neither directly nor indirectly eliminate existing or planned alternative transportation facilities (e.g., bicycle/pedestrian paths, bicycle lanes, bus routes, sidewalks). In addition, construction activities associated with the planned facilities would not include changes in policies or programs that support alternative transportation. In addition, as described under Impact TR-1, temporary increases in traffic volumes on area roadways would not substantially affect traffic flow and circulation, including that of public transit vehicle. As such, the project impact to alternative transportation would be *less than significant*.

**Impact C-TR: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in cumulative transportation and circulation impacts. (Less than Significant)**

The geographic scope of potential cumulative impacts related to transportation includes local roads and regional freeways in the vicinity of the project area. The temporal scope of cumulative traffic impacts

would be limited to the construction period because proposed project operation and maintenance would have a negligible effect on transportation and circulation. Project construction would result in less-than-significant impacts on traffic and circulation due to the short duration of construction at each project site, the distance between project sites, and the low number of vehicle and truck trips associated with construction. Construction and operation of other projects in the site vicinity (see Appendix A) would generate additional traffic; however, the traffic levels are not anticipated to substantially reduce the capacities of local roadways. Accordingly, no significant cumulative impact would result from the cumulative scenario to which the project's incremental impact could contribute.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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 project sites are not located in the vicinity of a private airstrip. In addition, the project would not include development of noise-sensitive facilities that would be affected by existing noise levels. Therefore, significance criteria 6f and 6g above are *not applicable*. Project implementation would result in temporary increases in construction noise in the vicinity of project sites, as well as occasional noise

increases from operation of two 8.5-kW LPG-powered emergency generators for testing/maintenance and during power outages.

## Noise Descriptors

Sound is a phenomenon that occurs in a medium (such as air or water), and the manner in which sound travels through this medium is influenced by the physical properties of the medium (such as temperature, density, humidity). The amount of energy in the sound is proportional to the pressure it generates in the medium. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by more than 1 million times within the range of human hearing, a logarithmic scale is used to keep sound pressure measurements within a convenient and manageable range. Because 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 A-weighted decibel, dBA, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented in this section are expressed in terms of dBA unless otherwise indicated. **Table 4** shows some representative noise sources and their corresponding noise levels in dBA.

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines are as follows: noise levels above 35 dBA can disturb sleep; noise levels of 60 dBA begin to interfere with human speech; prolonged exposure to noise levels greater than 85 dBA can damage hearing.[73]

Variations in noise exposure over time 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 Leq measured over a 24-hour period. 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 p.m. to 10 p.m.) and a 10-dBA

[73] USEPA, 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Condensed Version). Washington D.C. (EPA/ONAC 550/9-74-004).

**TABLE 4**
**TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT**

| Examples of Common, Easily Recognized Sounds | A-Weighted Decibels (dBA) | Subjective Evaluations |
|---|---|---|
| Near Jet Engine | 140 | Deafening |
| Threshold of Pain | 130 | |
| Threshold of Feeling – Hard Rock Band | 120 | |
| Accelerating Motorcycle (at a few feet away) | 110 | |
| Loud Horn (at 10 feet away) | 100 | Very Loud |
| Noisy Urban Street | 90 | |
| Noisy Factory | 85[a] | |
| School Cafeteria with Untreated Surfaces | 80 | Loud |
| Lawnmower | 70[b] | |
| Near Freeway Auto Traffic | 60[b] | Moderate |
| Average Office | 50[b] | |
| Soft Radio Music in Apartment | 40 | Faint |
| Average Residence without Stereo Playing | 30 | |
| Average Whisper | 20 | Very Faint |
| Rustle of Leaves in Wind | 10 | |
| Human Breathing | 5 | |
| Threshold of Audibility | 0 | |

[a] Continuous exposure above 85 dBA is likely to degrade the hearing of most people.
[b] Range of speech is 50 to 70 dBA.

SOURCE: U.S. Department of Housing and Urban Development, 1985. The Noise Guidebook. Office of Community Planning and Development http://www.hud.gov/offices/cpd/environment/training/guidebooks/noise/index.cfm (accessed January 16, 2012).

penalty during nighttime hours (10 p.m. to 7 a.m.). Another 24-hour noise descriptor, called the day-night noise level (Ldn), is similar to CNEL. Both CNEL and Ldn add a 10-dBA penalty to all nighttime noise events between 10 p.m. and 7 a.m., but 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. Lmax is the maximum, instantaneous noise level registered during a measurement period.

People in residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and some outdoor recreation areas are generally more sensitive to noise than people at commercial and industrial establishments. Consequently, the noise standards for these sensitive land uses are more stringent than those for less sensitive uses. In general, residences and schools are among the land uses considered most sensitive to noise. No schools, childcare centers, churches, hospitals, or nursing homes

are located in the vicinity of the project area. However, there are residential uses located in proximity to some of the project sites, as described in Table 3 in Section B, *Project Setting*.

### Vibration Descriptors

Vibrations caused by construction activities can be interpreted as energy transmitted in waves through the ground. Vibration attenuates as a function of the distance between the source and receptor. Vibration emanating from a single location (a "point source") attenuates at a rate of approximately 50 percent for each doubling of distance from the source (termed the "inverse square law"). This calculation tends to underestimate attenuation, and therefore provides a "worst-case" estimate of vibration at the receptor.

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is used to assess the potential for damage to buildings and structures and is expressed in inches per second (in/sec). In general, threshold damage[74] to residential buildings can occur at vibrations greater than 0.5 in/sec PPV for transient or intermittent vibration and 0.4 in/sec PPV for continuous vibration.[75] A much higher threshold of 4.0 in/sec PPV is applied to buried facilities such as pipelines.[76]

The responses of human receptors and structures to vibration are influenced by a combination of factors, including soil/rock type, distance from the source, duration, and the number of perceived events. Energy transmitted through the ground as vibration can reach levels that cause structural damage; however, humans are very sensitive, and the vibration amplitudes that can be perceived by humans are well below the levels that cause architectural or structural damage. A freight train passing at 100 feet can result in vibrations of 0.1 in/sec PPV, while a strong earthquake can produce vibration in the range of 10 in/sec PPV.

---

[74] For the purpose of this analysis, threshold damage is defined as the level of vibration above which cosmetic damage to structures could occur. This criterion provides a conservative approach to assessing the potential for structural damage, which would occur at higher vibration levels than the threshold for cosmetic damage.

[75] Wilson, Ihrig & Associates, Inc., 2008. *Vibration Criteria – New Irvington Tunnel Memo.* Prepared for Baseline Environmental and Jones & Stokes. December 9, 2008. "Transient" vibration is typically less than 20-second duration per occurrence and occurs infrequently, while "intermittent" vibration is typically 20 seconds or less per occurrence and occurs several times per hour on a regular basis. "Continuous" occurs when vibratory construction methods, such as a vibratory compactor or vibratory pile driver, are employed.

[76] Vibration below ground surface is lower than that measured at ground surface. A threshold of 4.0 in/sec PPV is commonly used for underground optical-fiber cables. Underground or restrained concrete structures can withstand vibration of 10.0 in/sec PPV before threshold cracks appear. Thus, underground utilities are less sensitive than surface structures (WIA, 2009. *Crystal Springs Pipeline No. 2, Noise and Vibration Study, Impacts and Mitigation Technical Memo.* Prepared for the ESA+Orion Joint Venture. September 24, 2009). The 4.0 in/sec PPV threshold is consistent with thresholds recommended by *Standard Recommended Practice for Evaluation of Transportation-Related Earthborne Vibrations* (American Association of State Highway and Transportation Officials, 2004).

In general, cosmetic or threshold damage to residential buildings can occur at vibrations over 0.5 in/sec PPV. The Federal Transit Administration (FTA) recommends a vibration threshold criterion of 0.2 in/sec for fragile buildings[77]. Much lower vibration levels (exceeding 0.012 in/sec PPV) can cause disturbance or annoyance, and this threshold is typically applied to construction activities during the more sensitive nighttime hours. Exceedance of the annoyance threshold at night could result in sleep disturbance, depending on the receptors' proximity to construction activities. Based on the types of construction equipment proposed to be used for this project (i.e., no pile drivers), vibration is expected to be a concern only within approximately 25 feet of construction activities. Since all adjacent structures are located more than 25 feet from project construction activities, there are no vibration-sensitive receptors identified for this project.

**Impact NO-1: The project would not result in exposure of persons to or generation of noise levels in excess of standards established in local general plans or noise ordinances, or applicable standards of other agencies. (Less than Significant)**

The project would involve the development of new towers or improvements at existing towers at 20 locations in Tuolumne, Stanislaus, San Joaquin, Alameda, and Contra Costa counties. There are 5 project sites in Tuolumne County, 11 in Stanislaus County (including 1 in the city of Riverbank and 1 in the city of Modesto), 1 in San Joaquin County, 1 in Contra Costa County, and 2 in Alameda County.

Project construction has the potential to result in short-term noise increases that could be in excess of local noise ordinances and standards. Local ordinances regarding construction time and any applicable noise limits are presented in **Table 5**. In San Joaquin County and the cities of Riverbank and Modesto, the local ordinance exempts construction noise from specific noise limits, as long as the construction is conducted within the time limits specified in Table 5. In addition, the noise ordinances of Stanislaus and San Joaquin counties and the cities of Riverbank and Modesto include an exemption from specific time and noise limits for construction on publicly owned land or construction conducted by a public utility.

Construction hours at all project sites are proposed to be weekdays from 7:00 a.m. to 6:30 p.m. Such construction hours would be consistent with all ordinance time limits. Weekend or evening construction could occasionally occur, as permissible by local ordinances. Therefore, no conflicts with local ordinances would occur during project construction. The impact would be *less than significant*.

[77] U.S. Department of Transportation, Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. DTA-VA-90-1003-06, May 2006. Available online at http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>.

**TABLE 5**
**PERTINENT ORDINANCE TIME LIMITS AND NOISE STANDARDS**

| Jurisdiction | Construction Time Limits | | | Noise Limit for Construction Occurring Within Time Limits |
|---|---|---|---|---|
| | Weekdays | Saturdays | Sundays | |
| Tuolumne and Stanislaus Counties[a] | – | – | – | – |
| San Joaquin County[b] | 6 a.m. to 9 p.m.[b] | 6 a.m. to 9 p.m.[b] | 6 a.m. to 9 p.m.[b] | None[c] |
| Alameda County[d] | 7 a.m. to 7 p.m. | 8 a.m. to 5 p.m. | 8 a.m. to 5 p.m. | None |
| Contra Costa County[e] | Daytime work hours | – | – | None |
| City of Riverbank | 6 a.m. to 6:30 p.m.[f] | 8 a.m. to 5 p.m.[f] | 8 a.m. to 5 p.m.[f] | None[g] |
| City of Modesto | 7 a.m. to 9 p.m.[h] | 9 a.m. to 9 p.m.[h] | 9 a.m. to 9 p.m.[h] | None[i] |

NOTES:

– Not Specified.

[a] Stanislaus County Municipal Code, Chapter 10.46 exempts construction activities on or in publicly owned properties and/or facilities from noise-level restrictions.
[b] San Joaquin County Development Code, Title 9, Section 9-1025.9(c)(3).
[c] San Joaquin County Development Code, Title 9, Section 9-1025.9(c)(7) exempts noise sources associated with work performed by a public utility in the maintenance or modification of its facilities.
[d] Alameda County Municipal Code, Section 6.60.070(E).
[e] Policy 11-8 of the Contra Costa County General Plan (Contra Costa County, 2005 [second reprint July 2010]) states that construction activities shall be concentrated during the hours of the day that are not noise sensitive for adjacent land uses, and should be commissioned to occur during normal (daytime) work hours to provide relative quiet during the more sensitive evening and early morning periods.
[f] City of Riverbank Municipal Code, Section 93.07(c).
[g] City of Riverbank Municipal Code, Section 93.07(g) exempts noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.
[h] City of Modesto Municipal Code, Title 4, Chapter 9, Article 4-9.103.
[i] City of Modesto Municipal Code, Section 4.9-104(d) exempts activities on or in publicly owned properties and facilities from being declared to be a "public nuisance" or "loud and raucous noise."
[j] City of Oakdale Municipal Code does not specify construction noise restrictions.

Operation of the proposed radio communication and solar power facilities would not result in any permanent increase in ambient noise levels in the vicinity of project sites. However, operation of the proposed 8.5-kW LPG-powered emergency generators would generate noise levels of up to 65 dBA at 23 feet[78] at Transmission Tower 122N (Tuolumne County) and MP 56.51 Tie-In (Stanislaus County).

Operation of emergency generators would be occasional, limited to power outages and periodic testing that would occur during daytime hours. Emergency generators at the Transmission Tower 122N and MP 56.51 Tie-In sites would not produce a substantial increase in ambient noise levels that would result in adverse noise impacts because no noise-sensitive receptors are located near these two project sites, and thus would not conflict with any applicable noise standards. The impact would be *less than significant*.

[78] Kohler Power Systems, 2009. Model: 8.5/12RES, Multi-Fuel LP Vapor/Natural Gas Specifications.

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

Groundborne noise refers to a condition where noise is experienced inside a building or structure as a result of vibrations produced outside of the building and transmitted as ground vibration between the source and receiver. Groundborne noise can be problematic in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing in close proximity to homes or other noise-sensitive structures. However, noise and vibration-generating construction activities associated with the project would not involve tunneling or underground construction, but instead would use techniques that generate airborne noise and surface vibration. Therefore, no impacts related to groundborne noise from construction activities are expected occur *(no impact)*. Groundborne noise is therefore not discussed further in this document; the discussion below relates to impacts from groundborne vibration.

Construction of project facilities could cause vibration that would disturb local residents and/or cause cosmetic damage to nearby buildings and structures. As described above, this analysis applies significance thresholds related to cosmetic damage to buildings of 0.5 in/sec PPV for transient or intermittent vibration and 0.4 in/sec PPV for continuous vibration. For buried utilities, the analysis uses a higher threshold of 4.0 in/sec PPV. Typical vibration levels associated with the operation of various types of construction equipment at 25 feet, some of which are similar to those proposed to be used for this project, are listed in **Table 6**.

**TABLE 6**
**VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT**

| | Peak Particle Velocity (PPV) (in/sec) |
|---|---|
| **Equipment** | **At 25 Feet[1]** |
| Large Bulldozer | 0.089 |
| Loaded Trucks | 0.076 |
| Small Bulldozer | 0.003 |

[1] Vibration amplitudes for construction equipment assume normal propagation conditions.

SOURCE: FTA, 2006. Transit Noise and Vibration Impact Assessment, DTA-VA-90-1003-06. May 2006. U.S. Department of Transportation. http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf (accessed February 1, 2012).

As indicated in Table 6, project-related construction activities would generate vibration levels well below the 0.5-in/sec PPV and 0.4-in/sec PPV vibration thresholds for buildings and 4.0-in/sec PPV vibration threshold for buried utilities, respectively, even if two pieces of equipment (e.g., bulldozer and truck, or two trucks, or two bulldozers) were both operating 25 feet from a structure. Since all adjacent structures

are located more than 25 feet from project construction activities, construction-related vibration levels would be less than those listed in Table 6. Therefore, vibration effects on adjacent or nearby residences and other buildings or structures would be *less than significant.*

Operation of radio communication equipment and solar power facilities would not cause vibration, and therefore, would have *no impact*. Any vibration associated with operation of the backup generators would be imperceptible and therefore, vibration effects would be *less than significant.*

**Impact NO-3: The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)**

Operation of the proposed antennas and PV facilities would not generate noise and would not result in any permanent increase in ambient noise levels in the vicinity of any project sites. However, operation of the two 8.5-kW LPG-powered emergency generators would generate noise levels of 65 dBA at 23 feet at the following project sites: Transmission Tower 122N (Tuolumne County) and MP 56.51 Tie-In (Stanislaus County).

Operation of emergency generators would be occasional, limited to power outages and periodic testing (during the day). Emergency generators at the Transmission Tower 122N and MP 56.51 Tie-In sites would not produce a permanent increase in ambient noise levels due to the limited periodic operation, and would not result in adverse noise impacts because no noise-sensitive receptors are located near those two project sites. Therefore, occasional operation of proposed emergency generators at these sites for testing and power outages would be *less than significant*.

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

Construction activities are expected to occur primarily from Monday through Friday, 7:00 a.m. to 6:30 p.m., but could occasionally extend into the evening hours or weekends so work could be completed on a specific component. No nighttime (i.e., 10 p.m. to 7 a.m.) construction activities are proposed. To address this CEQA significance criterion, a "substantial" temporary noise increase is defined as an increase in noise to a level that causes interference with land use activities at nearby sensitive receptors during the day and evening. One indicator that construction noise could interfere with daytime or evening activities would be speech interference.

Speech interference is an indicator of impact on typical daytime and evening activities. The analysis uses a speech interference threshold,[79] in the context of impact duration and time of day, to identify substantial increases in noise resulting from temporary construction activities. For this analysis, a significant impact would result if exterior noise levels at a sensitive receptor remained above the 70-dBA speech interference threshold on consecutive days for longer than two weeks.[80]

The types of construction equipment that would be used for the project are listed in **Appendix B**. These types of equipment (i.e., backhoe, trucks, crane) typically generate maximum noise levels of 74 to 81 dBA (Lmax) at 50 feet.[81] When such maximum levels are adjusted for typical usage factors (percent of time equipment is actually operating over the day), the adjusted maximum noise levels would be 70 and 77 dBA (Leq) at a distance of 50 feet from the source. A reference noise level of 77 dBA (Leq) at 50 feet would exceed the 70-dBA speech interference threshold within 115 feet of a sensitive receptor. As indicated in Section B, *Project Setting*, Table 3, noise-sensitive receptors are located closer than 115 feet from 2 of the 20 project sites—specifically the Oakdale Office and Roselle Crossover project sites. Project activities at the remaining 18 project sites would not result in significant, adverse noise effects due to the absence of nearby sensitive receptors or construction noise levels that would not exceed the 70-dBA speech interference threshold at the closest sensitive receptors for longer than 10 consecutive work days; the impact at these sites would be a *less than significant*.[82] Since construction activities at the Oakdale Office and Roselle Crossover sites could occur within 115 feet of the closest sensitive receptors, construction noise levels could exceed the 70-dBA speech interference threshold at the closest sensitive receptors. However, such noise increases would not occur for more than 10 consecutive work days; therefore, construction noise impacts at these sites would also be *less than significant.*

There would be a temporary increase in truck noise along haul/delivery routes to the project sites. However, the low number of deliveries and limited excavation would result in no more than 20 truck

---

[79] Noise peaks generated by construction equipment could interfere with speech at nearby private residences if the noise levels in the building interiors exceed 45 to 60 dBA. Because a typical building can reduce noise levels by 25 dBA with the windows closed, an exterior noise level of 70 dBA (Leq) at a sensitive receptor would maintain an acceptable interior noise environment of 45 dBA if windows remain closed at all times (USEPA, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974).

[80] Construction would take place during warm weather (summer and fall) when houses without air conditioning typically have windows open for cooling. Construction-related noise could exceed the speech interference criterion inside homes if windows were open. Construction noise increases would result in a significant noise impact if windows were to remain closed for longer than two consecutive weeks in order to maintain acceptable interior noise levels.

[81] U.S. Department of Transportation, Federal Highway Administration (FHWA), *Construction Noise Handbook*. Available online at http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm, updated July 5, 2011.

[82] The Modesto 2 ATC Lease site is located adjacent to the Modesto Junior College campus, but the closest classrooms are located more than 600 feet away.

trips per day passing in close proximity to any adjacent receptors. Further, the maximum volume of truck trips would be limited to 1 to 2 days. Since any noise increase from passing trucks would be temporary and occasional, noise impacts from this noise source are considered to be *less than significant.*

**Impact NO-5: The project would not expose people residing or working within the Oakdale Airport land use plan area to excessive noise levels. (No Impact)**

The project is located within the land use plan area of the Oakdale Airport.[83] Three project sites are within the plan area: Oakdale Office, Warnerville Yard, and Emery Cross Over. Following construction, no additional workers would be located on these project sites, and no additional residences would be added. Therefore, the project would not result in the exposure of workers or residents near the Oakdale Airport to excessive noise levels and there would be *no impact*.

**Impact C-NO: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would result in less-than-significant cumulative noise impacts. (Less than Significant)**

Noise and vibration impacts of the proposed project would be limited to the project sites and their immediate vicinities; therefore, the geographic scope of potential cumulative noise and vibration impacts encompasses the immediate vicinity of the 20 project sites. There would be no operational noise impacts associated with this project (Impacts NO-1 and NO-3) and, therefore, the project would not contribute to any cumulative impacts associated with long-term noise increases.

Temporary increases in project-related construction noise (Impact NO-4) could exceed the 70-dBA speech interference threshold at the closest sensitive receptors within 115 feet of two project sites: Oakdale Office and Roselle Cross Over. If these increases occur at the same time as any construction-related noise increases from cumulative projects located nearby, there would be a potential for cumulative, temporary noise levels to exceed the 70-dBA speech interference threshold at the closest sensitive receptors. However, since the project's noise increases at these locations would not occur for longer than 10 consecutive work days, cumulative noise increases would also not occur for more than 10 consecutive work days. Therefore, any potential cumulative noise impact would be *less than significant*.

During project construction, there would be a potential for cumulative noise increases on local roadways if construction-related truck traffic were generated by cumulative projects and the proposed project on the same delivery/haul/access routes at the same time. However, because the number of truck

[83] Stanislaus County, 2004. *Airport Land Use Commission Plan*, May 20, 2004.

delivery/haul trips associated with construction at each project site would be minimal, the project's contribution to any cumulative noise increases on local or regional roadways due to overlapping construction traffic would be less than cumulatively considerable (*less than significant).*

Similar to cumulative construction noise impacts, there would be a potential for cumulative increases in vibration if large construction equipment such as large bulldozers and vibratory compactors were operated in close proximity to the project site and any adjacent structure (within approximately 15 feet, depending on the type of equipment in use[84]). Because there are no adjacent structures that are located within 15 feet of both project sites and the cumulative projects listed in Appendix A, any cumulative construction-related vibration impact on adjacent or nearby buildings or structures would be *less than significant.*

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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 air quality analyses were conducted in accordance with guidelines and significance thresholds of the various air districts with jurisdiction over the areas in which the proposed project facilities are located. Both temporary (construction-related) and long-term (associated with operation of two 8.5-kW LPG-powered emergency generators) air quality impacts are addressed.

[84] San Francisco Planning Department, *Mitigated Negative Declaration, Rehabilitation of the Existing San Joaquin Pipelines,* Case No. 2007.1129E. November 2, 2010.

## Background

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic air drainage features. The project sites are located in three of these regional air basins: the Mountain Counties Air Basin (MCAB), San Joaquin Valley Air Basin (SJVAB), and San Francisco Bay Area Air Basin (SFBAAB). The MCAB is located over the western portion of the Sierra Nevada Mountains, including most of the Sierra Nevada foothills. The SJVAB, the second largest air basin in the state, is defined by the Sierra Nevada mountains to the east, the Coast Range mountains to the west, and the Tehachapi Mountains to the south. The SJVAB is a "bowl" that opens to the north at the Carquinez Strait, where the San Joaquin–Sacramento Delta empties into San Francisco Bay.[85] The SFBAAB lies west of the Coast Ranges. In the Bay Area, the Coast Range mountains split into western and eastern ranges, and San Francisco Bay lies between the two ranges. Air flows into the SFBAAB from the west at the Golden Gate and then flows out of the SFBAAB to the east at the Carquinez Strait (where it enters the SJVAB).

## Regulatory Framework

### *Federal Standards*

The 1970 Clean Air Act (last amended in 1990, 42 United States Code 7401 et seq.) requires regional planning and air pollution control agencies to prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the specified deadlines. The ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above the ambient air quality standards before adverse health effects are observed.

[85] SJVAPCD, 2002. Guide for Assessing and Mitigating Air Quality Impacts, Technical Document, Information for Preparing Air Quality Sections in EIRs, Planning Division, Mobile Source/CEQA Section. January 10, 2002. http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Tech%20Doc%20Jan%202002%20Rev.pdf (accessed January 25, 2012).

### *State Standards*

The Clean Air Act Amendments of 1970 established the National Ambient Air Quality Standards (NAAQS or federal standards), and individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own State Ambient Air Quality Standards (SAAQS or state standards) when federal standards were established, and because of the unique meteorological problems in California, there is considerable diversity between the state and federal standards, as shown in **Table 7**. The state standards tend to be at least as protective as federal standards and are often more stringent.

### *Attainment Status*

In 1988, California passed the California Clean Air Act (California Health and Safety Code Section 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on the state standards rather than the federal standards.

Project facilities are proposed to be located in counties under the jurisdiction of the Tuolumne County Air Pollution Control District (TCAPCD), San Joaquin Valley Air Pollution Control District (SJVAPCD), and BAAQMD. **Table 8** identifies the proposed project sites by air district.

**Table 7** presents a summary of the MCAB's, SJVAB's and SFBAAB's attainment status with respect to the federal and state standards. As indicated in the table, the MCAB is designated as "nonattainment" for state and federal ozone[86] standards and unclassified for the state $PM_{10}$ (particulate matter, less than 10 microns in diameter) standards, since no $PM_{10}$ data are available for this area. The SJVAB is designated as "severe nonattainment" for the state 1-hour ozone standard; "nonattainment" for the state ozone 8-hour standard; "extreme nonattainment" for the federal 8-hour ozone standard; and "nonattainment" for the state $PM_{10}$ standard and both the state and federal standards for $PM_{2.5}$ (fine particulate matter, less than 2.5 microns in diameter). The SJVAB is designated as "attainment" for all other criteria pollutants listed in Table 7. The SFBAAB is designated as either in attainment[87] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and $PM_{10}$, for which these pollutants are designated as non-attainment for either the state or federal standards (Table 7).

---

[86] Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NOx).

[87] "Attainment" status refers to those regions that are meeting federal and/or state standards for a specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

**TABLE 7**
**STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS**

| Pollutant | Averaging Time | (State) SAAQS[a] | | | | (Federal) NAAQS[b] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard | MCAB Attainment Status | SJVAB Attainment Status | SFBAAB Attainment Status | Standard | MCAB Attainment Status | SJVAB Attainment Status | SFBAAB Attainment Status |
| Ozone ($O_3$) | 1 hour | 0.09 ppm | **N** | **N/Severe** | **N** | NA | – | – [c] | – [c] |
| | 8 hour | 0.07 ppm | **N** | **N** | **N** | 0.075 ppm | **N** | **N/Extreme** | **N** |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | A | A | A | 35 ppm | U/A | U/A | A |
| | 8 hour | 9 ppm | A | A | A | 9 ppm | U/A | U/A | A |
| Nitrogen Dioxide ($NO_2$) | 1 hour | 0.18 ppm | A | A | A | 0.1 ppm[d] | U/A | NA | U |
| | Annual | 0.03 ppm | A | A | NA | 0.053 ppm | U/A | U/A | A |
| Sulfur Dioxide ($SO_2$)[e] | 1 hour | 0.25 ppm | A | A | A | 0.075 ppm | NA | NA | A |
| | 24 hour | 0.04 ppm | A | A | A | 0.14 ppm | U | U/A | A |
| | Annual | NA | NA | NA | NA | 0.03 ppm | U | U/A | A |
| Particulate Matter ($PM_{10}$) | 24 hour | 50 μg/m³ | U* | **N** | **N** | 150 μg/m³ | U* | A | U |
| | Annual arithmetic mean | 20 μg/m³ | U* | **N** | **N** | NA | – | – | – |
| Fine Particulate Matter ($PM_{2.5}$) | 24 hour | NA | NA | NA | NA | 35 μg/m³ | U/A | **N** | **N** |
| | Annual | 12 μg/m³ | U* | **N** | **N**[f] | 15 μg/m³ | U/A | **N** | A |
| Sulfates | 24 hour | 25 μg/m³ | A | A | A | NA | – | – | – |
| Lead[g] | 30 day | 1.5 μg/m³ | A | A | – | NA | – | – | A |
| | Quarter | NA | NA | NA | NA | 1.5 μg/m³ | ND | ND | A |
| | Rolling 3 month average | NA | - | - | - | 0.15 μg/m³ | U/A | U/A | U/A |

NOTES: A = attainment; **N** = nonattainment; U = unclassified; NA = not applicable, no applicable standard; ND = no designation; ppm = parts per million; μg/m³ = micrograms per cubic meter. – = not indicated or no information available.
*Tuolumne County is unclassified due to a lack of data.

[a] SAAQS = State Ambient Air Quality Standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the $PM_{10}$ annual standard), some measurements may be excluded. In particular, measurements are excluded that the CARB determines would occur less than once a year on average.

[b] NAAQS = National Ambient Air Quality Standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.075 ppm (775 ppb) or less. The 24-hour PM10 standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 μg/m³. The 24-hour PM2.5 standard is attained when the three-year average of 98th percentile is less than 35 μg/m³. National air quality standards are set by U.S. Environmental Protection Agency (EPA) at levels determined to be protective of public health with an adequate margin of safety.

[c] The USEPA revoked the national 1-hour ozone standard on June 15, 2005.

[d] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

[e] On June 2, 2010, the USEPA established a new 1-hour sulfur dioxide (SO2) standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 national standards must continue to be used, however, until one year following USEPA initial designations of the new 1-hour SO2 national standard. The USEPA expects to designate areas by June 2012.

[f] The USEPA designated the SFBAAB as nonattainment of the PM2.5 standard on October 8, 2009. The effective date of the designation is December 14, 2009, and the BAAQMD has three years to develop a State Implementation Plan (SIP) to demonstrate that the SFBAAB will achieve the revised standard by December 14, 2014. The SIP for the new $PM_{2.5}$ standard must be submitted to the USEPA by December 14, 2012.

SOURCES: CARB, 2012. Standards and Area Designations. http://www.arb.ca.gov/desig/desig.htm (accessed January 26, 2012).
BAAQMD, 2012. Air Quality Standards and Attainment Status. http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm (accessed January 24, 2012).
SJVAPCD, 2012. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm (accessed January 24, 2012).

**TABLE 8**
**PROJECT SITES BY AIR DISTRICT**

| Jurisdictional Air District | Project Site (Site Number) |
|---|---|
| Tuolumne County Air Pollution Control District (TCAPCD) | Moccasin Peak (Site 1)<br>Red Mountain Bar (Site 2)<br>Transmission Tower 122N (Site 3)<br>Rock River Lime Plant (Site 4)<br>Oakdale Portal (Site 5) |
| San Joaquin Valley Air Pollution Control District (SJVAPCD) | Throttle Station 1-3 (Site 6)<br>Throttle Station 2 (Site 7)<br>MP 56.51 Tie-In (Site 8)<br>Emery Cross Over (Site 9)<br>Warnerville Yard (Site 10)<br>Oakdale Office (Site 11)<br>Albers Road Valve House (Site 12)<br>Roselle Cross Over (Site 13)<br>Modesto 2 ATC (Site 14)<br>San Joaquin Valve House (Site 15)<br>Pelican Cross Over (Site 16)<br>Tesla Treatment Facility Tower (Site 17) |
| Bay Area Air Quality Management District (BAAQMD) | Mt. Diablo SBA (Site 18)<br>Sunol Ridge ATC (Site 19)<br>Calaveras Substation (Site 20) |

**Impact AQ-1: The project would not conflict with or obstruct implementation of applicable air quality plans. (Less than Significant)**

The project would involve development of new towers or improvements at existing towers at 20 locations in Tuolumne, Stanislaus, San Joaquin, Alameda, and Contra Costa counties. There would be 3 sites within the jurisdiction of the BAAQMD, 12 sites within the jurisdiction of the SJVAPCD, and 5 sites within the jurisdiction of the TCAPCD.

The California Clean Air Act requires the air pollution control district in each region of the state to prepare a plan showing that district's strategy for achieving attainment of the state standards. The BAAQMD, SJVAPCD, and TCAPCD are the regional agencies responsible for overseeing compliance with state and federal laws, regulations, and programs within the SFBAAB, SJVAB, and MCAB, respectively.

The SJVAPCD recently adopted three plans[88,89,90] that set forth the SJVAPCD's strategies for attaining the federal ozone and $PM_{10}$ ambient air quality standards in the SJVAB. The TCAPCD protects air quality and public health in Tuolumne County (located in the MCAB) through issuance of permits, which ensure that all equipment processes with a potential for air pollutant emissions comply with federal, state, and local district regulations.

The most recently adopted air quality plan in the SFBAAB is the *2010 Clean Air Plan* (CAP).[91] The CAP is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the CAP, this analysis considers whether the project would: (1) support the primary goals of the CAP, (2) include applicable control measures from the CAP, and (3) avoid disrupting or hindering implementation of control measures identified in the CAP. To meet the primary goals, the CAP recommends 55 specific control measures and actions aimed at reducing air pollution in the SFBAAB. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan.

The project would not involve new construction of any new sources that would involve long-term direct or indirect emissions of air pollutants in the BAAQMD. One 8.5-kW LPG-powered emergency generator is proposed in the TCAPCD, while one 8.5-kW LPG-powered emergency generator is proposed in the SJVAPCD. Both generators will require Authority to Construct permits and could require Permits to Operate. Permit conditions will ensure that air pollutant emissions from the proposed generators do not exceed TCAPCD and SJVAPCD thresholds, which are based on state and federal standards. Therefore, this project would not obstruct or conflict with implementation of the applicable clean air plans, and the impact would be *less than significant*.

---

88 SJVAPCD, 2004. *Extreme Ozone Attainment Demonstration Plan, San Joaquin Valley Air Basin Plan Demonstrating Attainment of Federal 1-hour Ozone Standards.* October 8, 2004. http://www.valleyair.org/Air_Quality_Plans/docs/final_one_hour_adopted/Cover-ARB%20Final.pdf (accessed January 24, 2012).

89 SJVAPCD, 2007. *2007 Ozone Plan.* April 30, 2007. http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm (accessed January 24, 2012).

90 SJVAPCD *2007 $PM_{10}$ Maintenance Plan and Request for Redesignation,* September 20, 2007. http://www.valleyair.org/Air_Quality_Plans/docs/Maintenance%20Plan10-25-07.pdf (accessed January 24, 2012).

91 BAAQMD, 2010. *Bay Area 2010 Clean Air Plan*. Adopted September 15, 2010.

**Impact AQ-2: Project construction activities would generate fugitive dust and criteria air pollutants, and could violate applicable air quality standards. (Less than Significant with Mitigation)**

Construction activities (short-term) typically result in emissions of fugitive dust, criteria air pollutants, and diesel particulate matter (DPM). Emissions of criteria pollutants and DPM are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, reactive organic gases (ROGs) are also emitted from activities that involve painting or other types of architectural coatings or asphalt paving activities. Construction of the proposed project would contribute to regional criteria air pollutants, generating fugitive dust (including $PM_{10}$ and $PM_{2.5}$) during various construction activities, including excavation, grading, demolition, and vehicle travel on both paved and unpaved surfaces. Other criteria pollutants would also be generated from the exhaust emissions of construction equipment and vehicles, including nitrogen oxides (NOx). During the project's approximately 12- to 15-month construction period, construction activities would have the potential to result in fugitive dust emissions, criteria air pollutants and DPM.

By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.[92]

Thresholds established by these air districts to determine whether an individual project's criteria pollutant emissions significantly affect the attainment status of each air district are presented in **Table 9**. Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB, SJVAPCD, or TCAPCD.

There are generally four key components of construction that would occur in some combination at project sites:

- new antennas
- new towers
- solar PV panels
- backup generators

[92] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines*, May 2011, page 2-1.

**TABLE 9**
**COMPARISON OF BAAQMD, SJVAPCD, AND TCAPCD CEQA THRESHOLDS OF SIGNIFICANCE**

| | CONSTRUCTION-RELATED EMISSION THRESHOLDS | | | OPERATIONAL EMISSION THRESHOLDS | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **POLLUTANT** | **BAAQMD[1]** | **SJVAPCD[2]** | **TCAPCD[3]** | **BAAQMD** | | **SJVAPCD** | | **TCAPCD** | |
| **Criteria Air Pollutants and Precursors (Regional)** | **Average Daily Emissions (lbs/day)** | **Annual Emissions (tpy)[4]** | **Annual Emissions (tpy)** | **Maximum Daily Emissions (lbs/day)** | **Annual Emissions** (tpy) | **Maximum Daily Emissions (lbs/day)** | **Annual Emissions (tpy)** | **Maximum Daily Emissions (lbs/day)** | **Annual Emissions (tpy)** |
| ROG (reactive organic gases) | 54 | 10 | None | 54 | 10 | None | 10 | 1,000 | 100 |
| $NO_X$ (nitrogen oxides) | 54 | 10 | None | 54 | 10 | None | 10 | 1,000 | 100 |
| $PM_{10}$ (particulate matter exhaust) | 82 | Regulation VIII, Dust Control[5] | None | 82 | 15 | None | Regulation VIII, Dust Control | 1,000 | 100 |
| $PM_{2.5}$ (particulate matter exhaust) | 54 | None | None | 54 | 10 | None | None | None | None |
| Fugitive Dust | Best Management Practices | None | None | Not Applicable | Not Applicable | None | None | None | None |
| Local CO (carbon monoxide) | None | None | None | 9.0 ppm (8-hour average), 20.0 ppm (1-hour average) | | Same | | Same | |
| Risks and Hazards – Siting a New Source or Receptor | (Same as Operational Thresholds) Cancer Risk > 10 in a million Non-Cancer Hazard Index >1.0 $PM_{2.5}$ level > 0.3 µg/m³ annual average | (Same as Operational Thresholds) Cancer Risk > 10 in a million Non-Cancer Hazard Index >1.0 | (Same as Operational Thresholds) Cancer Risk > 10 in a million Non-Cancer Hazard Index >1.0 | Compliance with Qualified Local Community Risk Reduction Plan OR Cancer Risk >10 in a million and Non-Cancer Hazard Index >1.0 and $PM_{2.5}$ level > 0.3 µg/m³ annual average<br><br><u>Zone of Influence</u>: 1,000 foot radius from fence line of source or receptor | | Cancer Risk > 10 in a million<br><br>Non-Cancer Hazard Index >1.0 | | Cancer Risk > 10 in a million[6]<br><br>Non-Cancer Hazard Index >1.0[7] | |
| Risks and Hazards – Cumulative Significance Criteria (Source or Receptor) | (Same as Operational Thresholds) Cancer Risk > 100 in a million Non-Cancer Hazard Index > 1.0 $PM_{2.5}$ level > 0.8 µg/m³ annual average<br><br><u>Zone of Influence</u>: 1,000 foot radius from fence line of source or receptor | None | None | Compliance with Qualified Local Community Risk Reduction Plan OR Cancer Risk > 100 in a million and Non-cancer Hazard Index > 1.0 and $PM_{2.5}$ level > 0.8 µg/m³ annual average<br><br><u>Zone of Influence:</u> 1,000 foot radius from fence line of source or receptor | | None | | None | |

**TABLE 9 (Continued)**
**COMPARISON OF BAAQMD, SJVAPCD, AND TCAPCD CEQA THRESHOLDS OF SIGNIFICANCE**

NOTES:

[1] Source: BAAQMD, 2011. *California Environmental Quality Act Air Quality Guidelines,* pp. 2-1 to 2-3. Updated May 2011. The BAAQMD's adoption of significance thresholds for air quality analysis in 2010 and 2011 were the subject of judicial actions, and adoption of the thresholds has been set aside, However, SF Planning has determined that Appendix D of the BAAQMD CEQA Air Quality Guidelines, in combination with BAAQMD's Revised Draft Options and Justification Report (BAAQMD, 2009b), provide substantial evidence to support the BAAQMD recommended thresholds. Therefore, the Planning Department has determined they are appropriate for use in this analysis as standards of significance.

[2] Source: SJVAPCD, 2011. CEQA Project Analysis Levels. http://www.valleyair.org/transportation/ceqaanalysislevels.htm#small (accessed November 3, 2011).

[3] Source: TCAPCD, 2011. CEQA Thresholds of Significance. http://portal.co.tuolumne.ca.us/psp/ps/TUP_AIR_POLL_CONTROL/ENTP/c/TU_DEPT_MENU.TUOCM_HTML_COMP.GBL?action=U&CONTENT_PNM=EMPLOYEE&CATGID=2464#PORTAL_ROOT_OBJECT&FolderPath=PORTAL_ROOT_OBJECT.ADMN_TUOCM_MENUREF_2464&IsFolder=false&IgnoreParamTempl=FolderPath%2cIsFolder (accessed November 3, 2011).

[4] Thresholds apply only during construction period. Ozone precursors are calculated on an annual basis.

[5] The SJVAPCD has adopted a set of $PM_{10}$ Fugitive Dust Rules, collectively called "Regulation VIII." Several components of Regulation VIII specifically address fugitive dust generated by construction-related activities. Therefore, the SJVAPCD has determined that any determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the perspective of the SJVAPCD, compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables 6-2 and 6-3 (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce $PM_{10}$ fugitive dust impacts to a level considered less than significant." (SJVAPCD, 2002. Guide for Assessing and Mitigating Air Quality Impacts). This approach is used for the analysis of construction impacts.

[6] Source: Email communications from Bill Sandman, Deputy Air Pollution Control Officer, TCAPCD, on October 24 and November 3, 2011 regarding the District's health risk significance thresholds.

lbs/day = pounds per day
tpy = tons per year

The intensity of construction activities would vary at each project site depending on the extent of new facilities that would be constructed. The overall construction duration for the project is estimated to be 15 months. The CARB's computer model URBEMIS2007 was used to calculate construction activity emissions associated with construction of all four key components (see Appendix B) for equipment and workforce estimates. Because many of the project sites would not require construction of all four components, emissions estimates presented below overstate emissions at some sites, and therefore are considered the most conservative or maximum emissions that could occur.

Operation of project facilities would also have the potential to generate criteria pollutants—either directly from intermittent operation of the emergency backup generators or indirectly from increased electricity demand. The project's antennas and communication facilities would require 2 kWh per site for operation, and assuming continuous operation (24 hours per day, 365 days per year), the project would result in an incremental increase in criteria pollutant emissions in the three air basins associated with the generation of 17,520 kW of electricity per year. At five of the project sites, solar PV systems would be installed to provide power to project facilities. At the remaining sites, project facilities would utilize power from electricity providers—either Hetch Hetchy Water and Power (HHWP), Pacific Gas & Electric Company (PG&E), Modesto Irrigation District (MID), or Turlock Irrigation District (TID). Hetch Hetchy power draws from hydroelectric power, and there would be no increase in criteria pollutant emissions if this power source is used. If PG&E, MID, or TID power is used, it would be drawn from a regional grid, and it is not possible to ascribe criteria pollutant emissions resulting from the project's incremental increase in electricity demand to any particular air basin. Given the project's small incremental increase in electricity demand across the three air basins, increases in indirect criteria pollutant emissions from project operation would be *less than significant*. Increases in direct criteria pollutant emissions from operation of the project's backup generators are addressed in the discussion below.

### *Tuolumne County Air Pollution Control District*

The project would involve construction activities at five project sites within the jurisdiction of the TCAPCD (listed in Table 7). Emissions from the project's construction equipment and worker vehicles would be generated from multiple sources, including various trucks, a backhoe, a tractor, a vibrator, and a forklift. Construction-related criteria pollutant emissions were calculated for the project as a function of construction activity, construction duration, average haul truck mileage, and worker trips (auto/light-truck mileage).

In order to estimate the project's maximum impact, all four key components were assumed to be constructed at all five project sites during a 12-month period. Since none of the five project sites would involve all four key components and construction duration would be longer (15 months), estimated annual emissions represent the maximum impact in the TCAPCD that could occur during project construction and are presented in **Table 10**.

**TABLE 10**
**PROJECT CONSTRUCTION-RELATED EMISSIONS IN TCAPCD**

| Project Facilities | Annual Emissions (tons per year) | | | |
|---|---|---|---|---|
| | ROG | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Total Emissions at 1 Project Site | 0.01 | 0.06 | 0.01 | 0.01 |
| Total Emissions at 5 Project Sites | 0.03 | 0.30 | 0.06 | 0.05 |
| TCAPCD Significance Thresholds | None | None | None | None |

NOTES: ROG = reactive organic gases; NOx = nitrogen oxides

SOURCE: Orion Environmental Associates, 2012.

Although the TCAPCD does not have thresholds to determine the significance of a project's construction-related criteria pollutant emissions, for comparison purposes it is noted that estimated emissions are well below the SJVAPCD and BAAQMD thresholds. The project's estimated construction-related criteria pollutant emissions are considered to be *less than significant.*

The project would include installation of one 8.5-kW LPG-powered emergency generator at the Transmission Tower 122N site within the jurisdiction of the TCAPCD. Based on emissions estimates calculated for a much larger 150-kW LPG-powered emergency generator,[93] operation of this generator for one hour each week during routine testing and maintenance is estimated to result in ROG, $NO_x$, and $PM_{10}$ emissions well below 0.01 pound per day and 0.0003 ton per year. Such emissions would remain well below the TCAPCD operational significance thresholds of 1,000 pounds per day and 100 tons per year for ROG, $NO_x$, and $PM_{10}$. Therefore, emissions in the TCAPCD associated with the proposed generator would be *less than significant.*

[93] Orion Environmental Associates, 2011. *Air Quality Technical Report – Final Draft, SFPUC San Antonio Backup Pipeline Project* (CS-954-A). September 12, 2011.

### *San Joaquin Valley Air Pollution Control District*

The project would involve construction activities at 12 project sites within the jurisdiction of the SJVAPCD (listed in Table 7). To estimate the project's maximum impact, all four key components were assumed to be constructed at all 12 project sites over 60 days and within a 12-month period. Because only 1 of the 12 project sites would involve construction of all four key components, estimated emissions represent the maximum impact in the SJVAPCD that could occur during project construction and are presented in **Table 11**.

**TABLE 11**
**PROJECT CONSTRUCTION-RELATED EMISSIONS IN SJVAPCD**

| | Annual Emissions (tons per year) | | | |
|---|---|---|---|---|
| **Project Facilities** | **ROG** | **NOx** | **PM10** | **PM2.5** |
| Total Emissions at 1 Project Site | 0.01 | 0.06 | 0.01 | 0.01 |
| Total Emissions at 12 Project Sites | 0.08 | 0.73 | 0.15 | 0.11 |
| SJVAPCD Significance Thresholds | 10 | 10 | 15 | 15 |

NOTES: ROG = reactive organic gases; NOx = nitrogen oxides

SOURCE: Orion Environmental Associates, 2012.

As indicated in Table 11, the project's estimated emissions in the SJVAPCD are well below the SJVAPCD significance thresholds. Therefore, the project's estimated construction-related criteria pollutant emissions are considered to be *less than significant*. However, the SJVAPCD has adopted a set of PM10 Fugitive Dust Rules, collectively called Regulation VIII. Several components of Regulation VIII specifically address fugitive dust generated by construction-related activities. The SJVAPCD has indicated that any determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. Therefore, the project's construction-related air quality impact would be *less than significant with mitigation,* because implementation of applicable Regulation VIII measures and all other control measures indicated in Tables 6-2 and 6-3 of the SJVAPCD's air quality impacts assessment guide[94] as appropriate (depending on size and location) at all project sites within the SJVAPCD (Sites 6 through 17 in Table 8) would sufficiently reduce PM10 fugitive dust impacts to a level considered *less than significant*. The applicable measures are listed in **Mitigation Measure M-AQ-2a, SJVAPCD Applicable Regulation VIII Fugitive Dust Reduction Measures**.

[94] SJVAPCD, 2002. Guide for Assessing and Mitigating Air Quality Impacts, Technical Document, Information for Preparing Air Quality Sections in EIRs, Planning Division, Mobile Source/CEQA Section. January 10, 2002. http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Tech%20Doc%20Jan%202002%20Rev.pdf (accessed January 25, 2012).

**Mitigation Measure M-AQ-2a: SJVAPCD Applicable Regulation VIII Fugitive Dust Reduction Measures**

At the **Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Warnerville Yard, Oakdale Office, Albers Road Valve House, Roselle Cross Over, Modesto 2 ATC, San Joaquin Valve House, Pelican Cross Over, and Tesla Treatment Facility Tower** sites, project construction activities shall comply with SJVAPCD's Regulation VIII (Dust Control) in effect at the time of project construction. The required control measures from Regulation VIII applicable to the project may include the following:[95]

- All disturbed areas that are not being actively used for construction purposes, including storage piles, will be effectively stabilized for dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- All onsite unpaved roads and offsite unpaved access roads will be effectively stabilized for dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scarping, excavation, land leveling, grading, and cut and fill will be effectively controlled for fugitive dust emissions using an application of water or by presoaking.
- When materials are transported offsite, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized for fugitive dust emissions using sufficient water or chemical stabilizer/suppressant.
- Within urban areas, track-out will be immediately removed when it extends 50 feet or more from the site, and at the end of each workday.
- Excavation and grading activities shall be suspended when winds exceed 20 miles per hour unless utilizing engineering controls such as spraying water for dust control and air monitoring. Regardless of wind speed, the SFPUC and its contractors must comply with Regulation VIII's 20 percent opacity limitation, which states that visible dust emissions from the work site may not be greater than 20 percent opacity.

Although the project would also be required to comply with Rule 9510 (Indirect Source Review), the project would be exempt from the provisions of Rule 9510 because project-related $PM_{10}$ and $NO_x$ construction emissions would be less than 2 tons.

[95] SJVAPCD, 2002 (above) OR SJVAPCD, 2012. DRAFT Guidance for Assessing and Mitigating Air Quality Impacts,. May 2012. http://www.valleyair.org/transportation/GAMAQIDRAFT-2012/GAMAQI-2012-Draft-May312012.pdf (accessed November 17, 2012.

Within the SJVAPCD, the project would include the installation of one 8.5-kW LPG-powered emergency generator at the MP 56.51 Tie-In site. Based on emissions estimates calculated for a much larger 150-kW LPG-powered emergency generator,[96] operation of this generator for one hour each week during routine testing and maintenance would result in ROG, $NO_x$, and $PM_{10}$ emissions well below 0.02 pound per day and 0.0006 ton per year. Such emissions would remain well below the SJVAPCD operational significance threshold of 10 tons per year for ROG and $NO_x$. Therefore, emissions in the SJVAPCD associated with the proposed LPG-powered generator would be *less than significant.*

### *Bay Area Air Quality Management District*

The project would involve construction activities at three project sites (listed in Table 7) within the jurisdiction of the BAAQMD. The applicable significance threshold is a daily limit of emissions. The project's worst-case daily emissions from construction activities at these three project sites are estimated based on installation of new antennas (no new towers are proposed at the project sites within BAAQMD jurisdiction), with construction activities occurring at all three sites simultaneously. Estimated emissions for construction at one site, as well as simultaneous construction at all three sites (worst-case), are presented in **Table 12**. They represent the maximum daily emissions that could occur assuming the following construction activities could occur simultaneously (any other construction activities would occur sequentially): ground field trenching, radio cabinet installation, and trenching for conduits.

**TABLE 12**
**PROJECT CONSTRUCTION-RELATED EMISSIONS IN BAAQMD**

| | Daily Emissions (pounds per day) | | | |
|---|---|---|---|---|
| **Project Facilities** | **ROG** | **NOX** | **$PM_{10}$** | **$PM_{2.5}$** |
| Three Simultaneous Activities at 1 Project Site | 1.2 | 8.5 | 3.7 | 1.6 |
| Three Simultaneous Activities at 3 Project Sites | 3.6 | 25.5 | 11.1 | 4.8 |
| BAAQMD Significance Thresholds | 54 | 54 | 82 | 54 |

NOTES: ROG = reactive organic gases; NOx = nitrogen oxides

SOURCE: Orion Environmental Associates, 2012.

[96] Orion Environmental Associates, 2011. *Air Quality Technical Report – Final Draft, SFPUC San Antonio Backup Pipeline Project* (CS-954-A). September 12, 2011.

As indicated in Table 12, the project's estimated emissions in the BAAQMD would not exceed the significance thresholds. Therefore, the project's estimated construction-related criteria pollutant emissions are considered to be *less than significant.* However, the BAAQMD recommends implementation of all Basic Construction Measures (these measures are included as Mitigation Measure M-AQ-2, below) for all projects even if the daily criteria pollutant thresholds of significance for construction activities are not exceeded. At project sites within the BAAQMD, implementation of **Mitigation Measure M-AQ-2b, BAAQMD Basic Construction Measures**, is proposed.

**Mitigation Measure M-AQ-2b: BAAQMD Basic Construction Measures**

At the **Mt. Diablo SBA, Sunol Ridge ATC**, and **Calaveras Substation** sites, the SFPUC shall post one or more publicly visible signs with the telephone number and person to contact at the SFPUC with complaints related to excessive dust or vehicle idling. This person shall respond to complaints and, if necessary, take corrective action within 48 hours. The telephone number and person to contact at the BAAQMD's Compliance and Enforcement Division shall also be provided on the sign(s) in the event that the complainant also wishes to contact the applicable air district.

In addition, to limit dust and equipment exhaust emissions associated with project construction, the following BAAQMD-recommended Basic Construction Measures shall be included in the construction contract specifications for the project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Onsite vehicle speeds on unpaved areas shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times for construction equipment (including vehicles) shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage of this requirement shall be provided for construction workers at all access points to construction areas.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic.

There would be no operational emissions associated with any of the project sites located within the jurisdiction of the BAAQMD because the project would not involve the addition of any emergency generators at project sites located within the jurisdiction of the BAAQMD.

**Impact AQ-3: Construction and operation of the project would not expose persons to substantial levels of toxic air contaminants that could lead to significant adverse health effects. (Less than Significant)**

Combustion emissions from construction equipment and vehicles (i.e., heavy equipment and delivery/haul trucks, and worker commute vehicles) would be generated during project construction and could expose sensitive receptors to diesel particulate matter (DPM) and other toxic air contaminants (TACs). Offsite DPM and other TAC emissions include those generated by construction worker commute vehicles and by diesel haul/delivery trucks used during construction, particularly trucks used to transport excavated materials from the project area and construction materials to the project area. TAC emissions from construction worker commute trips would be minor compared to the emissions generated by construction equipment and haul/delivery trucks. In addition to these offsite emissions, diesel-powered construction equipment would release DPM at each project site. Combustion and exhaust contain a number of different TACs that are associated with various health risk factors.

Off-road equipment (which includes construction-related equipment) is a large contributor to DPM emissions in California, although since 2007, the CARB has found the emissions to be substantially lower than previously expected.[97] Newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the sixth largest source of DPM emissions in California.[98] For example, revised estimates of particulate matter (PM) emissions (of which DPM is a major component) for the SFBAAB for the year 2010 have decreased by 83 percent from estimates of 2010 emissions.[99] Approximately half of the reduction in emissions can be attributed to the economic recession and half to updated methodologies used to better assess construction emissions.[100]

Additionally, a number of federal and state regulations are requiring cleaner off-road equipment. Specifically, both the USEPA and California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000 and Tier 4 Interim and Final emission standards for all new engines would be phased in between 2008 and 2015. To meet the Tier 4 emission standards, engine manufacturers will be required to produce new

---

97 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements,* p.1 and p. 13 (Figure 4), October 2010.

98 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements,* October 2010.

99 ARB, "In-Use Off-Road Equipment, 2011 Inventory Model," Query accessed online, April 2, 2012, http://www.arb.ca.gov/msei/categories.htm#inuse_or_category.

100 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements,* October 2010.

engines with advanced emission-control technologies. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the federal Tier 4 standards, $NO_x$ and PM emissions will be reduced by more than 90 percent.[101] Furthermore, California regulations limit maximum idling times to five minutes, which further reduces public exposure to DPM emissions.[102]

**Construction Emissions.** There are sensitive receptors (residences) located within 250 feet of project facilities at 5 project sites (listed in Table 7). Based on: 1) the results of health risk screening analyses completed for other construction projects in northern California,[103] 2) the proposed short construction durations (when construction equipment would operate) of 30 days or less at each site, and 3) the estimated $PM_{2.5}$ emissions (including DPM) of 1.6 pounds/day or less, the health risks at these adjacent and nearby receptors would not exceed the SJVAPCD and BAAQMD's construction-related and operational risks and hazards significance thresholds of 10 in one million for cancer risk and the hazard index of 1 for non-cancer risk. Therefore, the project would result in a *less-than-significant* air quality impact related to health risk.[104]

**Operational Emissions.** The only source of TAC emissions associated with project operation and maintenance would be the two LPG-powered emergency generators (8.5-kW) that are proposed to be located in Tuolumne and Stanislaus counties. Exhaust emissions from LPG-powered generators include very small amounts of a variety of TACs. The principal LPG-combustion TACs are formaldehyde, ammonia, and benzene, which are associated with acute non-cancer health risks.[105]

Evaluation of a much larger, 150-kW LPG-powered emergency generator for another SFPUC project revealed that operation of such a generator for one hour each week for routine testing and maintenance would have *less-than-significant* health risk impacts when compared to TAC emissions-based trigger levels developed by the BAAQMD for stationary sources.[106] Trigger levels for emergency generators have

---

[101] *USEPA, "Clean Air Nonroad Diesel Rule: Fact Sheet," May 2004.*

[102] California Code of Regulations, Title 13, Division 3, § 2485.

[103] City of San Francisco, 2012. *Final Environmental Impact Report: SFPUC San Antonio Backup Pipeline Project*. Environmental Planning Case No. 2007.0039E. September 20, 2012.

[104] TCAPCD does not have significance threshold for construction-related DPM emissions (TCAPCD, 2012. APCD CEQA Thresholds).

[105] SCAQMD, 2010. Supplemental Instructions, Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, Annual Emissions Reporting Program. http://www.aqmd.gov/aer/Updates/SuppInstruforAB2588Facilities.pdf (accessed February 20, 2012). SCAQMD emissions data are used in this analysis because the TCAPCD, SJVAPCD, and BAAQMD have not published TAC emission factors for LPG-powered generators. LPG combustion emissions data are typically not aggregated by air district because emissions are equipment-specific and do not vary geographically. The basic source of emission factors, including those published by the SCAQMD, is the USEPA's AP-42, Compilation of Emission Factors, which are applied nationally.

[106] Orion Environmental Associates, 2011. *Air Quality Technical Report – Final Draft, SFPUC San Antonio Backup Pipeline Project* (CS-954-A). September 12, 2011.

not been established by the TCAPCD and SJVAPCD, but generator emissions would have to meet state TAC standards pursuant to the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) requirements. Because TAC emissions associated with the proposed LPG-powered generators would remain well below BAAQMD TAC emissions-based trigger levels for stationary sources, the project's operational emissions are considered to pose *less-than-significant* health risk impacts.

**Impact AQ-4: Operation and construction of the project would not create objectionable odors affecting a substantial number of people. (Less than Significant)**

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. Construction and operation of the proposed project would not result in odors related to these typical sources. During construction of the project facilities, combustion emissions from the use of diesel fuel in construction equipment could generate localized objectionable odors. Of the 20 project sites, there are sensitive receptors (residences) located within 250 feet of five project sites where odors from diesel exhaust could be perceptible. However, project construction would involve operation of a small number of diesel equipment for a limited duration (less than 30 days). Even if odors were temporarily perceivable by these receptors, a substantial number of people would not be affected. Therefore, the project's construction impacts related to objectionable odors would be *less than significant.*

Operation of the project communication facilities would not create nuisance odor problems because these facilities would run on electrical power and there would be no direct emissions associated with their operation. In addition, operation of the LPG-powered emergency generator would not create nuisance odors because there are no odors associated with the combustion of LPG. Thus, there would be *no impact* related to objectionable odors during project operation and maintenance.

**Impact C-AQ: Project construction or operation would not result in a cumulatively considerable net increase of any criteria pollutant or precursors for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard. (Less than Significant)**

Significant cumulative impacts from odors would not result, due to the limited impacts associated with the proposed project, and the distance to and limited intensity of the other projects listed in Appendix A. Similarly, significant cumulative health risks are also not anticipated as the project would not involve

substantial long-term air quality emissions, and because the cumulative effects on any sensitive receptors nearby to the proposed project would be limited by the distance to other projects listed in Appendix A.

As discussed above, regional air pollution is by its very nature largely a cumulative impact. Emissions from past, present and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.[107] The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Project emissions are compared below to applicable air district thresholds, which indicate whether or not emissions would be cumulatively considerable.

### *Tuolumne County Air Pollution Control District*

The TCAPCD does not have thresholds to determine the significance of a project's construction-related criteria pollutant or precursor emissions contributions to cumulative impacts on regional air quality. However, as indicated in Table 10, estimated project construction emissions are well below the SJVAPCD and BAAQMD significance thresholds for construction-related criteria pollutant and precursor emissions. Therefore, the project's contribution to cumulative impacts on regional air quality are considered to be less than cumulatively considerable, a *less-than-significant* impact.

### *San Joaquin Valley Air Pollution Control District*

To address cumulative impacts on regional air quality, the SJVAPCD has established thresholds of significance for construction-related precursor emissions (ROG and $NO_x$) and requires all construction projects to implement the dust-control measures outlined in Regulation VIII. These thresholds represent the levels at which a project's individual precursor emissions would result in a cumulatively considerable contribution to the SJVAB's existing air quality violations of criteria pollutants. If average annual emissions exceed these thresholds, the project would result in a cumulatively significant impact. As indicated in Table 11 above, construction-related criteria pollutant and precursor emissions associated with the project would not exceed the SJVAPCD significance thresholds, and therefore the project's contribution to cumulative impacts on regional air quality would be less than cumulatively considerable, a *less-than-significant* impact.

[107] BAAQMD, *CEQA Air Quality Guidelines,* May 2011, page 2-1.

*Bay Area Air Quality Management District*

To address cumulative impacts on regional air quality, the thresholds of significance for construction-related criteria pollutants and precursor emissions have been developed, which represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality violations. If average daily emissions exceed these thresholds, the project would result in a cumulatively significant impact. As indicated in Table 12 above, construction-related criteria pollutant and precursor emissions associated with the project would not exceed the applicable significance thresholds, and therefore the project's contribution to cumulative impacts on regional air quality would be less than cumulatively considerable, a *less-than-significant* impact.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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 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 for global climate change. The primary GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor.

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during demolition, construction, and operational phases. While the presence of the primary GHGs in the atmosphere is naturally occurring, carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$) are largely emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of $CO_2$ are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Black carbon has recently emerged as a major contributor to global climate change, possibly second only to $CO_2$. Black carbon is

produced naturally and by human activities as a result of the incomplete combustion of fossil fuels, biofuels and biomass.[108] $N_2O$ is a byproduct of various industrial processes and has a number of uses, including use as an anesthetic and as an aerosol propellant. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which are generated in certain industrial processes. GHGs are typically reported in terms of carbon dioxide-equivalent ($CO_2E$).[109]

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Many impacts resulting from climate change, including increased fires, floods, severe storms and heat waves, are occurring already and will only become more frequent and more costly.[110] Secondary effects of climate change are likely to include a global rise in sea level, impacts to agriculture, the state's electricity system, and native freshwater fish ecosystems, an increase in the vulnerability of levees in the Sacramento-San Joaquin Delta, changes in disease vectors, and changes in habitat and biodiversity.[111,112]

The California Air Resources Board (CARB) estimated that in 2009 California produced about 457 million gross metric tons of $CO_2E$ ($MMTCO_2E$).[113] The CARB found that transportation is the source of 38 percent of the State's GHG emissions, followed by electricity generation (both in-state generation and imported electricity) at 23 percent and industrial sources at 18 percent. Commercial and residential fuel use (primarily for heating) accounted for nine percent of GHG emissions.[114] In the Bay Area, the transportation (on-road motor vehicles, off-highway mobile sources, and aircraft) and industrial/commercial sectors were the two largest sources of GHG emissions, each accounting for approximately 36 percent of the Bay Area's 95.8 $MMTCO_2E$ emitted in 2007.[115] Electricity generation accounts for approximately 16 percent of the Bay

[108] Center for Climate and Energy Solutions. *What is Black Carbon?*, April 2010. Available online at: *http://www.c2es.org/docUploads/what-is-black-carbon.pdf*. Accessed September 27, 2012.

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

[110] California Climate Change Portal. Available online at: http://www.climatechange.ca.gov. Accessed September 25, 2012.

[111] California Climate Change Portal. Available online at: http://www.climatechange.ca.gov/. Accessed September 25, 2012.

[112] California Energy Commission. California Climate Change Center. *Our Changing Climate 2012*. Available online at: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf. Accessed August 21, 2012.

[113] California Air Resources Board (ARB). California Greenhouse Gas Inventory for 2000-*2009*— by Category as Defined in the Scoping Plan. Available online at: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-09_2011-10-26.pdf. Accessed August 21, 2012.

[114] ARB. *California Greenhouse Gas Inventory for 2000-2009— by Category as Defined in the Scoping Plan*. Available online at: *http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-09_2011-10-26.pdf*. Accessed August 21, 2012.

[115] Bay Area Air Quality Management District (BAAQMD). *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007*, February 2010. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed August 21, 2012.

Area's GHG emissions followed by residential fuel usage at seven percent, off-road equipment at three percent and agriculture at one percent.[116]

## Regulatory Setting

In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 $MMTCO_2E$); by 2020, reduce emissions to 1990 levels (estimated at 427 $MMTCO_2E$); and by 2050 reduce statewide GHG emissions to 80 percent below 1990 levels (approximately 85 $MMTCO_2E$).

In response, the California legislature passed Assembly Bill No. 32 in 2006 (California Health and Safety Code Division 25.5, Sections 38500, et seq.), also known as the Global Warming Solutions Act. AB 32 requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction from forecast emission levels).[117]

Pursuant to AB 32, the CARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. The Scoping Plan is the State's overarching plan for addressing climate change. In order 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 2008 levels. [118] The Scoping Plan estimates a reduction of 174 million metric tons of $CO_2E$ ($MMTCO_2E$) (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and high global warming potential sectors (see **Table 13** below). The CARB has identified an implementation timeline for the GHG reduction strategies in the Scoping Plan.[119]

---

[116] BAAQMD. *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007, Updated: February 2010*. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed August 21, 2012.

[117] Governor's Office of Planning and Research (OPR). *Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, June 19, 2008. Available online at: http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed August 21, 2012.

[118] ARB. *California's Climate Plan: Fact Sheet*. Available online at: http://www.arb.ca.gov/cc/facts/scoping_plan_fs.pdf. Accessed August 21, 2012.

[119] ARB. *Assembly Bill 32: Global Warming Solutions Act*. Available online at: http://www.arb.ca.gov/cc/ab32/ab32.htm/. Accessed August 21, 2012.

**TABLE 13**
**GHG REDUCTIONS FROM THE AB 32 SCOPING PLAN SECTORS**[120,121]

| GHG Reduction Measures By Sector | GHG Reductions ($MMTCO_2E$) |
|---|---|
| Transportation Sector | 62.3 |
| Electricity and Natural Gas | 49.7 |
| Industry | 1.4 |
| Landfill Methane Control Measure (Discrete Early Action) | 1 |
| Forestry | 5 |
| High Global Warming Potential GHGs | 20.2 |
| Additional Reductions Needed to Achieve the GHG Cap | 34.4 |
| **Total** | **174** |
| **Other Recommended Measures** | |
| Government Operations | 1–2 |
| Methane Capture at Large Dairies | 1 |
| Additional GHG Reduction Measures: | |
| • Water | 4.8 |
| • Green Buildings | 26 |
| • High Recycling / Zero Waste<br>- Commercial Recycling<br>- Composting<br>- Anaerobic Digestion<br>- Extended Producer Responsibility<br>- Environmentally Preferable Purchasing | 9 |
| **Total** | **41.8-42.8** |

SOURCE: ARB, 2010. AB 32 Scoping Plan. http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf (accessed March 2, 2010).

The AB 32 Scoping Plan recommendations are intended to curb projected business-as-usual growth in GHG emissions and reduce those emissions to 1990 levels. Therefore, meeting AB 32 GHG reduction goals would result in an overall annual net decrease in GHGs as compared to current levels and accounts for projected increases in emissions resulting from anticipated growth.

The Scoping Plan also relies on the requirements of Senate Bill 375 (SB 375) to implement the carbon emission reductions anticipated from land use decisions. SB 375 was enacted to align local land use and transportation planning to further achieve the State's GHG reduction goals. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a

[120] ARB. *Climate Change Scoping Plan*, December 2008. Available online at: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed August 21, 2012.
[121] ARB. *California's Climate Plan: Fact Sheet*. Available online at: http://www.arb.ca.gov/cc/facts/scoping_plan_fs.pdf. Accessed August 21, 2012.

"sustainable communities strategy" in their regional transportation plans (RTPs) that would achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 would be implemented over the next several years and the Bay Area Metropolitan Transportation Commission's 2013 RTP, Plan Bay Area, would be its first plan subject to SB 375.

AB 32 further anticipates that local government actions will result in reduced GHG emissions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments themselves and noted that successful implementation of the Scoping Plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.[122] The BAAQMD has conducted an analysis of the effectiveness of the region in meeting AB 32 goals from the actions outlined in the Scoping Plan and determined that in order for the Bay Area to meet AB 32 GHG reduction goals, the Bay Area would need to achieve an additional 2.3 percent reduction in GHG emissions from the land use driven sector.[123]

Senate Bill 97 (SB 97) required the Office of Planning and Research (OPR) to amend the state *CEQA Guidelines* to address the feasible mitigation of GHG emissions or the effects of GHGs. In response, OPR amended the *CEQA Guidelines* to provide guidance for analyzing GHG emissions. Among other changes to the *CEQA Guidelines*, the amendments added a new section to the CEQA Checklist (*CEQA Guidelines* Appendix G) to address questions regarding the project's potential to emit GHGs.

### *Local Policies and Regulations*

The project would involve the development of new towers or improvements at existing towers at 20 project sites: 5 sites under the jurisdiction of the TCAPCD; 12 sites under the jurisdiction of the SJVAPCD; and 3 sites under the jurisdiction of the BAAQMD.

[122] ARB. *Climate Change Scoping Plan*. December 2008. Available online at: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed August 21, 2012.

[123] BAAQMD. *California Environmental Quality Act Guidelines Update, Proposed Thresholds of Significance*, December 2009. Available online at: *http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Proposed%20Thresholds%20of%20Significance%20Dec%207%2009.ashx*. Accessed September 25, 2012.

### Tuolumne County Air Pollution Control District GHG Reduction Strategy

In 2011, the Tuolumne County Transportation Council completed a Regional Blueprint GHG Study,[124] which indicates that business-as-usual GHG emissions are forecasted to increase by approximately 43 percent by 2040. The TCAPCD has not adopted significance thresholds for GHG emissions related to construction or operation.

### San Joaquin Valley Air Pollution Control District GHG Reduction Strategy

The SJVAPCD guidance for assessing and reducing the impacts of project-specific GHG emissions[125] does not specify significance thresholds for construction-related or operational GHG emissions, but relies on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process to determine the significance of a project's increase; it is not a required emission reduction measure. Projects implementing BPS would be determined to have a less-than-significant impact. Otherwise, demonstration of a 29-percent reduction in GHG emissions from business-as-usual is required to determine that a project would have a less-than-significant impact. The guidance does not limit a lead agency's authority to establish its own process and guidance for determining significance of project-related impacts on global climate change.

### Bay Area Air Quality Management District CEQA Guidelines

The BAAQMD is the primary agency responsible for air quality regulation in the nine-county SFBAAB. The BAAQMD recommends that local agencies adopt a Greenhouse Gas Reduction Strategy consistent with AB 32 goals and that subsequent projects be reviewed to determine the significance of their GHG emissions based on the degree to which that project complies with a Greenhouse Gas Reduction Strategy.[126] As described below, this recommendation is consistent with the approach to analyzing GHG emissions outlined in the *CEQA Guidelines*.

---

[124] Tuolumne County Transportation Council, 2011. *Tuolumne County Regional Blueprint GHG Study: Summary of Results*. http://tuolumnecountytransportationcouncil.org/archiveBluePrnt/Sept/Item%203%20Summary%20of%20Inventory%20Results.pdf (accessed January 27, 2012).

[125] SJVAPCD, 2009. District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency. December 2009.

[126] BAAQMD. *California Environmental Quality Act Air Quality Guidelines*, May 2012. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en. Accessed September 25, 2012.

At a local level, the City of San Francisco has developed a number of plans and programs to reduce the City's contribution to global climate change. San Francisco's GHG reduction goals, as outlined in the 2008 Greenhouse Gas Reduction ordinance are as follows: by 2008, determine the City's GHG emissions for the year 1990, the baseline level with reference to which target reductions are set; by 2017, reduce GHG emissions by 25 percent below 1990 levels; by 2025, reduce GHG emissions by 40 percent below 1990 levels; and finally by 2050, reduce GHG emissions by 80 percent below 1990 levels. The ordinance also directs City departments to prepare climate action plans that assess GHG emissions associated with their activities and with the activities they regulate, and to report the results of those assessments to the San Francisco Department of the Environment. In 2009, pursuant to San Francisco's Greenhouse Gas Reduction Ordinance, the SFPUC presented a departmental climate action plan focused on energy efficiency and renewable energy programs that help to reduce GHG emissions. The total energy savings potential for all SFPUC facilities is estimated to be 11.8 million kilowatt-hours (kWh) of electricity. A number of SFPUC energy-efficiency and renewable energy generation projects have already been implemented, and many more are in the planning, design, or construction phases.[127]

The SFPUC manages and implements energy-efficiency projects in municipal buildings and facilities, and provides energy-efficiency services such as energy audits and design and construction management. Energy-efficiency technologies are commonly applied to lighting; heating, ventilation, and air conditioning; facility pumps and motors; and electrical controls. As of 2007, the SFPUC estimated that the energy-efficiency improvement projects had resulted in a reduction in $CO_2$ emissions of approximately 11,000 metric tons (MT) per year.[128]

The SFPUC currently operates over 2 megawatts (MW) of solar electric PV projects throughout San Francisco that collectively generate over 2 million kWh of clean renewable electricity annually. A large-scale solar electric PV project planned for Sunset Reservoir is expected to produce an additional 5 MW of solar energy. Other potential opportunities for large-scale solar projects are being considered for the SFPUC Tesla Treatment Facility in San Joaquin County as well as for SFPUC water supply facilities in the Sunol Valley. In addition, the SFPUC has installed wind monitoring equipment at sites in and around the Bay Area and the Sierra Nevada mountains to evaluate the potential for wind power development.[129]

[127] San Francisco Planning Department, 2010. *City and County of San Francisco Strategies to Address Greenhouse Gas Emissions in San Francisco.* November 2010. http://sfmea.sfplanning.org/GHG_Reduction_Strategy.pdf (accessed February 21, 2012).
[128] Ibid.
[129] Ibid.

SFPUC projects that reduce electrical energy consumption and/or that generate renewable energy help to reduce GHG emissions associated with SFPUC facility operations.

The Greenhouse Gas Reduction Strategy concludes that San Francisco's policies and programs have resulted in a reduction in GHG emissions below 1990 levels, exceeding statewide AB 32 GHG reduction goals. As reported, San Francisco's communitywide 1990 GHG emissions were approximately 6.15 $MMTCO_2E$. A recent third-party verification of the City's 2010 communitywide and municipal emissions inventory has confirmed that San Francisco has reduced its GHG emissions to 5.26 $MMTCO_2E$, representing a 14.5 percent reduction in GHG emissions below 1990 levels.[130,131]

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

The most common GHGs resulting from human activity are $CO_2$, black carbon, $CH_4$, and $N_2O$. [132] Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers, energy required to pump, treat, and convey water, and emissions associated with landfill operations.

Thresholds established by the TCAPCD, SJVAPCD, and BAAQMD to determine whether an individual project's GHG emissions significantly contribute to climate change are summarized in **Table 14**.

Project construction activities are estimated to occur over approximately 12 to 15 months, beginning in early-2014. **Table 15** presents the project's estimated annual construction-related emissions for 2014. As indicated in the table, construction activities associated with the project would generate up to an

[130] ICF International. *"Technical Review of the 2010 Community-wide GHG Inventory for City and County of San Francisco." Memorandum from ICF International to San Francisco Department of the Environment*, April 10, 2012. Available online at: http://www.sfenvironment.org/download/community-greenhouse-gas-inventory-3rd-party-verification-memo. Accessed September 27, 2012.

[131] ICF International. *"Technical Review of San Francisco's 2010 Municipal GHG Inventory." Memorandum from ICF International to San Francisco Department of the Environment*, May 8, 2012. Available online at: http://www.sfenvironment.org/download/third-party-verification-of-san-franciscos-2010-municipal-ghg-inventory. Accessed September 27, 2012.

[132] OPR. *Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, June 19, 2008. Available at the Office of Planning and Research's website at: http://www.opr.ca.gov/ceqapdfs/june08-ceqa.pdf. Accessed March 3, 2010.

**TABLE 14**
**COMPARISON OF BAAQMD, SJVAPCD, AND TCAPCD CEQA GHG THRESHOLDS OF SIGNIFICANCE**

| Pollutant | Construction-related Thresholds | | | Operational Thresholds | | |
|---|---|---|---|---|---|---|
| | **BAAQMD** | **SJVAPCD** | **TCAPCD** | **BAAQMD** | **SJVAPCD** | **TCAPCD** |
| GHGs – Projects other than Stationary Sources | Best Management Practices<br>- Alternative fuels<br>- Local materials<br>- Recycled demolition | None | None | Compliance with Qualified Climate Action Plan<br>OR<br>Threshold of 1,100 $MTCO_2E$/year | Compliance with District-approved BPS or quantify GHG emissions and demonstrate project achieves AB32 targeted 29 percent GHG emissions reductions compared to Business-as Usual (BAU)[4] | None[7] |

NOTE: $MTCO_2E$ = million metric tons of carbon dioxide-equivalent

SOURCES: BAAQMD Source: BAAQMD, 2011, *California Environmental Quality Act Air Quality Guidelines*, pp. 2-1 to 2-3. Updated May 2011.
SJVAPCD Source: SJVAPCD, 2012. *FACT SHEET, Addressing Greenhouse Gas Emissions Impact under the California Environmental Quality Act (CEQA).* http://www.valleyair.org/Programs/CCAP/bps/fact_sheet_for_development_sources.pdf (accessed January 27, 2012).
TCAPCD Source: Email communications from Bill Sandman, Deputy Air Pollution Control Officer, TCAPCD, on October 24 and November 3, 2011 regarding the District's GHG significance thresholds.

**TABLE 15**
**ESTIMATED ANNUAL GHG EMISSIONS DURING CONSTRUCTION**

| Project Sites by Air District | Short Tons $CO_2$ per Year | Metric Tons $CO_2$ per Year | Metric Tons $CO_2E$ per Year |
|---|---|---|---|
| 3 Sites in BAAQMD | 49.0 | 44.5 | 44.9 |
| 12 Sites in SJVAPCD | 195.9 | 178.1 | 179.7 |
| 5 Sites in TCAPCD | 81.6 | 74.2 | 74.9 |
| **Total** | **326.4** | **296.8** | **299.4** |

NOTES: CO2 = carbon dioxide. When $CO_2$ and non-$CO_2$ GHG emissions are considered together, they are referenced as $CO_2E$, which add approximately 0.9 percent to $CO_2$ emissions from diesel equipment exhaust (California Climate Action Registry, 2009).
Short Tons = British Tons = 2,000 pounds

SOURCE: Orion Environmental Associates, 2012.

estimated 300 metric tons of $CO_2E$ ($MTCO_2E$) in the peak or worst-case year. Emissions associated with project construction would represent approximately $6.3 \times 10^{-7}$ (0.0000006) percent of total annual GHG emissions for the state.[133]

As indicated in Table 14, the TCAPCD, SJVAPCD, and BAAQMD do not have quantified significance thresholds for construction-related GHG emissions.[134,135,136] However, the BAAQMD's *CEQA Guidelines* encourage incorporation of best management practices (BMPs) to reduce GHG emissions during construction, as applicable, such as ensuring that at least 15 percent of the construction fleet is composed of alternatively fueled (e.g., biodiesel, electric) construction vehicles/equipment; using at least 10 percent local building materials; and recycling or reusing at least 50 percent of construction waste or demolition materials. Given the small size of the project sites, their dispersed locations over the region, limited need for construction equipment at each site and specialized equipment at each site, the SFPUC does not expect to use alternatively-fueled construction vehicles/equipment for at least 15 percent of the construction fleet or at least 10 percent of local building materials. However, as indicated in Mitigation Measure M-UT-3 (Waste Management/Recycling Plan) in Section 11, *Utilities and Service Systems*, the

[133] CARB reported statewide GHG emissions in 2008 at approximately 478 $MMTCO_2E$ (CARB, 2012. *California Greenhouse Gas Inventory for 2000-2008— by Category as Defined in the Scoping Plan*. http://www.arb.ca.gov/cc/inventory/data/data.htm [accessed January 26, 2012]).
[134] Email communication with Bill Sandman, Deputy Air Pollution Control Officer, TCAPCD, on November 3, 2011 regarding TCAPCD thresholds.
[135] SJVAPCD, 2009. *Final Staff Report Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act*. December 17, 2009.
[136] BAAQMD, 2010. *CEQA Air Quality Guidelines*. June 2010, updated May 2011.

contractor will be required to divert at least 50 percent of inert solids from disposal in a landfill in accordance with the solid waste diversion goals set by the California Integrated Waste Management Act.

Project construction activities would generate a relatively small amount of GHGs in comparison to statewide GHG emissions. In addition, construction-related GHG emissions would be temporary in nature and limited to the approximately 12- to 15-month construction period. Furthermore, the SFPUC would require the majority of construction waste to be diverted from landfills. For these reasons, project construction would not conflict with state AB 32 goals or local GHG reduction policies. The project would also be subject to the existing CARB regulation (Title 13 of the California Code of Regulations [CCR] Section 2485), which limits idling of diesel-fueled commercial motor vehicles; compliance with this regulation would further reduce GHG emissions associated with project construction vehicles. Therefore, the project's construction-related GHG emissions would be *less than significant.*

The project's direct operational GHG emissions would be limited to periodic testing of two new LPG-powered generators. At five of the project sites, solar PV systems would be installed to provide power to project facilities at these towers. At the remaining sites, project facilities would utilize power from the following electricity providers, depending on location: HHWP, PG&E, MID, or TID. HHWP draws from hydroelectric power, and there would be no increase in GHG emissions if this power source is used. PG&E, MID, or TID power would be drawn from a regional grid, and it is not possible to accurately quantify GHG emissions resulting from the project's incremental increase in electricity demand from these providers because the grid draws from a variety of resources (e.g., natural gas, hydroelectric), each of which has a different GHG emission level per MW. The project's radio communication facilities would use 2 kWh per site for operation, and assuming continuous operation (24 hours per day, 365 days per year), the project increase of 17,520 kW of electricity demand per year would generate approximately 5.79 $MTCO_2E$ annually.[137] Although electricity generation could occur anywhere on the regional grid, a comparison of these annual emissions to the 1,100 $MTCO_2E$ per year for stationary sources would indicate that operational GHG emissions from increased electricity demand would be *less than significant*. Because there would be no increase in vehicle trips for maintenance and operation of proposed facilities, there would be no direct GHG emissions from vehicles.

[137] California Climate Action Registry, 2009. *Power Generation/Electric Utility Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions Produced by Electric Power Generators and Electric Utilities*. http://www.climateregistry.org/resources/docs/pup/Power-Utility_Reporting_Protocol_Version_1.1.pdf (accessed February 21, 2012). The California Climate Action Registry reporting protocol presents a $CO_2E$ emission factor of 727.265 pounds per MW-hours for the California grid. Based on an annual assumption of 17.52 MW-hours translates into 12,741.686 pounds of $CO_2E$ per year, or 5.79 metric tons of $CO_2E$.

Operation of the two 8.5-kW LPG emergency backup generators for periodic testing would emit 1.4 $MTCO_2E$ per year.[138] The TCAPCD and SJVAPCD do not have significance thresholds for operational GHG emissions, but the SJVAPCD evaluates significance of GHG emissions based on use of performance-based standards or BPS.[139,140] BPS are expected to equal or exceed a 29-percent reduction in GHG emissions from stationary sources and development projects. Generators installed on utilities to provide emergency power in the event of a power outage are typically diesel-powered. However, the use of LPG-powered rather than diesel-powered generators is considered to be in accordance with BPS because LPG-powered generators produce at least 28 percent less $CO_2E$ emissions than diesel-powered generators. According to the USEPA, a large diesel-powered generator (500-kW) emits about 346 pounds of $CO_2$ per hour, while a dual-fuel generator using 95 percent natural gas and 5 percent diesel emits less than 250 pounds of $CO_2$ per hour.[141] Therefore, project-related operational emissions would be *less than significant.* Although proposed emergency generators would not be located within the jurisdiction of the BAAQMD, a comparison of project-related operational emissions of 1.2 $MTCO_2E$ per year to the BAAQMD's significance threshold of 1,100 $MTCO_2E$ per year for stationary sources[142] also indicate that operational GHG emissions from generator testing and maintenance would be *less than significant*.

Given that operational GHG emissions would be *less than significant*, the project would not conflict with the state's AB 32 goal and associated Scoping Plan estimates of reducing GHG emissions to 1990 levels by 2020, or with the CCSF Greenhouse Gas Reduction Ordinance's and associated SFPUC Climate Action Plan's goal of reducing GHG emissions by 25 percent below 1990 levels by 2017 and up to 80 percent below 1990 levels by 2050.

---

[138] This estimate is based two 8.5-kW emergency generators operating an average of 1 hour per week or 52 hours per year using 1 gallon per hour (8.5-kW under maximum load) for both generators, or 156 gallons per year of propane combustion, and 6 kg of $CO_2E$ per gallon of propane (CCAR, 2009).

[139] Email communication with Bill Sandman, Deputy Air Pollution Control Officer, TCAPCD, on November 3, 2011 regarding TCAPCD thresholds.

[140] SJVAPCD, 2009. *Final Staff Report Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act*, December 17, 2009.

[141] USEPA, 2009. *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. February 2009.

[142] BAAQMD, 2010. *CEQA Air Quality Guidelines*. June 2010, updated May 2011.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☒ | ☐ |

The project would not substantially affect wind or create new shadows that would affect outdoor recreation facilities or public areas. There are no outdoor recreation facilities or other public areas near project sites, other than adjacent streets at several sites. The only sites that are located in urban areas and frequented by the public are Roselle Cross Over, Oakdale Office, and Modesto 2 ATC. Of these sites, only the Oakdale Office would involve the construction of a new tower, and this tower would be a steel lattice or monopole type that would not substantially affect wind patterns or cast a substantial shadow on public or recreational areas because both light and wind would be able to penetrate the new tower. For these reasons, the project would have *no impact* on wind and shadow.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☒ | ☐ |

The nature of the project does not increase the use of neighborhood parks, regional parks, or other recreational facilities. The project does not propose the construction of housing or other features that would result in an increase in the use of existing recreational facilities. Additionally, the project does not propose the construction of new recreational facilities or require the expansion of existing recreational facilities. None of the project sites are in or immediately adjacent to any recreational facilities, which

would preclude any physical impacts to existing recreational resources. For these reasons, the project would have *no impact* on recreation.

———————————

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

The project would not create new demand for water nor would it generate wastewater requiring treatment. The project involves the installation of radio communications equipment only and would not require construction of new permanent water or wastewater services or facilities, and no connections to existing water services or sanitary sewers would be required. During construction, water would be supplied by water trucks, if necessary, and sanitary needs would be provided by portable sanitary equipment serviced by an outside contractor. Project operation and maintenance activities would involve periodic cleaning, maintenance of equipment, and testing of backup generators; no additional staffing would be required. Periodic cleaning of the PV panels would require only minimal amounts of water, which would be trucked in at sites without existing water service. Therefore, significance criteria 11a, 11b, 11d, and 11e above are *not applicable* to the project.

**Impact UT-1: The project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)**

As described under Impact HY-1 in Section E.15, *Hydrology and Water Quality*, temporary stormwater drainage facilities and perimeter controls such as small earthen berms, straw waddles, and silt fences may be installed to minimize sediment loads in site runoff and to contain potential hazardous materials releases. These temporary features would be removed following construction and would not otherwise cause unintended or significant environmental effects. As described under Impact HY-3, new permanent impervious surfaces at project sites would be small, resulting from concrete pads and tower foundations, and surrounded by gravel fill. The project would result in negligible changes in drainage patterns and would not require new permanent stormwater drainage facilities. Surrounding gravel ground cover or existing facilities would be adequate to handle stormwater flows at each of the project sites. Thus, the impact of construction, operation, and maintenance of the project would be *less than significant*.

**Impact UT-2: The project would be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs. (Less than Significant)**

Construction of the project would have limited solid waste disposal needs because it would not require the demolition of existing facilities or the disposal of substantial quantities of excavated soil. The majority of the solid waste would result from tower foundation excavations that would generate between 18 and 96 cubic yards of earth and rock spoils at each of 7 project sites, resulting in up to approximately 432 cubic yards for the project. Construction-related solid waste such as construction material packaging and debris, spent fuel or water tanks, pavement cuttings, and spoils /or deleterious soil material (e.g., excess dirt and rock from trenching and grading, brush, and debris) would require recycling or disposal, as applicable, in accordance with state and local solid waste regulations. Where offsite disposal of soil is required, a local disposal facility would be identified. Several regional disposal facilities are available to serve the project's waste disposal needs, including Forward Landfill (in Stockton), Fink Road Landfill (in Crows Landing), Foothill Sanitary Landfill (in Linden), North County Recycling Center and Sanitary Landfill (near Stockton), Vasco Road Sanitary Landfill (Alameda County), and Altamont Landfill (Alameda County).[143]

[143] CIWMB, 2012. Solid Waste Information System Database. http://www.calrecycle.ca.gov/SWFacilities/Directory/default.htm (accessed February 15, 2012).

Collectively, these landfills have well over 150,000,000 cubic yards of remaining capacity, accept all the types of waste likely to be generated by the project, and will remain open during project construction.[144]

During operation and maintenance, spent batteries (used to store power from photovoltaic panels) may need to periodically be disposed of; however, these would be disposed of in accordance with state and local regulations governing universal waste (i.e., "e-waste") and would not qualify as solid waste. For these reasons, the impact of construction, operation, and maintenance of the project would be *less than significant*.

**Impact UT-3: The project could have a substantial adverse effect related to compliance with federal, state, and local statutes and regulations related to solid waste. (Less than Significant with Mitigation)**

As described above under Impact UT-2, the project could require the disposal of up to 18 to 96 cubic yards of soil at each project site at which new towers would be installed, in addition to minor quantities of construction-related waste. No existing structures would require demolition or decommissioning to accommodate proposed facilities, thereby precluding the need to dispose of large quantities of solid waste due to demolition activities. Project operation and maintenance activities would not generate solid wastes requiring offsite disposal, but would require the occasional disposal of spent batteries, which would be disposed of according to regulations governing universal waste.

AB 939, known as the California Integrated Waste Management Act of 1989, required each city and/or county to reduce the amount of waste being disposed to landfills to 50 percent by 2000. As of 2006, the California Integrated Waste Management Board (CIWMB) estimated a diversion rate of 61 percent for Stanislaus County, 61 percent for San Joaquin County and 57 percent for Tuolumne County.[145] To ensure that all wastes are adequately characterized and disposed of according to proper regulations, and that the maximum diversion rate is achieved, Mitigation Measure M-UT-3 requires the SFPUC and/or its contractor to develop a Waste Management/Recycling Plan prior to the start of construction and implement plan measures to divert at least 50 percent of inert wastes during construction. With implementation of **Mitigation Measure M-UT-3**, **Waste Management/Recycling Plan**, this impact would be *less than significant*.

[144] Ibid.
[145] CIWMB, 2012. Solid Waste Information System Database. http://www.calrecycle.ca.gov/SWFacilities/Directory/default.htm (accessed February 15, 2012).

**Mitigation Measure M-UT-3: Waste Management/Recycling Plan**

The SFPUC shall prepare, or require its contractor to prepare, a Waste Management Plan identifying the types of wastes that would be generated by project construction and how all waste streams would be handled. In accordance with the priorities of AB 939, the plan shall emphasize source reduction measures followed by recycling and composting methods to reduce the amount of waste being disposed of in landfills. The plan shall specify that at least 50 percent of inert solids (asphalt, concrete, dirt, fines, rock, sand, and soil) must be diverted from landfills. Upon completion, the contractor shall document achievement of the stated waste reuse and recycling goals.

**Impact C-UT: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, could result in a cumulative impact on utilities and service systems. (Less than Significant)**

The geographic scope of potential cumulative utilities and service systems impacts consists of the project sites and immediate vicinities, the service areas of regional utility providers, and landfills in the project region.

As described above, the SJVCS project would not construct any permanent stormwater drainage facilities; therefore, it would not contribute to any potential cumulative environmental impact in this regard. Project construction would generate up to approximately 432 cubic yards of earth and rock spoils that would require off-site disposal. Other cumulative projects also would contribute an unknown quantity of solid waste to the region's sanitary landfills which, collectively, have approximately 150 million cubic yards of remaining capacity. The proposed project, in combination with the other cumulative projects, could result in a cumulative impact on landfill capacity. However, the SJVCS project's incremental contribution to regional landfills represents a miniscule fraction of the available landfill capacity and would not be cumulatively considerable *(less than significant*). Nevertheless, with implementation of mitigation measure M-UT-3, Waste Management/Recycling Plan, the project would be required to divert at least 50 percent of its inert solids from regional landfills.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☐ | ☒ |

The project involves the installation of radio communication equipment, primarily at existing facilities within the SFPUC ROW, which would not include structures for human occupancy[146] and would not be accessible to the public. No additional workforce would be needed for project operation and maintenance. This type of development would not require an increase in fire protection services or the expansion of other public services (including police protection, schools, and/or parks). Therefore, this impact criterion is *not applicable* to the project.

———————————

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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, or 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? | ☐ | ☒ | ☐ | ☐ | ☐ |

[146] 14 CCR Section 3601(e) defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| 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

The approach to analysis for this project is as follows: (1) review available biological resource surveys; (2) review special-status species lists derived from the California Natural Diversity Database (CNDDB), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG) (renamed the California Department of Fish and Wildlife [CDFW] effective January 1, 2013) and California Native Plant Society (CNPS); and (3) perform a field reconnaissance of all project sites, including site inspections to verify previous survey findings and record current site conditions.

### *Previous Biological Resource Surveys*

Certain project sites located at existing SFPUC facilities within the SJPL ROW have been previously surveyed for biological resources, including special-status wildlife and flora, waters of the United States, and other sensitive natural communities. Focused and reconnaissance-level surveys performed from 2006 to 2008 include project sites located between the Oakdale Portal and Tesla Portal. Proposed project sites located at Red Mountain Bar, Rock River Lime Plant, Transmission Tower 122N, Oakdale Office, Modesto 2 ATC, Mt. Diablo SBA, and Sunol Ridge ATC were not previously surveyed, but were surveyed for this project analysis.

The following documents were reviewed and referenced to support the analysis of potential environmental impacts of the project:

- *SFPUC SJPL System Project Final EIR*[147]
- *Jurisdictional Delineation for the SJPL Project*[148]
- *Botanical Survey Report for the San Joaquin Pipeline System*[149]
- *SJPL System Project Existing Conditions Report*[150]
- *Hetch Hetchy Communication System Upgrade Project EA/Preliminary MND and IS*[151]
- *SFPUC San Antonio Backup Pipeline Project Terrestrial Habitat Assessment*[152]
- *SFPUC SJPL System Project Rehabilitation of Existing San Joaquin Pipelines MND* (Portions of Tuolumne, Stanislaus and San Joaquin counties, and the cities of Riverbank and Modesto)[153]

The findings of these previous biological resources surveys were used to compile the list of special-status species that may occur at project sites (see **Appendix C**).

### *Special-status Species Lists*

Special-status species lists were derived from the CNDDB, USFWS, CDFG, and CNPS for Waterford, Riverbank, Salida, Ripon, Niles, Chinese Camp, Moccasin, Knights Ferry, Keystone, Tracy, and Tassajara 7.5-minute U.S. Geological Survey quadrangles (CNDDB lists also include species that would occur within eight surrounding quadrangles of each quadrangle listed). The primary sources of data referenced for this study include:

- Federal Endangered and Threatened Species that May be Affected by Projects in the Waterford, Riverbank, Salida, Ripon, Niles, Chinese Camp, Moccasin, Knights Ferry, Keystone, Tracy, and Tassajara, California 7.5-minute topographic quadrangles[154]
- CNPS, Online Inventory of Rare and Endangered Plants[155]

---

[147] San Francisco Planning Department, 2009. *San Joaquin Pipeline System Project Final Environmental Impact Report*. Prepared for the SFPUC. July 2009.
[148] URS, 2008. *Jurisdictional Delineation for the San Joaquin Pipeline Project*. Prepared for the SFPUC. May 30, 2008, amended in 2009.
[149] May & Associates, 2006, 2007, and 2008. *Botanical Survey Report for the SJPL System*. Prepared for the SFPUC.
[150] URS + ATS, 2008. *San Joaquin Pipeline System Project Existing Conditions Report*. Prepared for the SFPUC. June 2008.
[151] San Francisco Planning Department, 2007. *Hetch Hetchy Communications System Upgrade Project Environmental Assessment/Preliminary Mitigated Negative Declaration and Initial Study*. Prepared for the SFPUC. October 2007.
[152] ESA, 2011. *San Antonio Backup Pipeline Project Terrestrial Habitat Assessment*. Prepared for the SFPUC. January 2011.
[153] San Francisco Planning Department, 2010. *San Joaquin Pipeline System Project Rehabilitation of Existing San Joaquin Pipelines Mitigated Negative Declaration.* Prepared for the SFPUC. August 4, 2010, amended November 2, 2010.
[154] USFWS, 2012. Federal Endangered and Threatened Species that Occur in or May be Affected by Projects in the Waterford, Riverbank, Salida, Ripon, Niles, Chinese Camp, Moccasin, Knights Ferry, Keystone, Tracy, and Tassajara, U.S. Geological Survey 7.5-minute Quadrangles. USFWS Endangered Species Division. http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm.
[155] CNPS, 2012. Inventory of Rare and Endangered Plants (online edition, v7-12jan 1-11-12 and v7-12feb 2-21-12). Sacramento, California. http://www.cnps.org/cnps/rareplants/inventory/ (accessed February 7, 2012).

- CNDDB, Rarefind 4 computer program[156]
- Threatened and Endangered Plants List[157]
- Threatened and Endangered Animals List[158]
- Ecological Subregions of California[159]

The findings of these database searches and species lists were used to compile the list of special-status species that may occur at project sites (Appendix C).

### *Reconnaissance Survey*

Biological resources within the project sites were verified by an ESA biologist through field reconnaissance conducted on November 31, 2011 and December 1, 2011. Prior to the reconnaissance surveys, a review of previous surveys and other pertinent literature and database queries was conducted for the project sites and surrounding area. The field reconnaissance consisted of a pedestrian survey within each project site's boundary and visual observations of adjacent access roads. Field surveys focused on identifying and verifying previously identified habitat for special-status plant and wildlife species. General habitat conditions were noted and incidental species observations were recorded. The findings of the reconnaissance survey were used to compile the list of special-status species that may occur at project sites (Appendix C) and to characterize the local project setting, described below.

## Environmental Setting

### *Regional Setting*

The project is located in the northern San Joaquin Valley of California and traverses portions of Tuolumne, Stanislaus, San Joaquin, Contra Costa and Alameda counties. Land uses in the vicinity of the project sites are characterized by undeveloped land for grazing, land developed for intensive agriculture, and urban areas. Level, well-drained soils on the valley floor have been largely converted to agricultural or urban land uses, while the poorly drained soils with hardpans or claypans are typically used for cattle grazing. Conversion of natural habitat to agricultural, residential, and commercial land uses has altered

[156] CDFG, 2012. California Natural Diversity Database Rarefind 4. Biogeographic Data Branch, Sacramento, CA. Data dated February 7, 2012.
[157] CDFG, 2012. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic Data Branch, Sacramento, CA. Data dated January 2012.
[158] CDFG, 2012.State and Federally Listed Endangered &Threatened Animals of California. Biogeographic Data Branch, Sacramento, CA. Data dated January 2011.
[159] Miles, S, R. and C.B. Goudey, 1997. *Ecological Subregions of California: Section and Subsection Descriptions*. USDA Forest Service, Pacific Southwest Region Publication R5-EM-TP-005. San Francisco, CA.

the landscape through the removal of trees and native vegetation, the introduction of non-native species, and the modification of natural watercourses.

Habitat types typical of the region include California annual grasslands, irrigated pasture and croplands, oak woodlands, vernal pool and swale complexes, seasonal seeps and marshes, seasonal ponds, riparian forest and scrub, perennial streams, and scattered areas of ruderal vegetation. These habitat types provide a diverse setting for plants and animals within the region, as well as migratory corridors for wildlife. For complete descriptions of habitats within the project area, refer to the biological studies referenced in this section. Habitat descriptions for sites are discussed in Section B of this IS, *Project Setting*.

Maze Boulevard forms the northern border of the San Joaquin River National Wildlife Refuge (NWR) in the vicinity of the San Joaquin Valve House (Site 15). Thus, the San Joaquin Valve House is located close to but outside of the NWR, north of the San Joaquin River.[160] The refuge provides habitat for a variety of special-status species, including the riparian brush rabbit (*Sylvilagus bachmani riparius*), cackling (Aleutian Canada) goose (*Branta hutchinsii leucopareia*), conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Swainson's hawk (*Buteo swainsoni*). The refuge also provides important migration and breeding habitat for a number of migratory land birds. Although the San Joaquin Valve House site is within the NWR, the site itself is developed and provides low value to wildlife.

Elevations in the project area vary as the project sites are distributed from the Sierra Nevada foothills to the San Joaquin Valley, and continue west to the Coast Ranges. Elevations range from 2,940 feet above mean sea level (amsl) at the Moccasin Peak site to 747 feet amsl at the Oakdale Portal site to approximately 280 feet amsl at Emery Cross Over site to a low of approximately 25 feet amsl at the Pelican Cross Over site, located west of the San Joaquin River. The Tesla Treatment Facility Tower site is at an elevation of approximately 399 feet amsl, with the adjacent hillside reaching 515 feet.

The Mediterranean climate of the San Joaquin Valley is characterized by hot arid summers and cool wet winters. Temperatures vary widely based on elevation and topography, but can range from over 100°F in the summer to below freezing in the winter. Precipitation in the project area occurs seasonally, with the majority of rain falling between October and April. Average annual precipitation ranges from

[160] San Francisco Planning Department, 2010. *San Joaquin Pipeline System Project Rehabilitation of Existing San Joaquin Pipelines Mitigated Negative Declaration.* Prepared for SFPUC. August 4, 2010, amended November 2, 2010.

approximately 10 to 20 inches, depending on elevation and aspect (i.e., the direction that the slope faces).[161]

### *Local Project Setting*

The project comprises 20 sites, most of which contain developed, barren, annual grassland or ruderal habitats. Typical habitat types within or adjacent to the project sites include California annual grassland, agriculture (irrigated pasture and croplands, orchards, and vineyards), developed or landscaped land, blue oak woodland, and barren or ruderal. Other natural habitats occurring in the vicinity of the project sites include vernal pool and swale complexes, seasonal seeps and marshes, seasonal ponds, riparian forest and scrub, and perennial streams; these habitats may support special-status species. No special-status wildlife or plant species were observed within or adjacent to the project sites. Current site conditions are described below, as well as references to previous studies that provide in-depth descriptions of each site (where available).

- **Moccasin Peak (Site 1).** Moccasin Peak is located within the Sierra Nevada foothills, near the intersection of SR 49 and SR 120. The site is surrounded by habitat types common to the Sierra Nevada foothills such as chamise chaparral, foothill pine-oak woodland, and California annual grassland. Habitats within the project boundary include ruderal grassland and a developed, compacted gravel pad.

- **Red Mountain Bar (Site 2).** This project site is situated immediately adjacent to Don Pedro Reservoir. The site is composed of an access road and gravel parking pad on the south side and an access road and a low terrace on the northern portion of the site. The Red Mountain Bar site is primarily developed (gravel pad and graveled access roads), with some areas of annual grassland and ruderal grassland. Habitats in the vicinity of the project site include blue oak/grey pine woodland, annual grassland, and lacustrine (Don Pedro Reservoir).

- **Transmission Tower 122N (Site 3).** Habitats within the Transmission Tower 122N site are characterized by a mixture of California annual grassland (predominantly) and ruderal grassland used for cattle grazing. Scattered blue oaks and rock outcrops occur in the vicinity of the project site and a dirt road provides access to the project site.

- **Rock River Lime Plant (Site 4).** The Rock River Lime Plant site is situated on a man-made low terrace, within an area characterized by undulating hills of blue oak woodland and annual grassland typical of the Sierra Nevada foothills. Habitats within the project boundary include ruderal grassland and barren ground. Several small mammal burrows were observed along the slope of the hillside east of the site and within the site; however, no signs of burrowing owl were observed.

[161] Miles and Goudey, 1997. *Ecological Subregions of California: Section and Subsection Descriptions*. USDA Forest Service, Pacific Southwest Region Publication R5-EM-TP-005. San Francisco, CA.

- **Oakdale Portal (Site 5).** Habitats within the Oakdale Portal site include a 1.5-feet-wide unnamed seasonal stream, California annual grassland, developed, ruderal grassland, and barren. Several seasonal seeps, seasonal streams, and seasonal wetlands are present within the blue oak woodlands in the vicinity of the project site.[162] During recent reconnaissance surveys, the project site was disturbed and barren as a result of the implementation of the SJPL System Project. The seasonal stream was mostly dry with a few ponded areas. Access roads to the site are graveled and barren. The new tower would be located north of the seasonal stream, in a barren area. The waveguide bridge would cross above the stream to Valve House No. 3. Project activities are anticipated to take place within previously disturbed areas outside of aquatic habitat and would not affect aquatic habitat.

- **Throttle Station 1-3 (Site 6).** During recent reconnaissance surveys, Throttle Station 1-3 was partially disturbed by construction work related to the SJPL System Project. The eastern half of the project area is barren due to pipeline construction; the western portion of the site contains a barren gravel pad with some annual grassland along the perimeter of the project site. One seasonal wetland occurs just west of the project boundary; the wetland appears to drain through a culvert underneath the access road and into an unnamed seasonal stream. This wetland feature would be avoided by project activities.

- **Throttle Station 2 (Site 7).** Habitats within the Throttle Station 2 site include a developed gravel yard enclosed by a fence and vehicle gate; the existing facilities are surrounded by annual grassland used for cattle grazing. An established gravel road provides access to the site. A seasonal wetland occurs north of the site and would be avoided by project activities.

- **MP 56.51 Tie-In (Site 8).** California annual grassland is the predominant habitat type within the MP 56.51 Tie-In site. A gravel road provides access to the project site. Surrounding habitat is also predominantly California annual grassland; scattered vernal pools, seasonal wetlands, seasonal swales, and seasonal streams occur within 1 mile west of the project site.[163] During recent reconnaissance surveys, the project site was barren and under construction from the SJPL System Project.

- **Emery Cross Over (Site 9).** During recent reconnaissance surveys, the entire project area at Emery Cross Over was barren or otherwise disturbed by construction work related to the SJPL System Project. Adjacent habitats include a mixture of California annual grassland and ruderal grassland, and disked agricultural fields. Aquatic habitats such as seasonal wetland, seasonal swale, and vernal pool occur within ¼ mile east of the project site.[164] A dirt road provides access to the project site.

- **Warnerville Yard (Site 10).** The Warnerville Yard site is surrounded by actively managed agricultural fields containing a mixture of non-native annual grassland and ruderal vegetation.[165] The entire project site is developed (paved or compacted gravel pads). During recent reconnaissance surveys, small mammal burrows were observed at the foot of the existing power transmission tower. One owl pellet was observed nearby; however, no signs of burrowing owl activity (e.g., white wash, feathers) or burrowing owls were observed.

[162] San Francisco Planning Department, 2009. *San Joaquin Pipeline System Project Final Environmental Impact Report*. Prepared for the SFPUC. July 2009.
[163] Ibid.
[164] Ibid.
[165] San Francisco Planning Department, 2008. *Final Mitigated Negative Declaration, Hetch Hetchy Communication System Upgrade Project*. April 1, 2008.

- **Oakdale Office (Site 11).** The Oakdale Office site is fully developed and is surrounded by urban habitats. The site contains a gravel pad and is devoid of vegetation. Adjacent habitats include ruderal, urban, and barren. Surrounding trees include ornamental species [ash (*Fraxinus* sp.), citrus (*Citrus* sp.), and tree of heaven (*Ailanthus altissima*)] and native species such as Northern California black walnut (*Juglans hindsii*) and oak (*Quercus* sp.).

- **Albers Road Valve House (Site 12).** The site at Albers Road Valve House is fully developed and contains gravel/dirt pads; it is for the most part devoid of vegetation. Ruderal vegetation grows sparsely along the perimeter of the site and in areas less heavily used. Surrounding habitat include annual grassland used for cattle grazing, almond orchards, and rural residential. One mature eucalyptus tree exists north of the site (approximately 300 feet); no raptor nests were observed within the tree.

- **Roselle Cross Over (Site 13).** The Roselle Cross Over site is predominantly barren or otherwise paved, landscaped, or compacted with gravel. The site is situated in an urban landscape, and is flanked by a row of mature eucalyptus trees to the north and a ruderal grassland field to the south (used as grazing land for horses).[166] The Modesto Irrigation District Main Canal is a lined canal located just east of the project boundary. During recent reconnaissance surveys, small mammal burrows were observed along the earthen levee on the east side of the canal. The burrows would provide suitable habitat for burrowing owls; however, no burrowing owls or signs of burrowing owls were observed. No active raptor nests were observed within the eucalyptus trees.

- **Modesto 2 ATC (Site 14).** This project site is completely developed (gravel pad); adjacent habitats include urban/paved/graveled pads, paved roads and highways, railroads, annual grassland, ruderal grassland, and disked fields. Several mature ornamental trees occur approximately 400 feet to the south and 200 feet to the east of the project site. No evidence of bird nesting was noted during the reconnaissance surveys at this site; however, these trees may provide suitable nesting habitat for raptors and other bird species.

- **San Joaquin Valve House (Site 15).** The San Joaquin Valve House site is situated north of Maze Blvd. The site is predominantly barren or compacted with gravel and contains several oak and ornamental trees. A potential seasonal wetland occurs just east of the existing tower and appears to collect water from surrounding runoff during the winter months (this feature has not been formally delineated and verified by the U.S. Army Corps of Engineers (USACE)). This feature would be avoided by the project activities. Surrounding habitats include annual grassland to the north and riparian forest/scrub to the south.[167] The San Joaquin River is situated within ¼ mile south of the project site.

- **Pelican Cross Over (Site 16).** The entire project site at Pelican Cross Over is agricultural land; it is currently barren or otherwise disturbed due to construction activities related to the SJPL System Project. Adjacent habitat includes agriculture (vineyard); other habitats in the vicinity include barren earthen and paved irrigation channels. Approximately ¼ mile east of the project site is the San Joaquin River and associated wetlands, blue oak woodland, and riparian forest/scrub.[168]

[166] San Francisco Planning Department, 2009. *San Joaquin Pipeline System Project Final Environmental Impact Report*. Prepared for the SFPUC. July 2009.
[167] Ibid.
[168] Ibid.

- **Tesla Treatment Facility Tower (Site 17).** California annual grassland (used for cattle grazing) is the dominant habitat type surrounding the Tesla Treatment Facility Tower site. Within the project site, ruderal and annual grassland occur at the perimeter of the site near the fence line, while the interior portion of the site is a compacted gravel pad. An artificial stream and artificial seasonal wetland are present in the vicinity of the project site; these features were created as a result of water system discharges at the Tesla Treatment Facility Tower and do not fall under the jurisdiction of the USACE or the state. These findings were summarized in the Jurisdictional Delineation for the SJPL Project[169] and verified by the USACE on November 25, 2009. A natural seasonal stream also occurs in the vicinity of the project area, south of the mentioned artificial aquatic features.[170] This feature would be avoided by the project.

- **Mt. Diablo SBA (Site 18).** The Mt. Diablo SBA site is barren (dirt pad) with annual grasses and ruderal plant species growing at the perimeter of the fence line surrounding existing facilities. A gravel road provides access to the project site. Surrounding habitats include annual grassland and scattered oak woodlands in an undulating landscape. The location of the proposed antenna is currently barren and devoid of vegetation.

- **Sunol Ridge ATC (Site 19).** This project site is mostly developed, with a few areas that support ruderal vegetation. Surrounding habitats include disked fields and oak woodlands. The proposed location of the antenna is completely developed (paved).

- **Calaveras Substation (Site 20).** The Calaveras Substation site is fully developed (compacted gravel pad with sparse ruderal vegetation) and landscaped with ornamental shrubs. Other habitats in the vicinity of the project area include non-native annual grassland, ruderal grassland, lacustrine, freshwater marsh/seasonal wetland, oak woodland, coastal sage, and riparian habitat.[171] Although the project is located relatively close to several sensitive habitat types, project activities will be contained within the project footprint and are not anticipated to impact aquatic habitats, oak woodlands, or other sensitive habitats.

### Wetlands and Other Waters of the United States

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines wetlands in Section 404 of the Clean Water Act as "areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3).

Under normal circumstances, the federal definition of wetlands requires the presence of three identification parameters: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the United States.

[169] SFPUC, 2008. *Jurisdictional Delineation for the SJPL Project*. May 30, 2008; as amended 2009.
[170] San Francisco Planning Department, 2009. *San Joaquin Pipeline System Project Final Environmental Impact Report*. Prepared for the SFPUC. July 2009.
[171] ESA, 2011. *San Antonio Backup Pipeline Project Terrestrial Habitat Assessment*. Prepared for the SFPUC. January 2011.

The Porter-Cologne Water Quality Control Act Section 13260 of the California Water Code requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Water Quality Control Act definition, the term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—in California, waters of the United States represent a subset of waters of the state. Therefore, the State of California through each of nine Regional Water Quality Control Boards retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under Clean Water Act Section 404.

Potentially jurisdictional wetlands and other waters of the United States and waters of the State occur within or adjacent to project sites at the following locations: Oakdale Portal (**Figure 4-1**); Throttle Station 1-2 (**Figure 4-2**); Throttle Station 2 (**Figure 4-3**); and San Joaquin Valve House (**Figure 4-4**). Proposed project activities are not planned to occur within potentially jurisdictional wetland features.

### Special-Status Species

Special-status species are plants and animals that are legally protected under state and federal Endangered Species Acts or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. A list of special-status plant and animal species that have the potential to occur within the vicinity of the project area was compiled based on data described above in *Approach to Analysis;* Appendix C lists special-status plants and animals, their preferred habitats, and their potential to occur in the project area. Conclusions regarding habitat suitability and species occurrence are based on the results described in previous studies and reconnaissance surveys conducted by ESA on November 31-December 1, 2011, as well as the analysis of existing literature and databases described above.

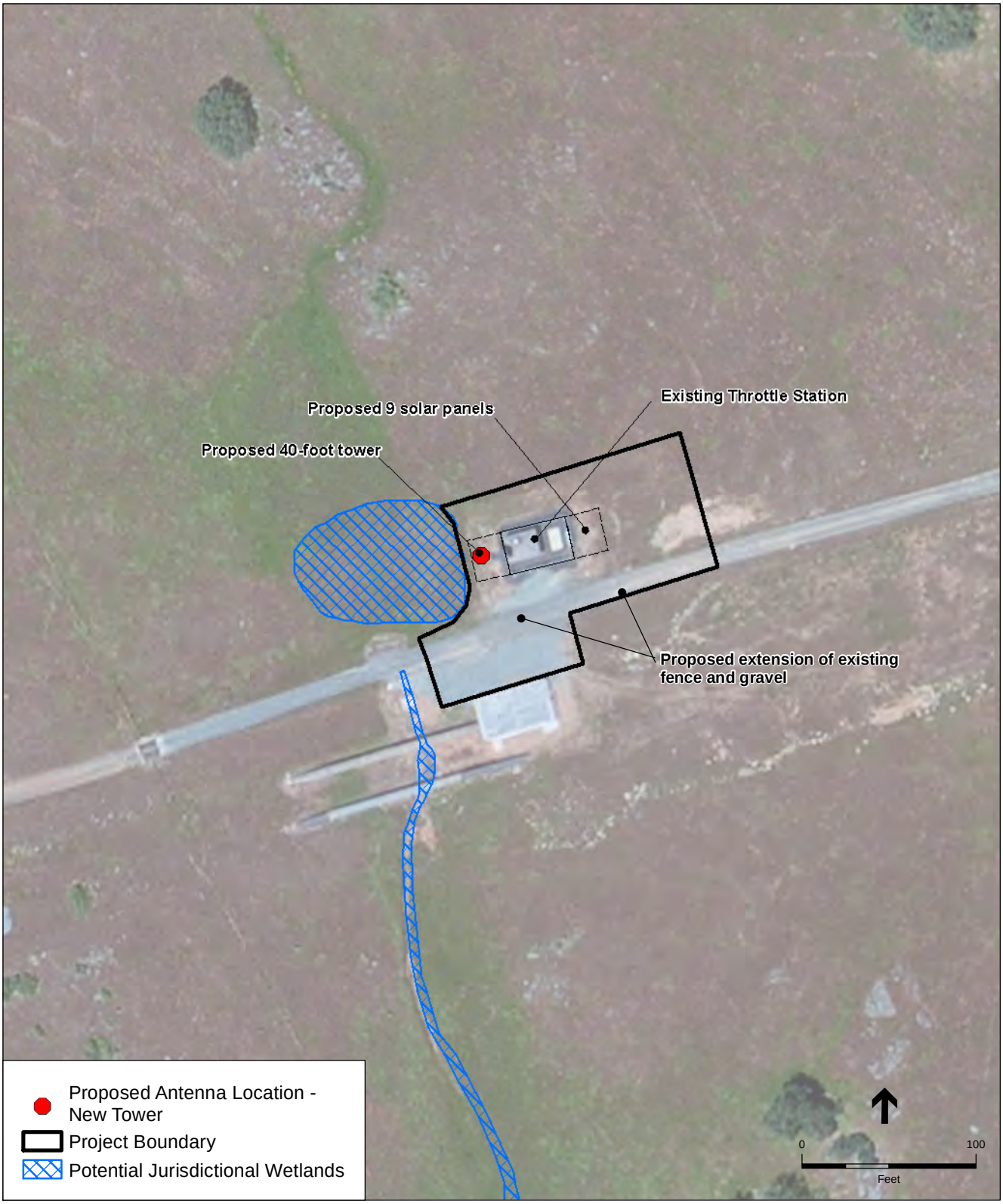
Only species with a potential for occurrence are listed in Appendix C and are further discussed in this section. Species unlikely to occur within the project area due to lack of suitable habitat or range were eliminated from the discussion. Special-status plant species considered to have a low potential for occurrence, and which were not identified during prior botanical surveys or during recent reconnaissance surveys for this project were also eliminated from further discussion. Aquatic habitat suitable for fish species occurs in the San Joaquin River and the Stanislaus River; however, these habitats do not occur immediately adjacent to any project sites. All project activities will take place within the project footprint


SOURCE: ESRI, 2011; Goodman Networks, 2010; URS, 2008

San Joaquin Valley Communication System Upgrade Project

**Figure 4-1**

Potential Jurisdictional Wetlands - Oakdale Portal (Site 5)




SOURCE: ESRI, 2011; Goodman Networks, 2010; URS, 2008

San Joaquin Valley Communication System Upgrade Project

**Figure 4-2**

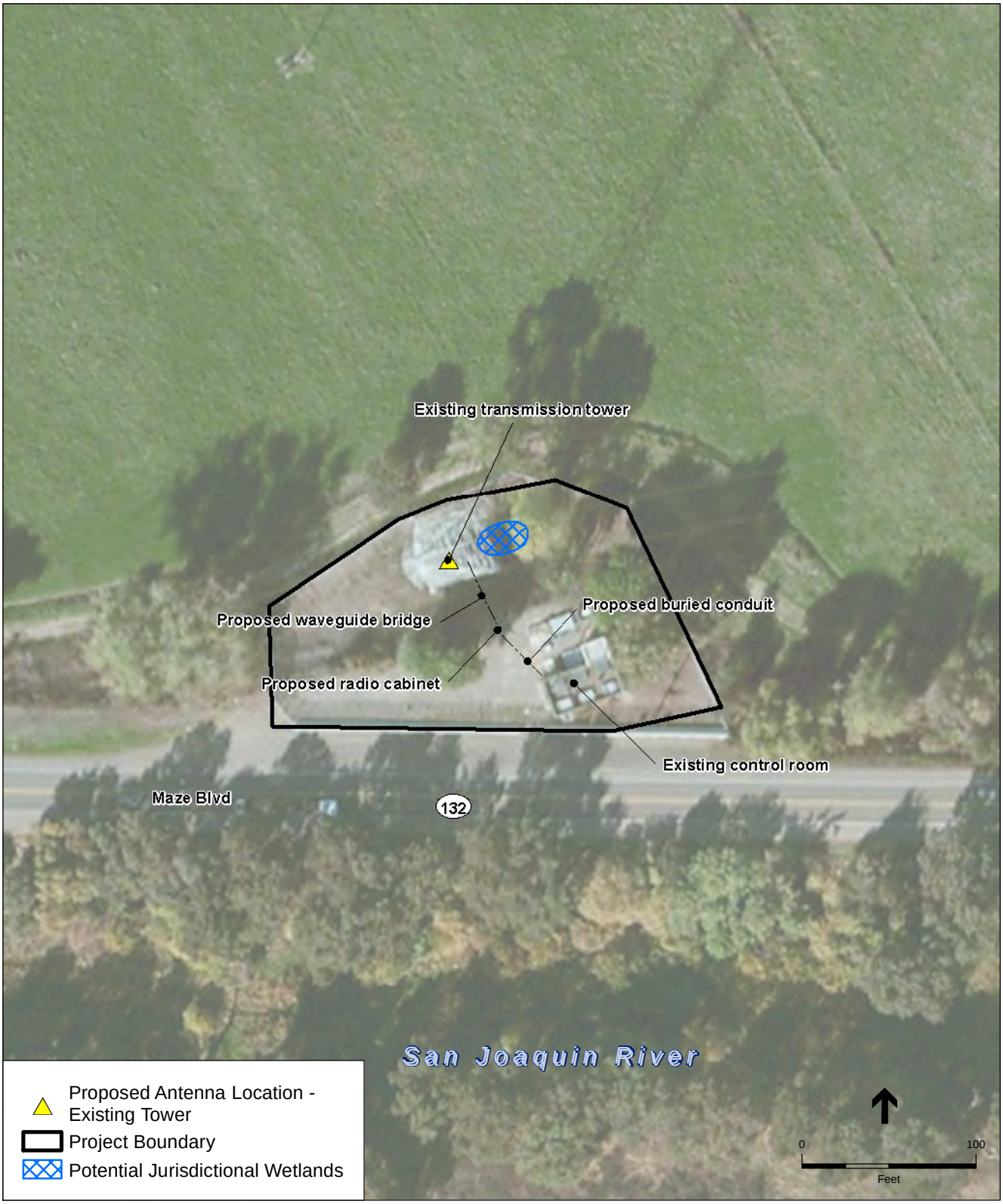
Potential Jurisdictional Wetlands - Throttle Station 1-3 (Site 6)


SOURCE: ESRI, 2011; Goodman Networks, 2010; URS, 2008

San Joaquin Valley Communication System Upgrade Project

**Figure 4-3**

Potential Jurisdictional Wetlands - Throttle Station 2 (Site 7)




SOURCE: ESRI, 2011; Goodman Networks, 2010

San Joaquin Valley Communication System Upgrade Project

**Figure 4-4**

Potential Jurisdictional Wetlands - San Joaquin Valve House (Site 15)

(refer to Project Description and associated figures in Section A) and are not anticipated to affect any bodies of water; thus, *no impacts* to fish would occur. Special-status fish species are not included in Appendix C and were eliminated from further discussion. No project sites were determined to have a high potential for the presence of special-status species, whereas the following special-status species were determined to have a moderate potential to occur within or adjacent to certain project sites:

- **Special-Status Amphibians and Reptiles:**
  San Joaquin coachwhip (=whipsnake) (*Masticophis flagellum ruddocki*)
  California tiger salamander (*Ambystoma californiense*) (Federally Threatened species)
  Foothill yellow-legged frog (*Rana boylii*)
  California red-legged frog (*Rana draytonii*) (Federally Threatened species)
  Western spadefoot toad (*Spea hammondii*)

- **Special-Status Birds:**
  Cooper's hawk (*Accipiter cooperii*)
  Sharp-shinned hawk (*Accipiter striatus*)
  Western burrowing owl (*Athene cunicularia*)
  Swainson's hawk (*Buteo swainsoni*) (California Threatened species)
  White-tailed kite (*Elanus leucurus*) (California Fully Protected species)
  California horned lark (*Eremophila alpestris actia*)
  Osprey (*Pandion haliaetus*)

**Impact BI-1: The project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. (Less than Significant with Mitigation)**

During construction, the project could have potentially significant adverse impacts to 12 special-status species that have a moderate potential to occur within or adjacent to the project sites. Although the species listed above have not been observed within or immediately adjacent to the project sites during recent reconnaissance surveys, habitat that may support the presence of these species occurs adjacent to or within the project sites. Given that some species have been observed in the vicinity of the project by previous biological resource surveys or reported in CNDDB records (Appendix C), there is a moderate potential for them to occur within or adjacent to the project sites. Project activities at certain sites have the potential to adversely affect special-status species and their associated habitat through habitat modification, disruption of nesting efforts, or interference with wildlife movement; this would be *potentially significant*. However, it should be noted that these potential impacts would be site-specific

depending on presence of suitable habitat and the nature of the proposed construction activities (extent of disturbance). Implementation of the mitigation measures listed below at the specified project sites would reduce potential impacts to special-status wildlife to a *less-than-significant* level by avoiding and reducing habitat disturbance where feasible, implementing measures to reduce disturbance to nesting raptors (if present within 500 feet of the project), and excluding wildlife from entering project sites as necessary.

At some project sites, proposed construction activities would occur within developed areas and established access roads, and work activities would result in minor ground disturbance (e.g., installation of antennas and conduits). Specifically, proposed activities would not affect special-status species at the following project sites: Transmission Tower 122N, Warnerville Yard, Oakdale Office, Albers Road Valve House, Modesto 2 ATC, and Pelican Cross Over.

Information on potential project impacts to special status species and associated habitat is presented in the following subsections: Special-status Amphibian and Reptile Species, and Special-status Bird Species.

### *Special-status Reptile and Amphibian Species*

**San Joaquin coachwhip (=whipsnake).** San Joaquin coachwhip occurrences were recorded at three locations within 5 miles of the Tesla Treatment Facility Tower and Mt. Diablo SBA sites between 1980 and 2000.[172] There is potential for this species to occur in California annual grassland habitat in the vicinity of these sites. San Joaquin coachwhip is unlikely to use habitats within these project sites (compacted gravel pad and barren dirt pad); however, it is expected to occur occasionally adjacent to the project sites and could potentially move into the project area.

**California Tiger Salamander.** Larval California tiger salamanders (CTS) have been observed within 5 miles of the Emery Cross Over and Oakdale Portal sites. Additionally, the CNDDB contains numerous records of CTS occurrences in the vicinity of the Calaveras Substation, Mt. Diablo SBA, and Sunol Ridge ATC sites[173]. These project sites do not provide suitable upland or aquatic habitat for CTS; however, nearby grassland and woodland habitats provide suitable upland habitat and may support CTS. Based on the number and proximity of occurrences, this species may sporadically occur in and near the project sites described above. Although upland habitat occurs at other project sites, CTS are not anticipated based on the distance from suitable breeding habitat and the described distribution of this species.

[172] CNDDB, 2012.
[173] Ibid.

**Foothill yellow-legged frog.** Foothill yellow-legged frog is known to occur and was observed near the Oakdale Portal site in 2006. The seasonal stream that flows through the Oakdale Portal site may provide suitable habitat for this species; however, foothill yellow-legged frog has not been observed within the stream during previous or recent reconnaissance surveys.

**California red-legged frog.** Numerous California red-legged frog (CRLF) observations were recorded near the Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation sites.[174] Each of these project sites occurs within 1 to 2 miles of potential CRLF breeding sites, and therefore the sites are within the described dispersal distance for this species. However, no suitable breeding or non-breeding aquatic habitat occurs within 300 feet of the project sites.

Based on the number and proximity of occurrences, this species is expected to occasionally occur near the project sites, but is not expected to occur within these project site areas due to the developed nature of the sites and the absence of suitable nearby aquatic habitat.

**Western spadefoot toad.** The seasonal stream and aquatic habitat in the vicinity of Oakdale Portal site may provide suitable habitat for western spadefoot toad; however, this stream and other aquatic habitats would be completely avoided by the project. The Throttle Station 1-3 and Throttle Station 2 sites are primarily developed; however, each site is situated adjacent to a seasonal wetland, which may provide suitable breeding habitat for western spadefoot toad during winter rains. These seasonal wetland features would be completely avoided by the project. Western spadefoot toad observations have been recorded in grassland habitat in the vicinity of the MP 56.51 Tie-In and Emery Crossover sites, and within 5 miles of Tesla Treatment Facility Tower site. Emery Crossover is unlikely to support western spadefoot toad as the site is completely disturbed due to construction activities related to the SJPL System Project; additionally, adjacent habitat is primarily disked fields with limited areas of annual grassland/ruderal grassland. Although there is a small seasonal stream and seasonal wetland present in the vicinity of Tesla Treatment Facility Tower site, the shallow water depth, lack of emergent or riparian vegetation, and lack of connectivity to other aquatic habitats makes use of this site by amphibian species unlikely.

Most project sites do not contain suitable or preferred habitat for special-status amphibian and reptile species. However, where suitable aquatic and upland habitats occur adjacent to a project site (namely, at Oakdale Portal, Throttle Station 1-3, and Throttle Station 2 and to a lesser extent at MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation),

[174] Ibid.

project construction has the potential to adversely affect special-status amphibian and reptile species and their associated habitat through indirect impacts such as reduced water quality, disruption of reproductive efforts to species sensitive to human disturbance, or interference with movement; this would be *potentially significant*. However, with implementation of **Mitigation Measures M-BI-1a, Designated Work Areas, Vehicle Access, and Equipment Staging Areas; M-BI-1b, Pre-Construction Surveys for Special-Status Amphibians and Reptiles; M-BI-1c, Wildlife Exclusion Fencing and Construction Monitoring;** and **M-BI-1d**: **Mandatory Biological Resources Awareness Training** at Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation, potentially significant impacts on special-status amphibian and reptile species aquatic habitat would be completely avoided and protected and, where upland habitat exists, wildlife avoidance and/or exclusion measures would be implemented to reduce the potential for impacts on special-status amphibian and reptile species to *less than significant*. Specific mitigation measures that are required at each site are summarized in **Table 16**.

**TABLE 16**
**SUMMARY OF MITIGATION MEASURES FOR SPECIAL-STATUS WILDLIFE SPECIES**

| Project Site No. and Name | M-BI-1a – Defined Work Areas | M-BI-1b - Preconstruction Amphibian Survey | M-BI-1c – Fencing and Construction Monitoring | M-BI-1d – Awareness Training | M-BI-1e – Nesting Bird Surveys | M-BI-1gf– Burrowing Owl Survey | M-BI-3 – Wetland Protection |
|---|---|---|---|---|---|---|---|
| 1. Moccasin Peak | | | | | ● | | |
| 2. Red Mountain Bar | | | | | ● | | |
| 4. Rock River Lime Plant | | | | | ● | | |
| 5. Oakdale Portal | ● | ● | ● | ● | ● | | ● |
| 6. Throttle Station 1-3 | ● | ● | ● | ● | | | ● |
| 7. Throttle Station 2 | ● | ● | ● | ● | | | ● |
| 8. MP 56.51 Tie-In | ● | ● | ● | ● | | ● | |
| 9. Emery Cross Over | ● | ● | ● | ● | | | |
| 13. Roselle Cross Over | | | | | ● | ● | |
| 15. San Joaquin Valve House | | | | | ● | | ● |
| 17. Tesla Treatment Facility Tower | ● | ● | ● | ● | ● | | |
| 18. Mt. Diablo SBA | ● | ● | | ● | | | |
| 19. Sunol Ridge ATC | ● | ● | | ● | | | |
| 20. Calaveras Substation | ● | ● | ● | ● | | | |

Project operation and maintenance would include cleaning and inspection of radio equipment, as well as testing of backup generators, every three months. The potential impact on special status amphibian and reptile species from these activities would be *less than significant*.

**Mitigation Measure M-BI-1a: Designated Work Areas, Vehicle Access, and Equipment Staging Areas**

This measure shall be implemented during construction at the **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation**. Construction specification drawings shall illustrate site boundaries, staging area locations, and vehicle and equipment access routes. Movement of vehicles and equipment to and from the project site will be restricted to the identified routes and established roadways to minimize habitat disturbance. To reduce the likelihood of amphibian and reptile mortality from vehicles and equipment, project-related vehicles shall observe a 20-mile-per-hour speed limit within designated work areas and on-site roads. All heavy equipment, vehicles, and supplies will be stored within the designated project limits or other developed location at the end of each work period. At no time will project materials or equipment enter or be stored in Environmentally Sensitive Areas, such as vernal pools, seasonal wetlands, and seasonal streams.

**Mitigation Measure M-BI-1b: Pre-construction Surveys for Special-status Amphibians and Reptiles**

Prior to the commencement of construction activities at **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation** sites, a qualified biologist shall conduct a survey for amphibians and reptiles within and immediately adjacent to these project sites in areas deemed suitable habitat for the presence of special-status amphibians and reptile species (detailed below). Based on the general absence of habitat, there is a low likelihood that a federal or State-listed wildlife species would be encountered at project sites. However, if California tiger salamander or California red-legged frog are identified during preconstruction surveys, work at the individual site will be temporarily suspended and the CDFW and/or USFWS (depending upon species) shall be contacted for guidance within 24 hours. Similarly, the SFPUC environmental compliance manager shall be contacted immediately if special-status species are observed within a project site. Due to the generally disturbed condition of most project sites, a passive or active relocation approach may be accepted by the resource agencies to avoid impacts to these species. The SFPUC shall notify the appropriate resource agency immediately if any federal or State-listed species are accidentally taken (killed or injured) onsite, and shall submit a report that includes date(s), location(s), habitat description, and any corrective measures taken to protect the species found. If non-listed amphibians or reptiles are encountered, such as foothill yellow-legged frog, western spadefoot, or San Joaquin coachwhip, identified animals shall be relocated to suitable off-site habitat by the qualified biologist without consulting the resource agencies.

Project sites shall be re-inspected by the biologist whenever a lapse in construction activity of two weeks or greater has occurred. Project locations and species requiring pre-construction surveys are summarized in Table 16, and species that may occur at each site are as follows:

- ***Oakdale Portal*:** California tiger salamander, Foothill yellow-legged frog, Western spadefoot toad
- ***Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In*:** Western spadefoot toad

- ***Emery Cross Over*:** Western spadefoot toad, California tiger salamander
- ***Tesla Treatment Facility Tower*:** San Joaquin coachwhip, California red-legged frog, Western spadefoot toad
- ***Mt. Diablo SBA*:** San Joaquin coachwhip, California tiger salamander, California red-legged frog,
- ***Sunol Ridge ATC and Calaveras Substation*:** California tiger salamander, California red-legged frog

**Mitigation Measure M-BI-1c: Wildlife Exclusion Fencing and Construction Monitoring**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, and Calaveras Substation** sites, prior to the commencement of construction activities, temporary wildlife exclusion fencing (e.g., silt fencing) shall be installed at locations as determined by a qualified biologist to prevent amphibians and reptiles from entering the site during construction work. At Calaveras Substation, fencing is required only for the staging area outside of the developed substation facility. For short duration disturbances (e.g., trenches that are open for several hours and not overnight), work activities may occur without wildlife exclusion fencing provided that a qualified biologist is present during ground disturbance.

The location of exclusion fencing shall be approved by a qualified biologist and included in final construction specification drawings. The biologist shall inspect fencing to ensure proper installation and placement. SFPUC shall ensure that the temporary fencing is continuously maintained until construction activities are completed. Note that wildlife exclusion fencing at three sites, Oakdale Portal, Throttle Station 1-3 and Throttle Station 2, may additionally satisfy the need to fence wetlands at these sites (see Mitigation Measure M-BI-3: Wetland Protection).

Each of these sites shall be monitored for biological resources during initial ground disturbance by the project biologist and thereafter on a weekly basis to verify species absence from the site and ensure proper fence functioning. A trained construction worker who has attended the Biological Resources Awareness Training shall perform daily biological inspections and notify the SFPUC environmental compliance manager if special-status species are observed within the project site.

**Mitigation Measure M-BI-1d: Mandatory Biological Resources Awareness Training**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation** sites, a worker education program shall be implemented to familiarize all construction workers about the importance of avoidance of harm to special-status species and sensitive natural communities. The training shall be provided to all personnel before working at the site and include information regarding the importance of maintaining speed limits, appropriate disposal of trash and waste materials, keeping construction equipment and materials within the designated project boundaries, and respecting exclusion zones. SFPUC and its construction contractor shall confirm that all workers have been trained appropriately.

### *Special-Status Bird Species*

**Cooper's hawk, sharp-shinned hawk, Swainson's hawk, white-tailed kite and osprey.** Raptor species that may occur adjacent to the project include those that use riparian habitat associated with the

San Joaquin River and oak woodlands surrounding Don Pedro Reservoir. Cooper's hawk, sharp-shinned hawk, Swainson's hawk (California Threatened species), white-tailed kite (California Fully Protected species), and osprey typically nest in riparian habitat, oak woodlands, or other elevated sites (tall towers may be used by osprey). These species may also nest in rows of trees used for windbreaks. Typical foraging habitat for these species includes woodland edges, open fields, grasslands, and open waters such as lakes or reservoirs. Project sites that are located adjacent to suitable nesting habitat include Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Roselle Cross Over and San Joaquin Valve House; no suitable nesting habitat occurs within these project sites. Foraging habitat within the project sites is very limited to non-existent as most sites are developed, barren, or compacted with ruderal weedy species; however, adjacent annual grassland habitat may provide some foraging habitat for Swainson's hawk and white-tailed kite.

**Western burrowing owl.** In 2006, western burrowing owl nesting was documented within the SJPL ROW near the MP 56.51 Tie-In site. Grasslands within and adjacent to this site provide suitable nesting habitat for western burrowing owl. Additionally, grasslands and open areas near the Roselle Cross Over site provide potentially suitable nesting habitat for burrowing owls.

**California horned lark.** California horned lark prefers to nest in open areas such as short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats. This species may forage in California annual grassland and agricultural fields adjacent to the project. CNDDB records indicate species occurrence within 5 miles of the Oakdale Portal, Tesla Treatment Facility Tower, and the Mt. Diablo SBA project sites. California horned lark is not expected to nest within any project sites due to a lack of suitable habitat (most sites are developed, barren, or compacted). Proposed activities are not expected to affect California horned lark at project sites due to the lack of suitable nesting habitat in and adjacent to each site; therefore, surveys for this species are unnecessary.

No known raptor nesting habitat is proposed to be modified or eliminated by the project. No suitable nesting trees would be removed and raptor nests were not observed within or adjacent to the project during reconnaissance-level surveys. However, several project sites (Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Roselle Cross Over and San Joaquin Valve House) occur near blue oak woodland, riparian woodland, or other suitable nesting habitats (e.g., isolated trees, mature ornamental trees, windbreaks, and ground squirrel burrows), and existing tank structures at the Tesla Treatment Facility Tower could support cliff swallow nesting. Construction activities, especially those that involve ground disturbance and the use of heavy machinery, may adversely affect nesting bird

species within ¼ mile of the project during the nesting season (March 1 – August 31). Because construction activities would be of limited intensity and maintenance activities involving trucks and machinery occur routinely at project sites, little to no effects on nesting Swainson's hawks are anticipated beyond ¼ mile from project sites. Adverse effects such as noise and visual disturbance could affect nesting efforts, resulting in potentially significant impacts on special-status raptors and other bird species (e.g., California horned lark). To avoid potential disturbance of nesting habitat as well as impacts to future active nest sites, the following mitigation measures are proposed. With the implementation of **Mitigation Measures M-BI-1e, Nesting Raptor and Other Nesting Bird Survey, and M-BI-1f, Pre-Construction Surveys for Burrowing Owls** at the applicable sites, potential impacts to special-status bird species would be *less than significant*.

**Mitigation Measure M-BI-1e: Nesting Raptor and Other Nesting Bird Survey**

At **Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Roselle Cross Over, San Joaquin Valve House, and Tesla Treatment Facility Tower**, SFPUC will retain a qualified wildlife biologist to conduct pre-construction surveys for nesting raptors and migratory birds prior to the commencement of construction activities that will occur between March 1 and August 31 of any given year. The surveys will be conducted a minimum of 14 days prior to the start of construction during nesting season. A ½-mile survey area will be surveyed for nesting Swainson's hawks; a 500-foot survey area in addition to the work limit area will be surveyed for nesting raptors; a 150-foot survey area in addition to the work limit area will be surveyed for other nesting birds. If no active nests are detected, no additional mitigation measures will be required.

If surveys indicate that migratory bird or raptor nests occur in areas where construction activities will take place, a no-work buffer will be established around the nest site to avoid disturbance or destruction of the nest site until after a qualified biologist determines that the young have fledged. Generally, the buffer zones are 100 feet for nesting passerine birds, 250 feet for nesting raptors other than golden eagles, ~~and~~ 500 feet for golden eagles, and ¼-mile for Swainson's hawks. The size of nest buffers and need for biological monitoring will be determined on a case-by-case and shall consider the professional opinion of the qualified biologist, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed to make an appropriate decision on buffer distances. Active nests within buffer zones will be periodically monitored during construction by the on-site monitor. If construction activities have the potential to threaten the viability of an active nest discovered during the survey, then either a minimum buffer will be flagged around the active nest and designated a construction-free zone until the nest is no longer active or other appropriate avoidance measures, developed in coordination with CDFW, will be implemented to ensure that the nest is adequately protected. These measures would ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code 3503.5.

**Mitigation Measure M-BI-1f: Pre-construction Surveys for Burrowing Owls**

At **MP-56.51 Tie-In and Roselle Cross-Over**, pre-construction surveys for burrowing owls shall be conducted by a qualified biologist within 30 days prior to the start of work activities where land

construction is planned in known or suitable habitat. This survey can be conducted concurrently with the bird surveys described in Mitigation Measure M-BI-1e. The survey area shall include the project limit of work, along with a 250-foot buffer zone.

If construction activities are delayed for more than 30 days after the initial preconstruction surveys, a new preconstruction survey shall be required. All surveys shall be conducted in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation ~~California Burrowing Owl Consortium~~ survey protocols.

If burrowing owls are discovered in the project site or buffer zone, the SFPUC environmental compliance manager shall be notified immediately. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through non-invasive methods that either: (1) the birds have not begun egg laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. If these criteria are not met, occupied burrows during the nesting season will be avoided by the establishment of a no-work buffer of 250 feet around the occupied/active burrow. Where maintenance of a 250-foot no-work buffer zone is not practical, the SFPUC shall consult with the CDFW to determine appropriate avoidance measures. Where work is continued with CDFW concurrence, burrows occupied during the breeding season will be closely monitored by the biologist until the young fledge (leave the nest). The onsite biologist shall have the authority to stop work if it is determined that construction-related activities are disturbing the owls.

If criterion 1 or 2 above are met and, if CDFW concurs, the biologist shall undertake passive relocation techniques by installing one-way doors in active and suitable burrows, allowing owls to escape but not re-enter. Owls should be excluded from the project site limit of work, including a 250-foot buffer zone, by having one-way doors placed over the entrance to potential burrows in order to prevent owls from inhabiting those burrows.

For construction activities that occur outside of nesting season, passive relocation techniques (installation of one-way doors) in active and suitable burrows shall take place. Construction activities may occur once a qualified biologist has determined that the burrows are unoccupied.

**Impact BI-2: The project would not have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS. (Less than Significant)**

The project does not involve activities that would encroach upon riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. The San Joaquin Valve House site is located adjacent to, but outside of the San Joaquin River NWR. The site is within a fenced enclosure and Maze Boulevard separates the site from nearby riparian habitat. Project activities would not extend across Maze Boulevard, and thus riparian habitat would not be impacted. The Pelican Cross Over site is barren and disturbed, and located approximately 1,000 feet from riparian habitat associated with the San Joaquin River corridor. Project activities at the San Joaquin Valve House and Pelican Cross Over sites would not directly or indirectly impact riparian woodland or riparian scrub habitat

associated with the San Joaquin River. Similarly, vernal pools that occur near the MP 56.51 Tie-In and Emery Cross Over sites would not be directly or indirectly affected by the project. This impact would be *less than significant*.

**Impact BI-3: The project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act. (Less than Significant with Mitigation)**

The project construction activities would not encroach upon wetlands and other waters of the United States. No removal, filling, hydrological interruption, or other direct impacts to federally protected wetlands are anticipated.

Four project sites are located adjacent to potentially jurisdictional wetland features: San Joaquin Valve House, Oakdale Portal, Throttle Station 1-3, and Throttle Station 2. In the case of an accidental release of deleterious materials, project construction activities at these sites could indirectly impact water quality; this would be a potentially significant impact. Implementation of **Mitigation Measure M-BI-3, Wetland Protection** at these sites requires a protective barrier around potential jurisdictional wetlands to ensure that project activities do not affect jurisdictional wetlands. Thus, potential indirect impacts to wetlands would be *less than significant with mitigation*.

**Mitigation Measure M-BI-3: Wetland Protection**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, and San Joaquin Valve House**, wetland protection measures shall be applied to protect potential jurisdictional wetlands. These measures shall include the following:

- A protective barrier ~~(such as silt fencing)~~ shall be erected around the on-site wetland feature to isolate it from construction activities. <u>The barrier shall include water quality protection materials, such as silt fencing.</u>
- Signs that read "Environmentally Sensitive Area – Keep Out" shall be installed on the fencing to identify sensitive habitat;
- No equipment mobilization, grading, clearing, or storage of equipment or machinery, or similar activity shall occur at the project site until a representative of SFPUC has inspected and approved the wetland protection fencing; and,
- SFPUC shall ensure that the temporary fencing is continuously maintained until all construction activities are completed.

A fencing material meeting the requirements of both water quality protection and wildlife exclusion may be used.

**Impact BI-4: The project would not 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. (Less than Significant)**

Project activities would not interfere with the movement of native or migratory fish; all riverine and riparian habitats would be avoided. Although no known migration corridors exist within the project, the project could have a temporary and limited impact to the movements of some terrestrial wildlife during construction (in areas within documented populations of CTS and CRLF; in the vicinity of Calaveras Substation, Sunol Ridge ATC, and Mt. Diablo SBA sites). However, construction of the project would not result in any permanent barriers to species movement, and migratory corridors for fish and wildlife would be unaffected.

FAA-approved safety lighting on communication towers is sometimes implicated in bird mortality. Migratory bird species, particularly nocturnal migrants, appear to be most susceptible to collisions with lit towers on foggy, misty, rainy, low-cloud-ceiling nights. There are several risk factors that influence the likelihood of bird collisions with communication towers, for which the tower design and location are key.[175] The best available scientific data indicates that communication towers are increasingly hazardous to migratory birds when:

- towers are sited within frequented migratory bird routes;
- towers are substantially taller than 200 feet;
- towers and are not free-standing and require guy wires for support;
- towers have solid red or flashing incandescent red lights, which tend to attract birds to structures, and;
- towers are not located within existing antenna farms.[176,177,178]

Project facilities that are proposed on existing towers would have no impact on bird movement. Relatively short towers (20 to 60 feet) would be constructed at Red Mountain Bar, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, and Oakdale Office. These new towers would be short and unlit, and pose no collision or fatal attraction hazards to migratory birds. Towers that are proposed at Rock River Lime Plant, Oakdale

[175] Clark, J. R. 2000. *Service Guidance on the Siting, Construction, Operation, and Decommissioning of Communication Towers*. U.S. Fish and Wildlife Service. Washington D.C., September 14, 2000.
[176] Ibid.
[177] Avatar Environmental. 2004. *Notice of Inquiry Comment Review Avian/ Communication Tower Collisions*. Federal Communications Commission.
[178] Longcore, T., Rich, C., and Gauthreaux, S. 2005. *Scientific Basis to Establish Policy Regulating Communications Towers to Protect Migratory Birds: Response to Avatar Environmental, LLC, Report Regarding Migratory Bird Collisions with Communications Towers,* WT Docket No. 03-187, Federal Communications Commission Notice of Inquiry. Land Protection Partners. Los Angeles, CA.

Portal, and Emery Cross Over would range from 120 feet to 140 feet in height (see Table 2 in Section A, *Project Description*) and the need for FAA safety lighting at these sites has not yet been defined. The location and characteristics of these three proposed towers suggest that they would not be hazardous to migratory birds, in that they: 1) are not sited within high frequency bird migration routes; 2) would be free-standing without guy wire support, and; 3) would be less than 200 feet in height. Consistent with the "antenna farm" concept, an existing tower is present at the Oakdale Portal site (Figure 2-5) and the Emery Cross Over site is situated near an existing high voltage PG&E transmission line (Figure 2-9). The proposed tower heights and designs are consistent with USFWS guidance for minimizing impacts to migratory birds, and if lighting is required, towers would not utilize solid red or flashing incandescent red lights, which have been shown to attract birds to towers. As a result, none of the eight proposed towers are expected to create a demonstrable impact to migratory birds. Therefore, the project would not have substantial adverse effects to the movement of wildlife or fish species and the impact would be *less than significant*.

**Impact BI-5: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (No Impact)**

The project would not conflict with local policies or ordinances protecting biological resources. Project activities would not result in the removal of locally protected biological resources, including protected trees. Therefore, there would be *no impact*.

**Impact BI-6: 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. (Less than Significant)**

There are two adopted conservation plans within the study area: the *San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan* and the *San Joaquin River National Wildlife Refuge Comprehensive Conservation Plan*. These conservation plans were reviewed to determine whether the project would conflict with their provisions regarding biological resources.

The San Joaquin Valve House site is adjacent to but outside of the San Joaquin River NWR. Maze Boulevard separates the site from the NWR and all project activities would occur within the fenced project area. Project activities would not be subject to the protective provisions of the *San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan* and the *San Joaquin River National Wildlife Refuge Comprehensive Conservation Plan*. Therefore, the project would not conflict with adopted plans within the study area and the impact would be *less than significant*.

**Impact C-BI: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the project area, could result in significant cumulative impacts on biological resources. (Less than Significant with Mitigation)**

The geographic scope of cumulative biological resources impacts encompasses the project sites and nearby vicinities which contain the same types of biological resources. Other SFPUC projects in the San Joaquin Valley and Sunol Valley considered in the cumulative analysis, such as the SJPL System Project, the Rehabilitation of the SJPL Project, the Roselle Cross Over Project, Pelican Cross Over Project, and the SABPL Project (described in Appendix A) would affect many of the same special-status species as the proposed project and occur within the immediate area of the proposed project. Other proposed cumulative projects, particularly in the cities of Oakdale, Modesto and Riverbank, have the potential to convert agricultural and open space land to residential and commercial uses which could affect habitats and species similar to those affected by the proposed project. Together, the proposed project and other potential projects in the vicinity could have a significant cumulative impact on these special-status species.

The contribution of the SJVCS project to cumulative biological resources impacts would be cumulatively considerable. Implementation of **Mitigation Measures M-BI-1a through 1f and M-BI-3** would avoid or substantially minimize the proposed project's effect on special-status species and wetlands. These measures would reduce the project's contribution to cumulative impacts on biological resources to a *less-than-significant* level.

---

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☒ | ☐ | ☐ |

| Topics: | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|---|
| 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 onsite or offsite 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? | ☐ | ☐ | ☐ | ☐ | ☒ |

The project does not include the use of septic tanks or alternative wastewater disposal systems. Furthermore, while some project sites may require minor grading for facility installation, there are no unique geologic or physical features at any of the project sites, and project grading would not substantially change the existing topography. For these reasons, significance criteria 14e and 14f above are considered not applicable to the project and are not discussed further.

**Impact GE-1: The project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. (Less than Significant)**

**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.)**

Review of Alquist-Priolo Earthquake Fault Zoning maps indicates that the only project site within a fault rupture hazard zone is the Calaveras Substation site.[179] None of the other sites are crossed by an Alquist-Priolo fault, nor is there substantial evidence (such as a more recently mapped earthquake fault) of an earthquake fault within or adjacent to the other project sites.[180,181] For this reason, this criterion is *not applicable* to any site except for the Calaveras Substation.

[179] California Division of Mines and Geology, 1982. *California Special Studies Zones, LaCosta Valley Quadrangle. Revised Official Map*, effective January 1, 1982.
[180] CGS, 2010. *2010 Fault Activity Map of California, CGS Geologic Data Map No. 6*. http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html.
[181] CGS, 2012. Index of Alquist-Priolo Earthquake Fault Zone Maps. http://www.quake.ca.gov/gmaps/ap/ap_maps.htm (accessed December 6, 2012).

Proposed components at the Calaveras Substation include the placement of a communication antenna on an existing tower, installation of a radio cabinet, and the underground placement of an electrical conduit approximately 150 feet to an existing control building. While unlikely, should an earthquake along the Calaveras Fault produce ground rupture in or in close proximity to the substation site, the minor addition of communication equipment within the SFPUC-owned substation would not appreciably increase exposure of the public to risk of loss, injury, or death. The substation is not accessible to the public and does not contain any structures for human occupancy. For these reasons, the impact with respect to fault rupture at the Calaveras Substation site would be *less than significant*.

**ii) Strong seismic ground shaking.**

As a seismically active region, any of the project sites could be subject to seismic ground shaking, although project sites in the western portion of the project area in Alameda, Contra Costa, and San Joaquin counties are more likely to experience stronger earthquakes. A map of shaking potential prepared by the California Geological Survey (CGS)[182] has combined earthquake probabilities, expected magnitudes, and the character of underlying geology to display the relative intensity of ground shaking and damage in California from anticipated future earthquakes. Project sites generally located west of the San Joaquin River (Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation) are near major, active faults and would, on average, experience stronger earthquake shaking more frequently than project sites to the east. In these regions, intense shaking has the potential to damage even strong, modern buildings. All other project sites (located east of the San Joaquin River) are located a greater distance from known, active faults and would experience lower levels of shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged.[183]

None of the project sites propose structures for human occupancy, and any damage incurred by proposed facilities in the event of an earthquake would have little to no direct impact on surrounding properties or public safety. However, the effects of strong seismic ground shaking would be significant if damage hinders the communications capabilities of the SFPUC. After an earthquake, communications capabilities across the system must function properly to avoid system failures, assess damage, and maintain or restore service. The SFPUC's General Seismic Design Requirements[184] set forth consistent criteria for the

[182] CGS, 2008. *Earthquake Shaking Potential in California*. Prepared by D. Branum, S. Harmsen, E. Kalkan, M. Petersen, and C. Wills. CGS Map Sheet 48. 2008.
[183] Ibid.
[184] SFPUC, 2009. *General Seismic Requirements for Design of New Facilities and Upgrade of Existing Facilities*. Revision 2, DOC No WSIP/CSP-001-R2. October 2009.

seismic design and retrofit of all facilities and components of the regional water system. In accordance with these design requirements, every project must have project-specific design criteria based on the seismic environment and importance of the facility in achieving water service delivery goals in the event of a major earthquake.[185] The design criteria are generally based on the referenced codes, standards, and industry publications; however, in some cases, design criteria may exceed these requirements for facilities, such as the project sites that are located within a severe seismic environment and that are needed to achieve water service delivery goals.

Because the project would be evaluated and designed according to the SFPUC's General Seismic Design Requirements to avoid unacceptable system failure, the impact of strong seismic ground shaking would be *less than significant*.

**iii) Seismic-related ground failure, including liquefaction.**

Because the project would be evaluated and designed according to the SFPUC's General Seismic Design Requirements to avoid unacceptable system failure, as discussed above under criterion a)ii), the impact of seismic-related ground failure, including liquefaction, would also be *less than significant*.

**iv) Landslides.**

The project sites are generally located in areas of low landslide hazard, due to the lack of steep slopes within or adjacent to the project sites. The CGS[186] has developed a map depicting the relative likelihood of deep landsliding based on regional estimates of rock strength and steepness of slopes. Project sites located within the San Joaquin Valley and the Sunol Valley are not considered susceptible to landslides due to the flatness of the valley floor.[187] These sites include Warnerville Yard, Oakdale Office, Albers Road Valve House, Roselle Cross Over, Modesto 2 ATC, Mid-Point Repeater Tower, San Joaquin Valve House, and Pelican Cross Over. Due to the lack of slopes susceptible to landslides, there would be *no impact* with respect to landslides at these project sites.

[185] In the SFPUC's General Seismic Design Requirements, the term "major earthquake" is defined as an earthquake of Richter magnitude 7.8 or larger on the San Andreas fault, 7.1 or larger on the Hayward fault, or 6.8 or larger on the Calaveras fault.
[186] CGS, 2011. *Susceptibility to Deep-Seated Landslides in California*. Prepared by C. J. Wills, F. G. Perez, and C. I. Gutierrez. CGS Map Sheet 58.
[187] Ibid.

Certain project sites are located in environments that have a low to moderate landslide susceptibility, due to either slope steepness or geologic substrate, according to CGS mapping.[188] These sites include Moccasin Peak, Red Mountain Bar, Transmission Tower 122N, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, and Sunol Ridge ATC. Events such as earthquakes or exceptionally intense rainfall have the potential to trigger slope instabilities such as landslides, earth flows, or mudslides in or in proximity to these project sites. However, the relatively minor grading and excavation activities at these project sites would occur in flat areas or within existing developed yards, and in no case would increase the existing potential for slope instabilities to occur, either by undercutting the base of slopes or by placing excessive loads on the top of slopes. Facilities would be designed in accordance with the SFPUC's General Seismic Design Requirements,[189] which require that all SFPUC projects be designed for seismic reliability, including seismically induced landslides or slope failure. Because the project sites would not be accessible to the public, would not contain any structures for human occupancy, and would not exacerbate existing landslide hazards (e.g., for offsite properties), the impact with respect to landslides would be *less than significant*. In the unlikely event that project sites are damaged or threatened by slope instabilities, it would not present risk of life or limb to the public, and facilities could be inspected and repaired as needed.

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

Project construction activities have the potential to result in increased soil erosion or loss of topsoil due to ground disturbance associated with excavation, minor grading, and material staging areas. There is a certain rate of soil erosion that occurs naturally in the environment; however, the preliminary stages of construction, especially initial site grading, excavation, and soil stockpiles leave loose soil exposed to the erosive forces of rainfall and high winds. In addition to introducing sediment to stormwater runoff, rapid runoff from storm events can initiate or increase the size of rills and gullies, and potentially undermine engineered soils beneath foundations and paved surfaces. Loss of topsoil from an agricultural resource perspective is discussed in Section E.18, *Agricultural and Forest Resources*. The implications of soil erosion from a water quality perspective are discussed in Section E.15, *Hydrology and Water Quality*. This discussion addresses soil erosion as a potential geotechnical and engineering issue, where accelerated

[188] Ibid.
[189] SFPUC, 2009. *General Seismic Requirements for Design of New Facilities and Upgrade of Existing Facilities*. Revision 2, DOC No WSIP/CSP-001-R2. October 2009.

erosion (e.g., formation of rills, gullies, and channelized flow) may undermine constructed facilities or may clog or compromise stormwater drainage pipes.

The area of ground disturbance at each project site ranges from minimal to relatively small areas. Maximum tower foundation excavations would be 18 feet by 18 feet and up to 8 feet deep; shallow (up to 2-feet-deep) conduit trenches would be installed at several sites (see Table 2). Minor grading for equipment pads and other facilities would also occur as needed. Some project sites would have no excavation or grading. The duration that excavations and soil stockpiles would be exposed to potential rainfall and wind is short, generally less than two weeks. Given the minor amount of construction-related disturbance, the minimal area taken up by permanent facilities, and the generally level project sites, the volume and rate of runoff is not anticipated to be great enough to form erosional features (e.g., rills and gullies), even in the event that heavy rainfall coincides with construction activities. Because sites would be restored following construction and no ground-disturbing activities would be associated with project operation, no soil erosion is expected to occur during project operation and maintenance. For these reasons, the impact of construction, operation, and maintenance of the project on accelerated soil erosion would be *less than significant*.

**Impact GE-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and could result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. (Less than Significant with Mitigation)**

As discussed under Impact GE-1, project sites would not be accessible to the public (i.e., fenced), would be unmanned, and would generally not be located in areas prone to landslides. The geology and soil types underlying each of the project sites vary, and could in certain locations contain adverse or undesirable soil conditions, such as expansive, corrosive, compressible, liquefiable, or collapsible soils. For project sites requiring new towers (Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office), installation of self-supporting towers without proper investigation of soil conditions and engineering assessment could result in a *potentially significant* impact related to soil instability. Installation of other proposed facilities, such as antennas, radio cabinets, and appurtenant structures, are not anticipated to be affected by potential soil instabilities. Structures at all of the project sites would be designed according to basic guidelines of the California Building Code (CBC), and the SFPUC's General Seismic Design Requirements, which are equivalent to or more stringent than the seismic design requirements of the CBC. Mitigation Measure M-GE-3 will ensure that the tower foundation design will be based on site-

specific geologic conditions. Implementation of **Mitigation Measure M-GE-3, Tower Foundation Engineering Design,** would ensure that unstable geologic units or soils are identified prior to the final tower foundation design so they would not adversely affect the project. With implementation of Mitigation Measure M-GE-3, the impact of construction, operation, and maintenance of the project would be *less than significant*.

**Mitigation Measure M-GE-3: Tower Foundation Engineering Design**

For the new radio towers proposed at the **Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office** sites, the SFPUC and/or its contractor shall conduct appropriate site-specific geotechnical investigations, including, as necessary, subsurface exploration and soil testing. The information provided by the geotechnical studies will inform the final foundation designs and ensure that the proposed structures comply with the CBC and SFPUC's general seismic design requirements. The geotechnical evaluation shall perform adequate testing to identify the presence, if any, of potentially adverse soil conditions such as expansive, corrosive, compressible, liquefiable, or collapsible soils. Based on the nature, location, and severity of adverse soil conditions, the geotechnical study shall recommend appropriate and feasible design elements necessary to reduce the potential for unfavorable soil conditions to adversely affect project facilities. Such features may include the use of corrosion-resistant materials and coatings; the use of non-corrosive, non-expansive soil backfills; soil-treatment processes to increase bearing strength; specific soil compaction procedures and densities; and/or any other combination of soil preparation methods or foundation designs necessary to avoid or reduce the adverse effects of soils on project structures. Studies shall be conducted by a California Registered Geotechnical Engineer, and shall be in accordance with generally accepted geotechnical engineering principles and practices. Soil and rock sampling and testing shall conform to applicable standards set forth by the American Society for Testing and Materials (ASTM). Geotechnical findings and recommendations shall be provided for review and approval by the SFPUC at least 60 days before final project design. Approved geotechnical recommendations for foundation design shall become part of the proposed project.

**Impact GE-4: Some of the project sites would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property. (Less than Significant with Mitigation)**

As discussed under Impact GE-3, soil conditions at the project sites would vary, but could contain adverse soil conditions, such as expansive soils, which could create substantial risks to life or property at project sites where a new radio towers are proposed, a *potentially significant impact*. The project sites include Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office. Mitigation Measure M-GE-3 would be implemented to ensure that site-specific geologic information necessary to complete the proper foundation designs is obtained prior to construction. Implementation of **Mitigation Measure M-GE-3,**

**Tower Foundation Engineering Design,** described above, would ensure that expansive soils do not adversely affect the project, and would reduce the potential impact to *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 cumulative impact on geology and soils. (Less than Significant)**

The geographic scope for potential cumulative impacts related to geology and soils is generally site-specific because the potential hazards related to seismically induced ground failure, erosion or loss of topsoil, soil subsidence, collapsible soils and expansive soils are based on local site-specific soil conditions. Geologic and soil conditions inherent at the project sites would not contribute to geologic and soil conditions or related hazards at other cumulative project sites. Structures proposed at any sites in the vicinity must conform to the requirements of the CBC, which would reduce the potential for impacts resulting from site-specific geologic and soil conditions. Accordingly, no significant cumulative impacts are anticipated.

---

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☐ | ☒ | ☐ |

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☒ | ☐ | ☐ |

The project does not propose the construction of housing. Therefore, significance criterion 15g above associated with the placement of housing within a 100-year flood hazard area is not applicable.

## Regulatory Framework

### *Water Quality Standards*

In accordance with statewide water quality policy, and under direction of the State Water Resources Control Board (SWRCB), the nine Regional Water Quality Control Boards (RWQCBs) throughout California adopt and implement water quality control plans (Basin Plans) that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The project falls under the jurisdiction of both the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) (approximately all areas of Alameda County and westward) and the Central Valley Regional Water Quality Control Board (CVRWQCB) (approximately all areas east of Alameda County). For each region, the respective Basin Plan designates beneficial uses and establishes water quality objectives protective of these uses; together these comprise the water quality standards for most inland surface waters. Essentially all surface drainages (e.g., creeks, streams, and rivers) are protected by a Basin Plan.

### *NPDES Permits*

Included in the Federal Clean Water Act (CWA) is the following provision: the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Subsequent regulations expanded

the NPDES program to address stormwater discharges, including those from construction activities that disturb a land area equal to or greater than one acre.

For stormwater discharges associated with construction activity in the state of California, the SWRCB has adopted the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (SWRCB Order 2009-0009-DWQ; Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects where total construction activity disturbs one or more acres of soil, or where construction activity that results in land surface disturbances of less than one acre is part of a larger common plan of development of one or more acres of disturbed land surface. Construction activities subject to this permit include, but are not limited to, clearing, grading, stockpiling, and excavation. Among other provisions, the Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include and specify best management practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off-site into receiving waters. The project would disturb more than one acre of soil (collectively for the 20 project sites) and ~~would thus~~may be subject to the provisions and requirements of the General Construction Permit.

**Impact HY-1: The project would not violate any water quality standards or waste discharge requirements. (Less than Significant)**

## Construction

Potential impacts to water quality resulting from the project would occur primarily as a result of ground disturbing activities during construction at each of the project sites. Installation of radio communication facilities, which would last a maximum of two months at any one site, has the potential to adversely affect the quality of nearby surface waters if stormwater runoff or groundwater dewatering discharges from the site contain elevated levels of suspended sediment, turbidity, toxins, or other chemicals (e.g., due to presence of exposed soils, soil stockpiles, material staging areas, fuels, or chemicals associated with vehicles and construction equipment).

### *Stormwater Discharges Associated with Construction*

The type, intensity, and potential water quality impacts of construction activities at each site would vary based on the size and intensity of construction disturbances, the conditions of the site (e.g., developed,

open space, or rural), the season of construction (i.e., rainy or dry season), and the surrounding setting (e.g., proximity of nearby surface waters). Ground-disturbing activities at each of the project sites would typically disturb less than one quarter acre. Combined, the 20 project sites total approximately 10 acres in size, although the total construction-related land disturbance would be smaller because most areas within each project site boundary would not be disturbed by construction activity. Furthermore, it is anticipated that no more than two sites would typically be under construction at any one time, and all are physically isolated from one another (see construction schedule in Section A.5, Project Description). Sites scheduled to be constructed during the rainy season (October through April), as shown in Figure 3, would have a greater potential to contribute to water quality impacts than those constructed during the dry season.

The lowest levels of construction disturbance would occur at Moccasin Peak, Warnerville Yard, Oakdale Office, Roselle Cross Over, Modesto 2 ATC, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation. At these locations, the entire area that would be disturbed or used for material staging is enclosed by fencing and paved or graveled. Sites in other locations where no new tower is proposed would also have low levels of construction disturbance, because antennas would be installed on existing structures and no foundation excavation would be required; such sites include Red Mountain Bar, Transmission Tower 122N, Albers Road Valve House, San Joaquin Valve House, Pelican Cross Over, and Tesla Treatment Facility Tower. At these sites, construction disturbances would be limited to material laydown areas, installation of equipment pads, and in some cases, excavation of narrow trenches for conduits.

The greatest ~~intensity of~~ potential for construction disturbance would occur at sites in rural or open space settings that require the installation of new towers and tower foundations (Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51, and Emery Cross Over). Construction disturbances at these sites would include excavations for concrete tower foundations (which would be 4 to 8 feet in depth, and up to 18 feet by 18 feet in area), installation of concrete pads (up to 6 feet by 8 feet in area for equipment cabinets and/or propane tanks), narrow trenching for cables and/or electrical conduits, material laydown areas, and in certain cases PV panel installations. While construction activities at these sites may last as long as two months, excavations for tower foundations would generally be completed in two weeks or less. The remainder of the construction period would be for site preparation activities, concrete curing, tower erection, equipment installation, and antenna/radio/power systems installation and testing. Potential impacts to water quality at these sites would be relatively minor; however, without appropriate stormwater and hazardous materials BMPs, stormwater runoff from the sites could nevertheless temporarily degrade water quality within nearby or downgradient waters.

Because the project would collectively disturb more than one acre, the SFPUC would be required to ~~obtain~~ seek coverage under the Construction General Permit. ~~The~~If determined appropriate by the SWRCB, the SFPUC would submit permit registration documents to the applicable RWQCB, which would include a Notice of Intent (NOI), a risk assessment, a site map, a SWPPP, an annual fee, and a signed certification statement. The risk assessment would determine which provisions of the Construction General Permit (e.g., numeric action levels and effluent limitations for pH and turbidity, rain event action plans, monitoring and reporting requirements) would apply based on a combination of sediment risk and receiving water risk at each site. The SWPPP would include a list of BMPs necessary to prevent stormwater runoff from the construction site from adversely affecting nearby water bodies, and would include the information necessary to support the conclusions, selections, use, and maintenance of BMPs.

Given that no one project site would exceed one acre of disturbance, and the individual project sites are not in close proximity to one another (i.e., they may not, collectively, be considered a common plan of development), the ~~The~~ RWQCB may not require coverage under the Construction General Permit. ~~for certain project sites because they qualify for a rainfall erosivity waiver (which, under specific circumstances, may be granted to small construction sites with low potential for erosion).~~ In that event, typical construction water quality BMPs would be applied, such as the SFPUC Standard Construction Measures described in Section A.5.9, *Project Description*, as reflected in the SJVCS project draft construction contract technical specifications[190]; this would be sufficient to minimize the potential for temporary construction-related water quality impacts.

Compliance with the Construction General Permit and/or construction water quality BMPs would be adequate to reduce potential construction impacts related to erosion, runoff, and water quality degradation to a *less-than-significant* level.

### *Temporary Dewatering Discharges*

Excavations for tower foundations or other site components could require temporary dewatering if groundwater or stormwater were to accumulate in the excavated pits during the construction phase. Depending on the discharge method or the quality of the encountered groundwater relative to the quality of the receiving water body, discharges of groundwater to land or surface water could have a potentially

[190] SFPUC, 2013. *Draft Technical Specifications*, Section 01062: Environmental Requirements, May 14, 2013.

significant impact on water quality. As discussed in Impact HZ-2 in Section E.16, none of the sites requiring subsurface excavations are likely to contain shallow groundwater contaminated with hazardous materials. Due to the location and excavation depths required for sites at which new towers would be installed, the probability of encountering groundwater is low. However, because conditions could vary and are not known with certainty, it is conservatively assumed that any site requiring subsurface excavations may need to temporarily dewater excavated pits or trenches. If required, the dewatering operations would not exceed two months (i.e., the maximum length of construction activity at any one site), and would most likely be made to the land surface and infiltrate directly into the ground. For sites in close proximity to surface water bodies, such as Oakdale Portal, Red Mountain Bar, Throttle Station 1-3, and San Joaquin Valve House, it is possible that dewatering discharges, if uncontrolled, could eventually reach nearby surface waters.

Non-stormwater discharges that are allowable under the Construction General Permit (discussed above) include uncontaminated groundwater dewatering provided that the dewatering activity is infeasible to eliminate, complies with BMPs as described in the SWPPP, meets the numeric effluent limitations and Numeric Action Levels for pH and turbidity, and does not cause or contribute to a violation of water quality standards. ~~Otherwise,~~If the Construction General Permit is not required, the SFPUC would ~~be required to~~ obtain coverage for the discharge under NPDES Order No. R5-2008-0081, Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters, or SWRCB Water Quality Order No. 2003-0003-DWQ, General Waste Discharge Requirements for Discharges to Land with Low Threat to Water Quality.

Under the terms of these general dewatering permits, the SFPUC would file with the appropriate RWQCB the following: (1) a NOI to comply with the terms and conditions of the General Waste Discharge Requirements (WDRs); (2) the applicable first annual fee as required by Title 23, CCR, Section 2200; (3) a project map; (4) evidence of CEQA compliance; and (5) a discharger monitoring plan. In the case of the project, the appropriate RWQCB would be either the Central Valley RWQCB or San Francisco Bay RWQCB, depending on the location of the site. Upon review of the NOI by RWQCB staff, a determination would be made as to whether or not coverage under these General WDRs is appropriate. The RWQCB could request additional information and determine that a discharger is not eligible for coverage under a General Order or that the discharger would be better regulated under an individual or other general NPDES permit or (for discharges to land) under WDRs.

This process, along with the discharge prohibitions and specifications that would accompany permit coverage, ensures that dewatering discharges do not exceed the wastewater treatment requirements of the applicable RWQCB. If discharges were made to lands not owned, controlled, or leased by the SFPUC, the SFPUC would enter into an agreement with landowners for the discharge. Regardless of how permit coverage is obtained (e.g., through the Construction General Permit, a general permit for low-threat discharges, or an individual WDR), the SFPUC would be required to implement control measures to ensure adequate quality of the discharged water, conduct the appropriate sampling to demonstrate permit compliance, and regulate flow rates to prevent erosion or downstream flooding in the receiving water. A groundwater treatment unit would be used, if needed, to comply with the discharge requirements. For these reasons, groundwater dewatering discharges, if needed, would have a *less-than-significant* impact with respect to water quality.

### Operation and Maintenance

Long-term impacts to water quality associated with the project would be limited to minor changes in the degree of impervious surfaces present at each of the project sites. Installation of communication equipment would not appreciably change the topography of any of the project sites because no substantial cuts or fills would be required. New impervious surfaces at project sites would consist of small concrete pads supporting equipment cabinets, propane tanks, concrete tower foundations, and in some cases PV panel foundations. These impervious surfaces would be small, geographically separated, and surrounded by gravel fill. Any increase in runoff rates or velocity caused by impervious concrete pads/foundations would be minimized by surrounding gravel ground cover and would infiltrate directly into the ground. For these reasons, the long-term impacts to water quality associated with new facilities would be *less than significant*.

**Impact HY-2: The 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 project could require minor amounts of shallow groundwater dewatering at certain sites where subsurface excavations are required, but such withdrawals would not be substantial and would not deplete groundwater supplies. Such small dewatering activities would be temporary, affect only shallow groundwater, and discharge groundwater adjacent to the construction site. Groundwater removed from construction-related excavations would likely return to the underlying groundwater through seepage and infiltration. The project would result in the addition of minor areas of impervious surfaces (equipment pads and foundations), but these would not be impediments to groundwater recharge

because they would be small, disconnected, and surrounded by gravel fill or vegetated soils. For these reasons, the construction, operation, and maintenance of the project would have a *less-than-significant* impact on groundwater supplies and groundwater recharge.

**Impact HY-3: The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation onsite or offsite. (Less than Significant)**

As discussed under Impact HY-1, the project would not result in substantial alteration of topography and would result in minimal impacts on drainage patterns. New impervious surfaces associated with the project would consist of tower foundations, small concrete pads supporting equipment cabinets, propane tanks, concrete tower foundations, and in some cases PV panel foundations. These impervious surfaces would be small, disconnected, and surrounded by gravel fill. Any increase in runoff rates or velocity caused by impervious concrete pads/foundations would be minimized by surrounding gravel ground cover and would infiltrate directly into the ground. None of the project sites intersect a drainage course. For these reasons, the impact of construction, operation, and maintenance of the project on drainage patterns, the course of streams, and the resulting erosion and siltation effects would be *less than significant*.

**Impact HY-4: The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. (Less than Significant)**

For the same reasons as discussed under Impact HY-3, the impact of the project on drainage patterns, the course of streams, and the resulting potential for flooding effects would be *less than significant*.

**Impact HY-5: The project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (No Impact)**

The only sites within an area served by a stormwater drainage system are Oakdale Office, Roselle Cross Over, and Modesto 2 ATC. This impact criterion is *not applicable* to any of the other project sites.

Because the Oakdale Office, Roselle Cross Over, and Modesto 2 ATC sites are located in areas that are currently paved, they would not result in additional impervious surfaces and thus would not contribute additional runoff to stormwater drainage systems. Therefore, the proposed facilities at these sites would have *no impact* with respect to exceeding the capacity of a stormwater drainage system.

**Impact HY-6: The project would not otherwise substantially degrade water quality. (No Impact)**

Other than the potential water quality impacts discussed in HY-1, the project would not otherwise substantially degrade water quality. Therefore, there would be *no impact* related to this criterion.

**Impact HY-7: The project would not place within a 100-year flood hazard area structures that would impede or redirect flood flows. (No Impact)**

The only project site within a FEMA flood hazard zone is the San Joaquin Valve House.[191] This impact criterion would *not apply* to any of the other project sites because they are outside of 100-year flood hazard areas.

The San Joaquin Valve House is within the 100-year flood zone of the San Joaquin River, but is outside of the designated floodway.[192] Because it is outside the floodway, construction activities at the San Joaquin Valve House would not require an encroachment permit from the Central Valley Flood Protection Board (CCR Title 23, Section 4). The only structure to be placed within the flood hazard zone would be a small equipment cabinet on a concrete pad (3 feet by 6 feet). This would not be sufficient to impede or redirect flood flows of the San Joaquin River. Therefore, there would be *no impact* with respect to this issue.

**Impact HY-8: The project would not 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. (Less than Significant)**

Because the project would not involve the construction of housing or structures for human occupancy, it would not expose people or the public to loss, injury, or death as a result of flooding. However, five of the project sites (Oakdale Office, Mid-Point Repeater Tower, San Joaquin Valve House, Pelican Cross Over, and Calaveras Substation) are within the boundaries of a dam inundation zone.[193] Should dam failure occur on the Tulluch, New Melones, San Luis, Pine Flat, Calaveras, Turner, or Del Valle Dams, one or more of these sites could experience flooding. Catastrophic failure of a dam is an extremely unlikely event; dam safety regulations enforced by the Department of Water Resources, Division of Safety of Dams require periodic inspections of dams and reservoirs for the purpose of determining their safety. Inspectors may require dam owners to perform work, maintenance, or implement controls if issues are

[191] Department of Water Resources, 2012. Best Available Maps Floodplain Information Web Viewer. http://gis.bam.water.ca.gov/bam/?do=print (accessed December 6, 2012).
[192] Ibid.
[193] Stanislaus County, 2009. 2010 Stanislaus County - Dam Inundation Hazard. http://www.stanoes.com/mjhmp.shtm.

found with the safety of a dam. If any of the dams identified above were to fail, it is unlikely that the communication facilities at the sites affected by the resulting flood flows would be irrevocably damaged. Following such an event, the SFPUC would conduct an inspection of communications facilities and equipment within the inundation zone and promptly repair or replace them. In the unlikely event that a dam were to fail, it would represent an inspection and repair issue rather than a significant impact on the project. Potential impacts are thus considered to be *less than significant*.

**Impact HY-9: The project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. (Less than Significant)**

The project is distant from the Pacific Ocean coastline, thereby precluding any potential flooding impacts from a tsunami. There is a remote chance that certain sites could be subject to hazards from seiche (i.e., Red Mountain Bar, which is adjacent to the Don Pedro Reservoir) or mudflow (in sites located in hilly areas). The probability of such hazards affecting the project sites is low, and the project does not increase public exposure to these risks because facilities would be neither manned nor publicly accessible. If a seiche or mudflow were to affect one or more of the project sites, the SFPUC would conduct an inspection of the communications facilities and equipment within the damage zone and promptly repair or replace them. For these reasons, which are similar to reasons described in Impacts HY-8 and HY-9, the impact would be *less than significant*.

**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 context for the cumulative impacts associated with surface water hydrology and water quality is the watershed area contributing to the same receiving waters as the proposed project. Projects in the cumulative scenario include SFPUC projects along the SJPL, in addition to other proposed development of commercial properties and residential subdivisions in and around the cities of Oakdale, Riverbank and Modesto which would cover an area of more than 1,000 acres at full build-out if all proposals were successfully completed (refer to Appendix A for a description of cumulative projects).

Hydrologic and water quality effects of these projects could possibly include sedimentation or non-point source pollution in downstream receiving waters, particularly during the construction phases, or effects on the underlying groundwater aquifer, including decreases in recharge areas or degradation of groundwater quality in the event of a contaminant release. In the absence of regulatory controls, the

primary cumulative effect of these projects would be to significantly alter the natural hydrology of the valley region through increases in the area covered by impervious surfaces and to increase the potential for the release of non-point source pollutants (i.e., motor fuels, trash, and sediment). This would be a significant cumulative impact on hydrology and water quality.

However, the proposed project, along with other projects occurring in the area, would be required to comply with applicable federal, state, and local water quality regulations. The SJVCS project, along with all other projects ~~over 1 acre in size (which includes most of the projects~~ in the cumulative scenario~~),~~ would be required to obtain coverage under the NPDES Construction General Permit~~, which requires that each project proponent identify~~ and/or implement water quality~~stormwater~~ BMPs (such as the SFPUC Standard Construction Measures provided in the draft construction contract specifications[194]) that effectively control erosion and sedimentation and other construction-related pollutants. Further, nearly all projects identified in the cumulative scenario in the urban areas of Oakdale, Riverbank, and Modesto would meet the definition of "new development and redevelopment projects" under the various local MS4 permits. Such projects are required to implement site design, source control and, in some cases, treatment control BMPs necessary to control the volume, rate, and water quality of stormwater runoff from the project during long-term operations.

The proposed project's contribution to cumulative hydrology and water quality impacts would not be cumulatively considerable for a number of reasons: the project would not violate water quality standards or waste discharge requirements; the project would not permanently alter existing drainage patterns; the project would not contribute runoff that would exceed drainage capacities; and project construction would be of short duration, disturb less than 10 acres, and comply with construction water quality BMPs provided in the construction contract specifications[195]~~required under the Construction General Permit~~. Therefore, the project's contribution to any cumulative impact on hydrology and water quality would not be cumulatively considerable (*less than significant)*.

---

[194] SFPUC, 2013. *Draft Technical Specifications*, Section 01062: Environmental Requirements, May 14, 2013.
[195] Ibid.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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? | ☐ | ☐ | ☒ | ☐ | ☐ |
| 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? | ☐ | ☐ | ☒ | ☐ | ☐ |

There are no private airstrips within 2 miles of any project site; therefore, significance criterion 16f above is not applicable to the project.

The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse 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). The term "hazardous material" is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.[196]

[196] California Health and Safety Code, Chapter 6.95, Section 25501(o).

Land use in the vicinity of project sites is a mix of open space, agricultural, grazing, commercial and residential. A search of the SWRCB's GeoTracker[197] and the California Department of Toxic Substances Control (DTSC)'s EnviroStor[198] online databases was conducted to identify hazardous materials sites within ¼ mile of each of the project sites. GeoTracker includes the following types of environmental cases: leaking underground storage tank (LUST) sites; land disposal sites; military sites; DTSC cleanup sites; other cleanup sites; permitted underground storage tank (UST) facilities; and permitted hazardous waste generators. EnviroStor includes federal Superfund sites, state response sites, voluntary cleanup sites, school cleanup sites, corrective action sites, and tiered permit sites. The following proposed project sites were listed as hazardous material sites:

- **Warnerville Yard (Site 10).** The Warnerville Yard is a listed LUST case. Two 2,000-gallon fuel tanks were removed in January 2004. Low concentrations of petroleum hydrocarbons were detected in soil during the tank removals. Following additional site investigation, the case was closed, indicating that residual petroleum hydrocarbons pose a low threat to human health or the environment.[199]

- **Sunol Ridge ATC (Site 19).** This site, known as Sunol Ridge Communications Center, was identified as an open cleanup program site in January 1990. No additional information was available in the database.

Several hazardous materials sites, such as LUST cases and other cleanups, were identified in the vicinity of the Oakdale Office and Modesto 2 ATC project sites. The identified sites are located at least 800 feet from project sites. No hazardous materials sites were identified near other project sites.

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

Project construction would require the transport and use of fuels, lubricants, and solvents for construction vehicles and equipment. Small quantities (less than 25 gallons) of these materials could be stored at project sites. Any hazardous materials needed for construction would be stored and used in accordance with the applicable regulations that specify hazardous materials storage and handling requirements, such as proper container types, spill containment, and usage methods for minimizing the potential for releases and harmful exposures. As discussed in Section E.15, Hydrology and Water Quality, construction water quality BMPs provided in the draft construction contract specifications[200] and/or

[197] SWRCB, 2012. GeoTracker Database. http://geotracker.swrcb.ca.gov/ (accessed January 2012).
[198] DTSC, 2012. Envirostor Database. http://www.envirostor.dtsc.ca.gov/public/ (accessed January 2012).
[199] Stanislaus County Department of Environmental Resources, 2004. Case Closure Summary, Warnerville Yard, 10501 Warnerville Road, Oakdale. July 20, 2004.
[200] SFPUC, 2013. *Draft Technical Specifications*, Section 01062: Environmental Requirements, May 14, 2013.

compliance with the requirements of the Construction General Permit, ~~requires the development and implementation of a SWPPP which~~ would include BMPs designed to prevent pollutants from contacting stormwater and moving off-site into receiving waters. This would ensure that project impacts due to the routine transport, use, or disposal of hazardous materials would be *less than significant*. Examples of hazardous materials BMPs to protect surface and groundwater from possible sources of contamination include conducting routine inspections for leaks, placing drip pans underneath parked vehicles, protecting the ground surface with tarps in equipment and material storage areas, and maintaining compliance records.

Project operation and maintenance would involve very little use of hazardous materials. Routine maintenance would involve inspection and repair, if necessary, of the radio equipment and quarterly testing of the new backup generators at two project sites. LPG for the backup generators would be stored in 500-gallon aboveground storage tanks. Transportation of LPG to replenish storage tanks would occur occasionally. Regulatory requirements addressing the proper storage, use, and transportation of hazardous materials are found in the California Fire Code, California Health and Safety Code Hazardous Materials Business Plan regulations, and Caltrans regulations.

Because project operation would involve relatively minor quantities of hazardous materials, compliance with existing hazardous materials laws and regulations would ensure that project impacts due to the routine transport, use, or disposal of hazardous materials would be *less than significant*.

**Impact HZ-2: The 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)**

Project construction would involve excavation at sites requiring new tower foundations and electrical conduits. Excavation depths would be 4 to 8 feet for foundations and 1 to 2 feet for conduits. Encountering contaminated soil during excavation and grading could result in exposures to construction workers, the public, and the environment. Regulatory agency database searches of known hazardous materials sites were conducted to assess the potential to encounter subsurface contamination. Two project sites, Warnerville Yard and Sunol Ridge ATC, were identified on regulatory agency lists of hazardous materials sites. No subsurface excavation is required at either of these project sites. Several sites were listed within ¼ mile of the Oakdale Office and the Modesto 2 ATC sites; however, contaminants from identified fuel leak cases and cleanup sites in the vicinity would be unlikely to affect shallow soil conditions at project sites due to the distance from the project sites and the depth to groundwater in the

vicinity. Based on the database review and observations of existing conditions at the project sites, the potential to encounter contaminated soil and groundwater during construction is considered low, and the impact during construction would be *less than significant*.

As discussed, project operation and maintenance would involve very little use of hazardous materials, with the exception of LPG, which would be stored and used in accordance with regulations. Because project operation would involve relatively minor quantities of hazardous materials, with mandatory compliance with existing hazardous materials laws and regulations, the potential hazard of a release of hazardous materials resulting from an upset or accident would be *less than significant*.

**Impact HZ-3: The project would not emit hazardous emissions. (Less than Significant)**

Project operation would involve the transmission of microwave radio signals between antennas at nearby project sites. Microwaves are a specific category of radio waves that can be defined as radio frequency (RF) energy in which frequencies range upward from several hundred MHz to several GHz. RF energy involves waves of electric and magnetic energy moving together through space. The frequency is the number of electromagnetic waves passing a given point in one second. The RF for the project would be 6 GHz. One of the most familiar uses of microwave energy is found in household microwave ovens, which operate at a frequency of 2.45 GHz. The FCC has adopted guidelines for exposure to RF energy that are designed to ensure that FCC-regulated transmitters do not expose the public or workers to potentially harmful levels. Therefore, if a transmitter and its associated antennas are regulated by the FCC, they must be operated in compliance with FCC rules. Point-to-point microwave antennas such as those proposed under the project are unlikely to cause exposures in excess of the guidelines because the radio signals travel in a directed beam from a transmitting antenna to a receiving antenna; therefore, dispersion of RF energy outside of the narrow beam is minimal or insignificant. In addition, these antennas transmit using very low power levels, usually on the order of a few watts or less. Measurements have shown that ground-level exposures due to microwave directional antennas are normally at least a thousand times below recommended safety limits. Significant exposures could only occur in the unlikely event that an individual were to stand directly in front of and very close to an antenna for an extended period of time.[201] Project sites would be inaccessible to the public, limiting potential exposures. For these

[201] FCC, 1999. *Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields*, OET Bulletin 56, Fourth Edition. Office of Engineering and Technology. August 1999.

reasons, and because the project would be licensed by the FCC and subject to its regulations, the potential for harmful RF emissions from of proposed radio towers would be *less than significant*.

**Impact HZ-4: The project would handle limited amounts of hazardous materials within one-quarter mile of an existing school. (Less than Significant)**

The Modesto 2 ATC site is located within ¼-mile of Modesto Junior College. Proposed construction activities at the Modesto 2 ATC site would consist of attaching an antenna on the existing radio tower and installing a radio cabinet at its base. Hazardous materials handling, if any, would be limited to minimal amounts of fuels and lubricants for construction vehicles and equipment during a brief construction period (approximately 4 weeks). No hazardous materials would be used or stored at the Modesto 2 ATC site during project operation. Therefore, the potential impact of hazardous materials use on individuals at the nearby Modesto Junior College would be *less than significant*.

No existing or proposed schools are located within ¼-mile of any other project sites; therefore, there would be *no impact* at these sites.

**Impact HZ-5: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5; however, the project would not create a hazard to the public or the environment. (Less than Significant)**

The Warnerville Yard and the Sunol Ridge ATC sites are both located on hazardous materials sites, as identified by regulatory agency lists compiled pursuant to Government Code Section 65962.5. At the Warnerville Yard site, low levels of petroleum hydrocarbons were discovered during tank removals in 2004; a subsequent investigation indicated that residual concentrations did not pose a threat to human health or the environment, and the cleanup case was closed by the Stanislaus County Department of Environmental Resources. No database information is available regarding site conditions at the Sunol Ridge ATC. Regardless, because excavation would not occur at these two project sites, residual soil or groundwater contamination would not be encountered; therefore, the impact related to the project's location on a listed hazardous materials site would be *less than significant*.

Because no other project sites are located on a listed hazardous materials site, there would be *no impact* under this criterion for the remaining sites.

**Impact HZ-6: The project would be located within two miles of a public airport or public use airport, but would not result in a safety hazard for people residing or working in the project area. (Less than Significant)**

The Oakdale Airport is located in the vicinity of three project sites; it is situated approximately 1 mile north of Warnerville Yard site, 2½ miles southeast of Oakdale Office site, and 2½ miles west of the Emery Cross Over site. No new tower is proposed at the Warnerville Yard site. Although the Emery Cross Over and Oakdale Office sites are located more than 2 miles from the Oakdale Airport, the proposed towers at these sites could cause an obstruction to flight patterns and result in substantial safety risks if the project were constructed without proper notification and implementation of any required safety features.

As discussed in Section E.5, *Transportation and Circulation*, FAA regulations require that the FAA is notified of any construction within 20,000 feet of a public use airport runway that exceeds a hypothetical flight path surface extending outward and upward at a slope of 100:1 from any point on the runway. Based on preliminary screening of proposed tower locations, the SFPUC would be required to submit a Notice of Proposed Construction or Alteration (Form 7460) to the FAA prior to construction of the proposed 120-foot tower at the Emery Cross Over site and 60-foot tower at the Oakdale Office site. The FAA would determine whether the project would create a hazard to navigable airspace. Each antenna tower structure must conform to the FAA's painting and lighting recommendations, if any are required, as set forth on the FAA's Determination of No Hazard. If the FAA determines that a tower would be a physical hazard, the FCC will not approve the construction permit application. Due to the distance from the Oakdale Airport and height of proposed towers, it is anticipated that the project would not create a hazard to navigable airspace. With an FAA Determination of No Hazard, potential safety hazards resulting from construction and operation of the project in proximity to the Oakdale Municipal Airport would be *less than significant*.

No other project sites are located within 2 miles of a public use airport, or identified (using the FAA's notice criteria screening tool) as potentially requiring submittal of a Notice of Proposed Construction; therefore, the project would result in *no impact* related to airport safety at these sites.

**Impact HZ-7: The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)**

Project construction could interfere with an adopted emergency response plan or emergency evacuation plan if construction activities were to involve the complete or partial closure of roadways, interfere with identified evacuation routes, restrict access for emergency response vehicles, or restrict access to critical facilities such as hospitals or fire stations. Construction at all project sites would occur within the limits of

existing SFPUC facilities or leased radio tower sites and would not interfere with roadways. Worker trips and equipment deliveries would cause minimal increases in traffic on public roads. During project operation, project sites would be inspected every three months for routine cleaning and maintenance of equipment; the effect of worker vehicles on local roadways would be negligible. In sum, the project impact related to interference with an adopted emergency response plan or emergency evacuation plan would be *less than significant*.

**Impact HZ-8: The project would not expose people or structures to a significant risk of loss, injury or death involving fires. (Less than Significant)**

During construction, the use of vehicles and equipment, as well as the temporary onsite storage and use of small quantities of diesel fuel, gasoline, and lubricants could pose a fire risk. The time of greatest fire danger would be during the clearing phase, when people and machines are working around vegetative fuels, such as dry grasses, that can be highly flammable. Potential sources of ignition include equipment with internal combustion engines; gasoline-powered tools; and equipment or tools that produce a spark, fire, or flame; as well as sparks from blades or other metal parts scraping against rock, overheated brakes, or other poorly maintained construction equipment. Smoking by construction personnel would also be a potential source of ignition during construction.

Regulations governing the use of construction equipment in fire-prone areas are designed to minimize the risk of wildland fires.[202] Fire-prone areas include any forest-, brush-, or grass-covered land. These regulations: restrict the use of equipment that may produce a spark, flame or fire; require the use of spark arrestors on construction equipment that has 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 for various types of work in fire-prone areas. The project would also be subject to the requirements of the California Fire Code.[203] Fire code regulations (Chapter 14) also address fire safety during construction. Among other things, these regulations require the owner to designate a Fire Prevention Program Superintendent who is responsible for developing an approved fire prevention plan in cooperation with the fire chief and ensuring that it is carried out through completion of the project. Construction precautions against fire must include the following: prohibitions on smoking except in approved areas; appropriate storage of materials susceptible to ignition, such as flammable and combustible liquids and oily rags; procedures for cutting and welding; and maintenance of portable fire extinguishers

[202] California Public Resources Code Sections 4427-4442.
[203] CCR, Title 24, Part 9.

and water for fire fighting. Fire Code Chapter 38 outlines the regulations for storage and use of LPGs, and would apply to the two new propane tanks that would be installed as part of the project.

With adherence to these mandatory requirements, impacts related to fires from project construction and operation would be *less than significant*.

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

The geographic scope of cumulative impacts associated with hazards and hazardous materials varies from site-specific for impacts associated with encountering hazardous materials present in soil and groundwater, to the nearby project area for impacts associated with a potential release of hazardous materials and fire hazards, and to several miles for aviation safety hazards. Site-specific impacts associated with location on a hazardous materials site (Impact HZ-5) would not be cumulative in nature. Potential impacts associated with the routine use of hazardous materials (Impact HZ-1), the potential for accidental release of hazardous materials (Impact HZ-2), and fire hazards (Impact HZ-4) would be common to all the projects that could be constructed and operated in the site vicinity (refer to Appendix A); therefore, cumulative project activities have the potential to result in a significant cumulative impact. Because the proposed project's hazardous materials use is limited to a relatively minor quantity of hazardous materials during construction and two LPG tanks during operation and maintenance, its contribution to any significant cumulative impact would not be cumulatively considerable (less than significant). Of the cumulative projects in the site vicinity, only one project was identified that could contribute to impacts related to radiofrequency emissions and airport hazards: a new 130-foot tower and wireless communication facility concealed as a pine tree is proposed on Stearns Road in Oakdale (Project No. 20 in Appendix A). As described above under Impact HZ-3 and Impact HZ-6, FCC licensing of radio frequency signals and FAA review of new construction within an airport safety area would ensure the safety of proposed projects related to radiofrequency emissions and airports. Accordingly, no significant cumulative impact would result from the cumulative scenario to which the SJVCS project could contribute.

———————————

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **E.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 which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner? | ☐ | ☐ | ☒ | ☐ | ☐ |

All of the project sites except for the leased sites (Modesto 2 ATC, Mt. Diablo SBA, and Sunol Ridge ATC) and the Oakdale Office are within SFPUC's ROW for water or electric utilities. Because these sites are currently occupied by facilities that are incompatible with mining or mineral extraction, and zoned by the cities and counties they cross as utility ROWs, none of the project sites are currently available for mineral resource extraction. The sites outside of the ROW are currently dedicated to other uses. Furthermore, the project would not for any reason result in the loss, depletion, or future availability of a mineral resource. For these reasons, significance criteria 17a and 17b above are not applicable to the project.

**Impact ME-1: The project would not encourage activities that result in the use of large amounts of fuel, water, or energy, or that use these in a wasteful manner. (Less than Significant)**

Minor quantities of fuel, water, and energy would be required to power new communication equipment and properly maintain solar panels and backup systems. The estimated amount of electricity to operate the radio equipment at each site is 2 kW per hour. At sites without existing electrical power, solar panels would be used as the primary power source, and an LPG-fueled generator would be used only to provide back-up power. Long-term operation and maintenance activities would include periodic refueling of back-up tanks, replacement of solar power storage batteries, and washing of solar panels (which would involve minor amounts of water). No landscaping is proposed at any of the sites. For these reasons, and because the use of PV panels would minimize the need for fuel-powered generators, the project's use of fuel, water, and energy would be minimal, and would not be wasteful. The impact would be *less than significant.*

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

The relevant area for cumulative energy impacts is the service area for the energy provider, which includes the geographic area of the identified cumulative projects. All of the cumulative projects would use some quantity of fuel, water, or energy, particularly large development projects and mining projects, and would contribute to a cumulative impact on energy resources. The proposed project's incremental contribution to energy consumption would not be cumulatively considerable, due to the short-term nature of construction and the minimal energy requirements for operation of radio antennas. Further, the project includes installation of solar panels to reduce its need for grid-supplied electricity. The cumulative impact would be *less than significant*.

---

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.18. AGRICULTURAL AND FOREST RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – **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? | ☐ | ☐ | ☐ | ☒ | ☐ |

The project sites are not located on forest land or timberland (refer to Table 3 in Section B, Project Setting). Because the project sites are not within forest land or land zoned for forest land or timberland, significance criteria 18c and 18d above are not applicable to the project.

**Impact AG-1: The project would not 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. (Less than Significant)**

The only project site located on land identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the Farmland Mapping and Monitoring Program of the California Resources Agency is Pelican Cross Over.[204] This criterion does *not apply* to any of the other project sites.

The Pelican Cross Over site is located within areas mapped as prime farmland by the Farmland Mapping and Monitoring Program; however, no cropland is located within the project site (see Figure 2-16). Therefore construction, operation, and maintenance of the Pelican Cross Over site would not adversely affect existing agricultural operations. Physical impacts to prime farmland soils would be negligible, as no new tower would be required and excavated soils for the electrical conduit would be backfilled following installation. The only permanent excavation would be for a microwave radio cabinet on a 6-foot by 6-foot concrete pad. Soil would be excavated to 1 foot below the ground surface and any excess soil would likely be spread onsite. Because no existing agricultural operations exist onsite and because the characteristics of the site's prime farmland soils would be maintained, the impact of construction, operation, and maintenance of the Pelican Cross Over site on prime farmland would be *less than significant*.

**Impact AG-2: The project not would conflict with existing zoning for agricultural use or a Williamson Act contract. (No Impact)**

Williamson Act contracts are used by local governments to preserve agricultural and open space lands by discouraging conversion to urban uses. None of the proposed project sites are located on Williamson Act lands. Therefore, no conflicts with existing zoning or the Williamson Act would occur, and the project would result in *no impact*.

[204] California Department of Conservation, 2012. *Maps of Important Farmland*, Farmland Mapping and Monitoring Program, Division of Land and Resource Protection. http://www.conservation.ca.gov/dlrp/fmmp/products/Pages/FMMP-MapProducts.aspx (accessed December 16, 2012).

**Impact AG-3: The project would not involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use. (No Impact)**

There are no sites that would convert farmland to non-agricultural use. None of the project sites are located on forest land or timberland. The project would not increase the supply, capacity, or geographic reach of utilities or public services, there would be no indirect effects related to growth inducement and its resulting conversion of farmland or forestland. For these reasons, the project would have *no impact* relating to the conversion of farmland or forest land to another use.

**Impact C-AG: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not have a significant cumulative impact related to agricultural and forest resources. (No Impact)**

As discussed under Impact AG-1, although the Pelican Cross Over site is mapped as prime farmland, no existing agricultural operations exist on the site and no prime farmland would be converted to non-agricultural use. Therefore, the proposed project would not contribute to any cumulative impact related to conversion of agricultural land.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **E.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 or otherwise adversely affect a rare or endangered plant or animal species. (Less than Significant with Mitigation)**

The discussion in Section E, Evaluation of Environmental Effects, identifies potentially significant impacts on the environment related to cultural resources, air quality, utilities and service systems, biological resources, and geology and soils. However, mitigation measures have been provided to address these potentially significant project-level impacts. Implementation of the mitigation measures would reduce the impacts to a less-than-significant level.

As discussed in Impact BI-1 in Section E.13, Biological Resources, project impacts on special-status amphibians and reptiles (Western spadefoot toad, California tiger salamander, Foothill yellow-legged frog, and San Joaquin coachwhip) would be less than significant with implementation of the following mitigation measures: **Mitigation Measures M-BI-1a, Designated Work Areas, Vehicle Access and Equipment Staging Areas; M-BI-1b, Pre-Construction Surveys for Special-status Amphibians and Reptiles; M-BI-1c, Wildlife Exclusion Fencing and Construction Monitoring; and M-BI-1d, Mandatory Biological Resources Awareness Training**. In addition, impacts on special-status bird species (Cooper's hawk, sharp-shinned hawk, Swainson's hawk, white-tailed kite, osprey, Western burrowing owl, and California horned lark) would be less than significant with implementation of **Mitigation Measures M-BI-1e, Nesting Raptor and Other Nesting Bird Survey** and **M-BI-1f, Pre-Construction Survey for Burrowing Owls**. Wetland habitats would be protected with implementation of **Mitigation Measure M-BI-3, Wetland Protection.** In summary, impacts related to reducing the number or restricting the range of a rare or endangered plant or animal would be *less than significant with mitigation*.

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

As discussed in Impact CP-1, project impacts on historic architectural resources would be less than significant. As discussed in Impacts CP-2, CP-3, and CP-4, construction activities associated with the proposed project could result in potential impacts on unknown paleontological resources, archaeological resources, and human remains. These impacts would be less than significant with implementation of **Mitigation Measures M-CP-2, Accidental Discovery of Archaeological Resources, M-CP-3 Unanticipated Discovery Measures for Paleontological Resources, and M-CP-4, Unanticipated Discovery Measures for Human Remains, Associated or Unassociated Funerary Objects**. Therefore,

impacts related to elimination of important examples of California history or prehistory are *less than significant with mitigation*.

**Impact MF-3: The proposed project could have impacts that would be individually limited, but cumulatively considerable. (Less than Significant with Mitigation)**

Section 15130 of the State CEQA Guidelines requires a reasonable analysis of the significant cumulative impacts of a proposed project. *Cumulative impact* refers to "two or more individual effects that, when considered together, are considerable or able to compound or increase other environmental impacts." The individual effects may be changes resulting from a single project or an increase in the number of environmental impacts. The cumulative impact is the change in the environment that results when the incremental impact of the project is added to closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects that take place over a period of time (CEQA Guidelines Section 15355 (a)(b)).

For the purposes of this initial study, the geographic context for the proposed project's cumulative impact assessment generally spans the San Joaquin Valley in the vicinity of the 20 SJVCS project sites. Recently approved and reasonably foreseeable projects and planning efforts in the vicinity of each project site are presented in Appendix A.

This initial study determined that the proposed project would have no impact or is not applicable for the following issues: population and housing; wind and shadow; and recreation. Therefore, the proposed project would not contribute to cumulative impacts related to these issue areas.

The assessment of potential cumulative impacts for the remaining environmental issue areas is provided in the relevant subsections of Section E, Evaluation of Environmental Effects. However, for the reasons described in Sections E.1 through E.19, with implementation of mitigation measures to address potentially significant project-level impacts, the proposed project's contribution to all cumulative impacts on the environment would not be cumulatively considerable (*less than significant with mitigation*).

**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, air quality, utilities and service systems, biological resources, and geology and soils. Of these, impacts related to air quality and geologic/soil hazards could adversely affect human

beings. Mitigation measures have been 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 for the following environmental issue areas: land use; aesthetics; transportation and circulation; noise; hydrology and water quality; hazards and hazardous materials; population and housing; wind and shadow; recreation; public services; mineral and energy resources; and, agricultural and forest resources. Therefore, with implementation of the mitigation measures specified in Sections E.1 through E.18, the proposed project would not result in substantial adverse effects, direct or indirect, on human beings (*less than significant with mitigation*).

## F. MITIGATION MEASURES

The following mitigation measures have been adopted by the project sponsor and are necessary to avoid potential significant impacts of the proposed project.

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

For **all project sites**, the following mitigation measure is required to avoid any potential adverse effect from the project on accidentally discovered buried or submerged historical resources as defined in *CEQA Guidelines* Section 15064.5(a)(c). The SFPUC shall distribute the San Francisco 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, and pile driving) 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, and supervisory personnel. 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 meeting the Secretary of Interior standards for archaeology. 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 subject to review by the ERO. The ERO may also require that the SFPUC immediately implement a site security program if the archaeological resource is at risk from 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 describes 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 NWIC shall receive one copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the San Francisco Planning Department shall receive one bound copy, one unbound copy, and one unlocked searchable PDF copy on CD of the FARR, along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the California or Registers. 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.

**Mitigation Measure M-CP-3: Unanticipated Discovery Measures for Paleontological Resources**

At the **Throttle 2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office** sites, if construction crews discover fossils or fossil-like material during excavation and earth-moving operations, all earthwork and other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified paleontologist, as defined by Society of Vertebrate Paleontology guidelines, can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the qualified paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and activities occurring on the site. If treatment and salvage is required, recommendations will be consistent with Society of Vertebrate Paleontology guidelines and currently accepted scientific practice. If required, treatment for fossil remains may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report describing the finds. The paleontologist's recommendations shall be subject to review and approval by the ERO or designee. The SFPUC and/or its contractor will be responsible for ensuring that treatment is implemented. If no report is required, the SFPUC and/or its contractor will nonetheless ensure that information on the nature, location, and depth of all finds is readily available to the scientific community through university curation or other appropriate means.

**Mitigation Measure M-CP-4: Unanticipated Discovery Measures for Human Remains, Associated or Unassociated Funerary Objects**

For **all project sites**, the treatment of human remains and of associated or unassociated funerary objects discovered during any soils-disturbing activity shall comply with applicable state laws. Such treatment would include immediate notification of the applicable county Coroner and, in the event of the Coroner's determination that the human remains are Native American, notification of the NAHC

who shall appoint a Most Likely Descendant (Public Resources Code [PRC] Section 5097.98). The archaeological consultant, SFPUC, and Most Likely Descendant shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects [(CEQA Guidelines Section 15064.5(d)]. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. If the Most Likely Descendant and the other parties cannot agree on the reburial method, the SFPUC shall follow Section 5097.98(b) of the PRC, which states that "the landowner or his or her authorized representative shall 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." All archaeological work performed under this mitigation measure shall be subject to review by the ERO or designee.

**Mitigation Measure M-AQ-2a: SJVAPCD Applicable Regulation VIII Fugitive Dust Reduction Measures**

At the **Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Warnerville Yard, Oakdale Office, Albers Road Valve House, Roselle Cross Over, Modesto 2 ATC, San Joaquin Valve House, Pelican Cross Over, and Tesla Treatment Facility Tower** sites, project construction activities shall comply with SJVAPCD's Regulation VIII (Dust Control) in effect at the time of project construction. The required control measures from Regulation VIII applicable to the project may include the following:

- All disturbed areas that are not being actively used for construction purposes, including storage piles, will be effectively stabilized for dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- All onsite unpaved roads and offsite unpaved access roads will be effectively stabilized for dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scarping, excavation, land leveling, grading, and cut and fill will be effectively controlled for fugitive dust emissions using an application of water or by presoaking.
- When materials are transported offsite, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized for fugitive dust emissions using sufficient water or chemical stabilizer/suppressant.
- Within urban areas, track-out will be immediately removed when it extends 50 feet or more from the site, and at the end of each workday.

- Excavation and grading activities shall be suspended when winds exceed 20 miles per hour unless utilizing engineering controls such as spraying water for dust control and air monitoring. Regardless of wind speed, the SFPUC and its contractors must comply with Regulation VIII's 20 percent opacity limitation, which states that visible dust emissions from the work site may not be greater than 20 percent opacity.

**Mitigation Measure M-AQ-2b: BAAQMD Basic Construction Measures**

At the **Mt. Diablo SBA, Sunol Ridge ATC**, and **Calaveras Substation** sites, the SFPUC shall post one or more publicly visible signs with the telephone number and person to contact at the SFPUC with complaints related to excessive dust or vehicle idling. This person shall respond to complaints and, if necessary, take corrective action within 48 hours. The telephone number and person to contact at the BAAQMD's Compliance and Enforcement Division shall also be provided on the sign(s) in the event that the complainant also wishes to contact the applicable air district.

In addition, to limit dust and equipment exhaust emissions associated with project construction, the following BAAQMD-recommended Basic Construction Measures shall be included in the construction contract specifications for the project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Onsite vehicle speeds on unpaved areas shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times for construction equipment (including vehicles) shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage of this requirement shall be provided for construction workers at all access points to construction areas.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic.

**Mitigation Measure M-UT-3: Waste Management/Recycling Plan**

The SFPUC shall prepare, or require its contractor to prepare, a Waste Management Plan identifying the types of wastes that would be generated by project construction and how all waste streams would be handled. In accordance with the priorities of AB 939, the plan shall emphasize source reduction measures followed by recycling and composting methods to reduce the amount of waste being disposed of in landfills. The plan shall specify that at least 50 percent of inert solids (asphalt, concrete, dirt, fines, rock, sand, and soil) must be diverted from landfills. Upon completion, the contractor shall document achievement of the stated waste reuse and recycling goals.

**Mitigation Measure M-BI-1a: Designated Work Areas, Vehicle Access, and Equipment Staging Areas**

This measure shall be implemented during construction at the **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation**. Construction specification drawings shall illustrate site boundaries, staging area locations, and vehicle and equipment access routes. Movement of vehicles and equipment to and from the project site will be restricted to the identified routes and established roadways to minimize habitat disturbance. To reduce the likelihood of amphibian and reptile mortality from vehicles and equipment, project-related vehicles shall observe a 20-mile-per-hour speed limit within designated work areas and on-site roads. All heavy equipment, vehicles, and supplies will be stored within the designated project limits or other developed location at the end of each work period. At no time will project materials or equipment enter or be stored in Environmentally Sensitive Areas, such as vernal pools, seasonal wetlands, and seasonal streams.

**Mitigation Measure M-BI-1b: Pre-construction Surveys for Special-status Amphibians and Reptiles**

Prior to the commencement of construction activities at **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation** sites, a qualified biologist shall conduct a survey for amphibians and reptiles within and immediately adjacent to these project sites in areas deemed suitable habitat for the presence of special-status amphibians and reptile species (detailed below). Based on the general absence of habitat, there is a low likelihood that a federal or State-listed wildlife species would be encountered at project sites. However, if California tiger salamander or California red-legged frog are identified during preconstruction surveys, work at the individual site will be temporarily suspended and the CDFW and/or USFWS (depending upon species) shall be contacted for guidance within 24 hours. Similarly, the SFPUC environmental compliance manager shall be contacted immediately if special-status species are observed within a project site. Due to the generally disturbed condition of most project sites, a passive or active relocation approach may be accepted by the resource agencies to avoid impacts to these species. The SFPUC shall notify the appropriate resource agency immediately if any federal or State-listed species are accidentally taken (killed or injured) onsite, and shall submit a report that includes date(s), location(s), habitat description, and any corrective measures taken to protect the species found. If non-listed amphibians or reptiles are encountered, such as foothill yellow-legged frog, western spadefoot, or San Joaquin coachwhip, identified animals shall be relocated to suitable off-site habitat by the qualified biologist without consulting the resource agencies.

Project sites shall be re-inspected by the biologist whenever a lapse in construction activity of two weeks or greater has occurred. Project locations and species requiring pre-construction surveys are summarized in Table 16, and species that may occur at each site are as follows:

- ***Oakdale Portal*:** California tiger salamander, Foothill yellow-legged frog, Western spadefoot toad
- ***Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In*:** Western spadefoot toad
- ***Emery Cross Over*:** Western spadefoot toad, California tiger salamander
- ***Tesla Treatment Facility Tower*:** San Joaquin coachwhip, California red-legged frog, Western spadefoot toad

- ***Mt. Diablo SBA*:** San Joaquin coachwhip, California tiger salamander, California red-legged frog,
- ***Sunol Ridge ATC and Calaveras Substation*:** California tiger salamander, California red-legged frog

**Mitigation Measure M-BI-1c: Wildlife Exclusion Fencing and Construction Monitoring**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, and Calaveras Substation** sites, prior to the commencement of construction activities, temporary wildlife exclusion fencing (e.g., silt fencing) shall be installed at locations as determined by a qualified biologist to prevent amphibians and reptiles from entering the site during construction work. At Calaveras Substation, fencing is required only for the staging area outside of the developed substation facility. For short duration disturbances (e.g., trenches that are open for several hours and not overnight) work activities may occur without wildlife exclusion fencing provided that a qualified biologist is present during ground disturbance.

The location of exclusion fencing shall be approved by a qualified biologist and included in final construction specification drawings. The biologist shall inspect fencing to ensure proper installation and placement. SFPUC shall ensure that the temporary fencing is continuously maintained until construction activities are completed.

Each of these sites shall be monitored for biological resources during initial ground disturbance by the project biologist and thereafter on a weekly basis to verify species absence from the site and ensure proper fence functioning. A trained construction worker who has attended the Biological Resources Awareness Training shall perform daily biological inspections and notify the SFPUC environmental compliance manager if special-status species are observed within the project site.

**Mitigation Measure M-BI-1d: Mandatory Biological Resources Awareness Training**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, Tesla Treatment Facility Tower, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation** sites, a worker education program shall be implemented to familiarize all construction workers about the importance of avoidance of harm to special-status species and sensitive natural communities. The training shall be provided to all personnel before working at the site and include information regarding the importance of maintaining speed limits, appropriate disposal of trash and waste materials, keeping construction equipment and materials within the designated project boundaries, and respecting exclusion zones. SFPUC and its construction contractor shall confirm that all workers have been trained appropriately.

**Mitigation Measure M-BI-1e: Nesting Raptor and Other Nesting Bird Survey**

At **Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Roselle Cross Over, and San Joaquin Valve House, and Tesla Treatment Facility Tower**, SFPUC will retain a qualified wildlife biologist to conduct preconstruction surveys for nesting raptors and migratory birds prior to the commencement of construction activities that will occur between March 1 and August 31 of any given year. The surveys will be conducted a minimum of 14 days prior to the start of construction during nesting season. A ½-mile survey area will be surveyed for nesting Swainson's hawks; a 500-foot survey area in addition to the work limit area will be surveyed for nesting raptors; a 150-foot survey area in addition to the work limit area will be surveyed for other nesting birds. If no active nests are detected, no additional mitigation measures will be required.

If surveys indicate that migratory bird or raptor nests occur in areas where construction activities will take place, a no-work buffer will be established around the nest site to avoid disturbance or destruction of the nest site until after a qualified biologist determines that the young have fledged. Generally, the buffer zones are 100 feet for nesting passerine birds, 250 feet for nesting raptors other than golden eagles, ~~and~~ 500 feet for golden eagles, and ¼-mile for Swainson's hawks. The size of nest buffers and need for biological monitoring will be determined on a case-by-case and shall consider the professional opinion of the qualified biologist, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed to make an appropriate decision on buffer distances. Active nests within buffer zones will be periodically monitored during construction by the on-site monitor. If construction activities have the potential to threaten the viability of an active nest discovered during the survey, then either a minimum buffer will be flagged around the active nest and designated a construction-free zone until the nest is no longer active or other appropriate avoidance measures, developed in coordination with CDFW, will be implemented to ensure that the nest is adequately protected. These measures would ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code 3503.5.

**Mitigation Measure M-BI-1f: Pre-construction Surveys for Burrowing Owls**

At **MP-56.51 Tie-In and Roselle Cross-Over**, pre-construction surveys for burrowing owls shall be conducted by a qualified biologist within 30 days prior to the start of work activities where land construction is planned in known or suitable habitat. This survey can be conducted concurrently with the bird surveys described in Mitigation Measure M-BI-1e. The survey area shall include the project limit of work, along with a 250-foot buffer zone.

If construction activities are delayed for more than 30 days after the initial preconstruction surveys, a new preconstruction survey shall be required. All surveys shall be conducted in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation ~~California Burrowing Owl Consortium~~ survey protocols.

If burrowing owls are discovered in the project site or buffer zone, the SFPUC environmental compliance manager shall be notified immediately. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through non-invasive methods that either: (1) the birds have not begun egg laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. If these criteria are not met, occupied burrows during the nesting season will be avoided by the establishment of a no-work buffer of 250 feet around the occupied/active burrow. Where maintenance of a 250-foot no-work buffer zone is not practical, the SFPUC shall consult with the CDFW to determine appropriate avoidance measures. Where work is continued with CDFW concurrence, burrows occupied during the breeding season will be closely monitored by the biologist until the young fledge (leave the nest). The onsite biologist shall have the authority to stop work if it is determined that construction-related activities are disturbing the owls.

If criterion 1 or 2 above are met and, if CDFW concurs, the biologist shall undertake passive relocation techniques by installing one-way doors in active and suitable burrows, allowing owls to escape but not re-enter. Owls should be excluded from the project site limit of work, including a 250-foot buffer zone, by having one-way doors placed over the entrance to potential burrows in order to prevent owls from inhabiting those burrows.

For construction activities that occur outside of nesting season, passive relocation techniques (installation of one-way doors) in active and suitable burrows shall take place. Construction activities may occur once a qualified biologist has determined that the burrows are unoccupied.

**Mitigation Measure M-BI-3: Wetland Protection**

At **Oakdale Portal, Throttle Station 1-3, Throttle Station 2, and San Joaquin Valve House**, wetland protection measures shall be applied to protect potential jurisdictional wetlands. These measures shall include the following:

- A protective barrier ~~(such as silt fencing)~~ shall be erected around the on-site wetland feature to isolate it from construction activities. The barrier shall include water quality protection materials, such as silt fencing.
- Signs that read "Environmentally Sensitive Area – Keep Out" shall be installed on the fencing to identify sensitive habitat;
- No equipment mobilization, grading, clearing, or storage of equipment or machinery, or similar activity shall occur at the project site until a representative of SFPUC has inspected and approved the wetland protection fencing; and,
- SFPUC shall ensure that the temporary fencing is continuously maintained until all construction activities are completed.

A fencing material meeting the requirements of both water quality protection and wildlife exclusion may be used.

**Mitigation Measure M-GE-3: Tower Foundation Engineering Design**

For the new radio towers proposed at the **Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 Tie-In, Emery Cross Over, and Oakdale Office** sites, the SFPUC and/or its contractor shall conduct appropriate site-specific geotechnical investigations, including, as necessary, subsurface exploration and soil testing. The information provided by the geotechnical studies will inform the final foundation designs and ensure that the proposed structures comply with the CBC and SFPUC's general seismic design requirements. The geotechnical evaluation shall perform adequate testing to identify the presence, if any, of potentially adverse soil conditions such as expansive, corrosive, compressible, liquefiable, or collapsible soils. Based on the nature, location, and severity of adverse soil conditions, the geotechnical study shall recommend appropriate and feasible design elements necessary to reduce the potential for unfavorable soil conditions to adversely affect project facilities. Such features may include the use of corrosion-resistant materials and coatings; the use of non-corrosive, non-expansive soil backfills; soil-treatment processes to increase bearing strength; specific soil compaction procedures and densities; and/or any other combination of soil preparation methods or foundation designs necessary to avoid or reduce the adverse effects of soils on project structures. Studies shall be conducted by a California Registered Geotechnical Engineer, and shall be in accordance with generally accepted geotechnical engineering principles and practices. Soil and rock sampling and testing shall conform to applicable standards set forth by the American Society for Testing and Materials (ASTM). Geotechnical findings and recommendations shall be provided for review and approval by the SFPUC at least 60 days before final project design. Approved geotechnical recommendations for foundation design shall become part of the proposed project.

## G. PUBLIC NOTICE AND COMMENT

### G.1 Comments Received in Response to Notification of Project Receiving Environmental Review

A "Notification of Project Receiving Environmental Review" was mailed on October 3, 2012 to property owners and residents of property within 300 feet of each project site, responsible and trustee agencies, local jurisdictions, media, and interested parties. The following comments in response to the notification were received:

- California Department of Transportation – Recommended that the environmental review document include sufficient information to allow Caltrans to assess the potential for visual impacts to the State Highway System.
- San Joaquin County Department of Public Works, Transportation Engineering Division – Requested to be added to the notification list for future project documents.
- City of Modesto Planning Department – Indicated that project work at Modesto 2 ATC (Site 14) Warnerville Yard may require a development plan review.
- Oakdale Irrigation District – Requested that the project, including work at Warnerville Yard (Site 10), be designed such that it will not interfere with the District's radio communication system.
- Tuolumne County Community Resources Agency – Commented on the potential need for review by the Tuolumne County Airport Land Use Commission for proposed towers at the Rock River Lime Plant (Site 4) and Oakdale Portal (Site 5), and the potential applicability of a Use Permit for antennas on land not owned by the City and County of San Francisco at Transmission Tower 122N (Site 3).

### G.2 Comments Received in Response to Preliminary Mitigated Negative Declaration and Initial Study

On March 6, 2013, the Planning Department circulated a Notice of Availability of and Intent to Adopt a Preliminary Mitigated Negative Declaration and Initial Study. Below are summaries of the written letters received from state and local agencies. No comments were received from property owners or residents within 300 feet of each project site, media, or interested parties. Where applicable, the summaries below also identify where changes have been incorporated into this document in response to these comments.

- **California Department of Fish and Wildlife** – provided the following recommendations: avoidance and minimization measures for raptors and other nesting birds if vegetation removal is planned; no disturbance buffers from wetlands and vernal pools; consultation with the U.S. Army Corps of Engineers to determine whether formal wetland delineation would be necessary; focused surveys for special-status plant species; pre-construction surveys for nesting birds, in particular Swainson's hawk, for construction activities in the breeding season and no disturbance buffer areas around active nests; protocol surveys for California tiger salamander

and burrowing owl; and, consultation with United States Fish and Wildlife Service for federally listed species. In response to these recommendations suggested by CDFW, refinements were made to mitigation measures in Section E.13, *Biological Resources*, on pages 169 through 171.

- **Central Valley Regional Water Quality Control Board** – provided information regarding the water quality permits administered by the agency. Additional clarification regarding the Construction General Permit common plan of development criteria was provided by the SWRCB Storm Water Section. In response, changes were made to the following Initial Study sections: Section A.5.9, *Project Description*, page 16; Section E.15, *Hydrology and Water Quality*, pages 183 through 191; and Section E.16, *Hazards and Hazardous Materials*, pages 193-194.

- **City of Oakdale, Community Development and Services Department** – indicated that the proposed tower at the Oakdale Office site conflicts with existing residential zoning and suggested that a new wireless tower would not be compatible with the residential neighborhood to the north and east of the site. In response to these comments, modifications were made to Initial Study Section C.4, *Compatibility with Zoning, Plans, and Policies*, pages 59-60 and Section E.1, *Land Use and Land Use Planning*, on page 65.

- **City of Riverbank** – identified zoning requirements for wireless telecommunication towers and antennas in the Riverbank Code of Ordinances Section 153.335. In response, changes were made to Initial Study Section A.7, *Project Description*, page 16.

- **Tuolumne County, Community Resources Agency** – identified requirements for review of structures taller than 75 feet by the Tuolumne County Airport Land Use Commission; acknowledged exemptions from Use Permit requirements for wireless communication facilities less than 100 feet tall used by a public utility; and, recommended review of the potential for California tiger salamander occurrence at Rock River Lime Plant (Site 4). In response to these comments, Initial Study Section A.7, *Project Description*, page 16, and Section E.13, *Biological Resources*, page 163, were clarified.

- Stanislaus County, Environmental Review Committee – stated that it had no comments on the PMND.

- **Oakdale Irrigation District** – requested that the project design not interfere with an existing communication system that utilizes 450 and 900 MHz spectrum radios. In response, text was added to Initial Study Section A.4, *Project Description*, page 5.

- **Modesto Irrigation District, Electrical, Irrigation and Domestic Water Divisions** – had no comments or objections regarding the proposed project.

## H. DETERMINATION

☐ 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 Friday 21, 2013

Bill Wycko
Environmental Review Officer
for
John Rahaim
Director of Planning

# I. INITIAL STUDY AUTHORS AND PROJECT SPONSOR TEAM

## Initial Study Authors

**Planning Department, City and County of San Francisco**
Environmental Planning
1650 Mission Street, Suite 400
San Francisco, CA 94103

Acting Environmental Review Officer: ~~Bill Wycko~~Sarah Jones
Senior Environmental Planner: Steven H. Smith, AICP
Senior Reviewer: Valerie Young, AICP

## Project Sponsor

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

Environmental Project Manager: Craig Freeman

## Initial Study Consultants

**ESA**
550 Kearny Street, Suite 800 San Francisco, CA 94108

Project Manager: Julie Moore
Deputy Project Manager: Dylan Duvergé
Senior Reviewer: Eric Zigas

**Orion Environment (Noise, Air Quality, Greenhouse Gases)**
211 Sutter Street
San Francisco, CA 94104

Valerie Geier
Hans Giroux

# APPENDIX A

Cumulative Projects List

## APPENDIX A
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Moccasin Peak and Red Mountain Bar** | | | | | |
| 1 | SFPUC Moccasin Corporation Yard | Upgrades to existing corporation yard and possibly new administration building inside former powerhouse | 2015 - 2017 | Intersection of Highway 49 and 120, Moccasin | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 2 | Gann Investments | 968.7+ acre subdivision consisting of 26 parcels greater than 37 acres (Tuolumne County, 2011). | TBD; tentative subdivision map has been approved by the Tuolumne County Board of Supervisors | La Grange Road adjacent to the west shore of Lake Don Pedro. Not adjacent to project site, but in greater vicinity. | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| **Transmission Tower 122N, Rock River Lime Plant, Oakdale Portal, Throttle Station 1-3, Throttle Station 2, MP 56.51 and Emery Cross Over** | | | | | |
| 3 | ***SFPUC San Joaquin Pipeline System Project*** | Construction along the existing San Joaquin Pipeline System, including a new 6.7-mile pipeline beginning at Oakdale Portal, a new 10.3-mile-long pipeline beginning west of the San Joaquin River and ending to the west at Tesla Portal, construction of two new crossover facilities, two throttling stations, and two valve upgrades (SFPUC, 2012). | Eastern Segment to be complete Spring 2013.<br>Western Segment completed Summer 2012.<br>Pelican Crossover completed Winter 2012. | The San Joaquin Pipeline System Project components are located in the eastern and western portions of the San Joaquin Pipeline System. | Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 4 | ***SFPUC Rehabilitation of the Existing San Joaquin Pipelines*** | Proposal to rehabilitate the existing San Joaquin Pipeline. Project consists of condition assessment, repair, rehabilitation, upgrades (SCADA), and maintenance of the existing San Joaquin Pipeline System (SFPUC, 2012; CEQANet, 2012). | Beginning in 2011 and extending over approximately 20 years | Various locations along the San Joaquin Pipeline System | Possible overlap of construction activities. Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 5 | Cooperstown Quarry (CUP08-015 and RP 08-002) | Conditional Use Permit and Reclamation Plan for the removal of 40- to 60-million tons of crushed rock on a 135-acre portion of a 706-acre parcel. Project not yet approved (Paszcowski, 2012). | TBD; Currently in litigation | APN: 63-250-13 (Tuolumne County near Stanislaus County line). Not adjacent to project site, but in greater vicinity. | Areas of potential cumulative impacts are Archaeology, Paleontology, Transportation, Noise, Air Quality, Utilities, Biology, Geology and Soils, Hydrology, Hazardous Materials, and Mineral and Energy. |
| 6 | Cooper Clay Pit (04 CUP-07, 04-RP-07) | Conditional Use Permit and Reclamation Plan for the Cooper Clay Field Mining Operation. The proposed clay pit excavation would encompass 29.8 acres, and the anticipated production is not to exceed 50,000 cubic yards in any one calendar year. Project approved 2005 (Paszcowski, 2012). | TBD | APN: 63-230-03, 63-230-04, 63-230-07 and 63-250-12 (Tuolumne County near Stanislaus County line). Not adjacent to project site, but in greater vicinity. | Areas of potential cumulative impacts are Archaeology, Paleontology, Transportation, Utilities, Biology, Geology and Soils, and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Warnerville Yard, Albers Road Valve House, and Oakdale Office** | | | | | |
| 4 | ***SFPUC Rehabilitation of the Existing San Joaquin Pipelines***[1] | Proposal to rehabilitate the existing San Joaquin Pipeline. Project consists of condition assessment, repair, rehabilitation, upgrades (SCADA), and maintenance of the existing San Joaquin Pipeline System (SFPUC, 2012; CEQANet, 2012). | Beginning in 2011 and extending over approximately 20 years | Various locations along the San Joaquin Pipeline System | Possible overlap of construction activities. Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 7 | North County Corridor State Route 108 East Route Adoption | Caltrans, in cooperation with the North County Corridor Transportation Expressway Authority, proposes the designation of the North County Corridor (NCC) as a State Route (SR) as the first step in developing a roadway in northern Stanislaus County. There are two corridors being proposed. Both corridors would lie entirely within unincorporated portions of Stanislaus County. The NCC would extend roughly 18 miles from a location on SR 108/McHenry Avenue west of the City of Riverbank in the vicinity of the intersection of SR 219 (Kiernan Avenue) to a spot on SR 120/108 about 6 miles east of Oakdale. The NCC in envisioned as a four-to-eight lane expressway with interchanges, at-grade intersections, grade-separated railroad crossings, irrigation district crossings, frontage roads and new street alignments. The NCC project is expected to be constructed in phases (DOT, 2012). | Construction funding is not expected to be available until after 2030 | Near Modesto, Riverbank, and Oakdale. Not adjacent to project site, but in greater vicinity. | Areas of potential cumulative impacts are Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 8 | Trieste Subdivision (Chesapeake Investors Inc) | A proposal to subdivide 82.1 acres into 193 residential lots (City of Oakdale, 2011). | TBD | North side of SR 108/120, west of Stearns Road, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 9 | Country Oaks Properties (acquired by JKB Homes) | Construction of a subdivision of 24 single-family residential units on 4 separate parcels totaling approximately 3.12 acres. Under construction (City of Oakdale, 2011). | Completion date unknown. | Southwest corner of Orsi Road and Laredo Drive, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |

[1] This project is in the vicinity of multiple project sites.

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Warnerville Yard, Albers Road Valve House, and Oakdale Office (cont.)** | | | | | |
| 10 | Boese Subdivision (acquired by JKB Homes) | Construction of 25 single-family residential units on 5.878 acres. Under construction (City of Oakdale, 2011). | Completion date unknown | West side of Orsi Road between J Street and Lando Drive, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 11 | Randy Thomas Subdivision (acquired by JKB Homes) | Construction of 24 single-family residential units on 5.56 acres. Under construction (City of Oakdale, 2011). | Completion date unknown | West side of Orsi Road between J Street and Lando Drive, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 12 | Richard Murdoch | Construction of 8 residential lots on 1.687 acres. Under construction (City of Oakdale, 2011). | Completion date unknown | North side of Sierra Road between Viewpoint Avenue and Maag Avenue, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 13 | C&M Properties Inc. (Marrad Group Inc.) | A proposal to subdivide 3.23 acres into 26 residential lots (City of Oakdale, 2011). | TBD | 636 Peterson Road and 1135 East J Street, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 14 | Land Development Services | Construction of 17 small residential lots on 1.84 acres. Project has been approved (City of Oakdale, 2011). | TBD | 911 and 915 G Street, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 15 | Lotus Development | A proposal to subdivide two parcels (a 1-acre parcel and a 1.92-acre parcel) into 9 lots (City of Oakdale, 2011). | TBD | 643 and 666 Hill Road, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 16 | Albers Road Widening Project | The project would widen a 1.92-mile-long segment of Albers Road from approximately 200 feet north of Milnes Road to 200 feet south of Claribel Road. The widened road section would consist of a 50-foot-wide paved surface with two through traffic lanes and a continuous center lane (Stanislaus County, 2011a). | Planned to begin in 2017 | Albers Road between Milnes Road and Claribel Road, Oakdale, located approximately 1.7 to 3.75 miles south of Albers Road Valve House | Areas of potential cumulative impacts are Transportation, Noise, Air Quality, and Biology. |
| 17 | Potable Water Well 10 | Installation of new potable water well to supply drinking water to the existing City of Oakdale drinking water distribution system. Draft CEQA document published 2009 (CEQANet, 2012). | TBD | Jasmine Court, Oakdale | Areas of potential cumulative impacts are Utilities and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Warnerville Yard, Albers Road Valve House, and Oakdale Office (cont.)** | | | | | |
| 18 | Potable Water Well 9 | Construction of a 16in. diameter potable well with a 12in. diameter discharge pipe. The well is connected to the existing potable water supply system owned and operated by the City of Oakdale. The well is in a sound-attenuated enclosure with a 200hp vertical turbine pump whose intake is 200 ft. below ground (CEQANet, 2012). | TBD | S. Willowood and W. J St., Oakdale | Areas of potential cumulative impacts are Utilities and Hydrology. |
| 19 | 2030 General Plan Update | Consists of a comprehensive update to Oakdale's current General Plan, two new specific plans, and a Climate Action Plan. Buildout of the 2030 General Plan, the Crane Crossing Specific Plan, and the Sierra Pointe Specific Plan could result in an additional 7,287 dwelling units and 8 million square feet of non-residential growth (CEQANet, 2012). | TBD | Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 20 | Wireless Communication Facility | Request to install a new wireless communication facility consisting of a 130 foot high tower concealed as a pine tree with 12 antennas and a 12' x 20' radio equipment shelter at its base on a 132 acre property in the R-A zoning district (CEQANet, 2012). | TBD | Stearns Road, Oakdale (Township: 2S; Range: 10E; Section: 12) | Areas of potential cumulative impacts are Utilities and Aesthetics. |
| 21 | East F Street Corridor Specific Plan | Proposal to divide 82.1 acres into 155 residential lots as well as four remainder lots. Of the 155 lots, 99 are proposed as a small-lot senior housing development and the other 56 lots are proposed as single-family residential units (CEQANet, 2012). | TBD | North of D Street and west of Stearns Road, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 22 | *City of Oakdale Burchell Hill Subdivision Tree Planting Project* | Proposal to plant 80 trees in the Burchell Hill Subdivision of the City of Oakdale. Trees will be native and non-native ornamentals planted using 15 gallon commercial stock (CEQANet, 2012). | April 2011 to March 2013 | Burchell Hill Subdivision, Oakdale | Areas of cumulative impacts are Aesthetics and Biology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Warnerville Yard, Albers Road Valve House, and Oakdale Office (cont.)** | | | | | |
| 23 | Oakdale Senior Housing | Construction of a 50 unit affordable multi-family senior housing project. The proposed site plan includes a mixture of one and two bedroom apartment units in a two and three story building. Three community facility rooms, laundry facility and on-site open space and parking are also included. In addition, a walking path will connect the senior center on the corner which provides many activities for seniors (CEQANet, 2012). | TBD | 730 Old Stockton Road, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 24 | Rich Murdoch | A proposal to subdivide 12.05 acres for 28 condominiums (City of Oakdale, 2011). | TBD | Behind the Cost Less Shopping Center, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 25 | River Oak Grace Community Church | Expansion of existing church to accommodate 1,500 people. Project will include the elimination of a sanctuary, expansion of a multi-purpose building, addition of a small multi-purpose building, and classroom building modification and relocation (Wage, 2012). | TBD | 7712 Rodden Road, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Utilities, and Public Services. |
| 26 | Reinman Subdivision | Construction of 19 single-family residential units on a 5.86 +/- parcel into (City of Oakdale, 2011). | Complete | 1234 River Avenue, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 27 | Frontier Community Builders | A subdivision of 111 residential lots on 10.68 acres within the Brindle Ridge Specific Plan area. Under construction (City of Oakdale, 2011). | Completion date unknown | Oakdale (APN 063-013-021 acquired by Morrison Homes) | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 28 | Bridle Ridge Specific Plan | Phase I: Construction of 492 single-family residential units on 123.4 acres within a portion of the Bridle Ridge Specific Plan. Under construction (City of Oakdale, 2011). | Completion date unknown | West of S Willowood and Greger, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 29 | Bridle Ridge Specific Plan | Phase 2: construction of 465 lots on 158.92 acres. 181 single-family residential lots, ± 9.04 acres of medium density residential, ± 5.4 acres of high density residential, and a ± 10-acre school site. Phase 3: construction of 284 lots for single-family residential and two neighborhood parks. Under construction (City of Oakdale, 2011). | Completion date unknown | West of South Willowood and Greger, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Warnerville Yard, Albers Road Valve House, and Oakdale Office (cont.)** | | | | | |
| 30 | The Vineyards III, Frontier Community Builders | Construction of 146 single-family residential units on 37 acres in a portion of the Bridle Ridge Specific Plan parcel. Under construction (City of Oakdale, 2011). | Completion date unknown | Merlot Drive, West J Street and West of Willowood, Oakdale | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| **Roselle Cross Over** | | | | | |
| 31 | **SFPUC Roselle Crossover Rehabilitation Project** | Project would provide local and remote control and monitoring of portions of the Hetch Hetchy water system. The project consists of installation of automation and protective devices for identified valve systems. The work would occur at the San Joaquin Valve House, Roselle Crossover Facility, and Oakdale Portal (SFPUC, 2012). | Completed in 2011 | Multiple locations along the San Joaquin Pipeline System | Areas of potential cumulative impacts are Utilities, Biology, Geology and Soils, and Hydrology. |
| 4 | ***SFPUC Rehabilitation of the Existing San Joaquin Pipelines*** | Proposal to rehabilitate the existing San Joaquin Pipeline. Project consists of condition assessment, repair, rehabilitation, upgrades (SCADA), and maintenance of the existing San Joaquin Pipeline System (SFPUC, 2012; CEQANet, 2012). | Beginning in 2011 and extending over approximately 20 years | Various locations along the San Joaquin Pipeline System | Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 32 | **Tivoli Specific Plan** | The Tivoli Specific Plan is an approved project for the development of a 454-acre area: 286 acres of various densities of residential uses with a buildout potential of between 1,800 and 3,200 dwelling units, 14 acres of neighborhood-serving commercial, 6 acres of general commercial, 67 acres of regional-serving commercial, 2 acres of office land use, a 14-acre elementary school site, 30 acres of a neighborhood park and paseo, 4 acres of public facilities, and 31 acres of roadways (CEQANet 2012; Wage, 2012). | TBD | The area in between Roselle Avenue, Sylvan Avenue, Oakdale Road, and Claratina Avenue, Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Archaeology, Paleontology, Transportation, Noise, Air Quality, Utilities, Biology, Geology and Soils, Hydrology, Hazardous Materials, and Mineral Resources. |
| 33 | Florsheim Homes | Proposal to develop 10.37 acres into 80 single-family residential lots (City of Riverbank, 2008). | TBD | East of Central Avenue between Santa Fe and Patterson, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 34 | Lafferty Homes (Merciadis/ Pyun Subdivision) | Proposal to develop 18.81 acres into 155 single-family residential units in a residential zoning district (City of Riverbank, 2008). | TBD | 4320 Santa Fe Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Roselle Cross Over (cont.)** | | | | | |
| 35 | White Subdivision (Willow Equities) | Proposal to develop 9.11 acres into 79 single-family residential units in a residential zoning district (City of Riverbank, 2008). | TBD | 6272 Central Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 36 | Bennett Development | Proposal to divide 5.36 acres into 54 single-family residential units in a residential zoning district (City of Riverbank, 2008). | TBD | 6525 Central Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 37 | Lafferty Homes (Lee Fong) | Proposal to develop 6.1 acres into 57 single-family medium-density lots (City of Riverbank, 2008). | TBD | Santa Fe Avenue between Claus Road and Central Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 38 | Riverbank Family Apartments | Proposal to develop a 65-unit multi family development lots (City of Riverbank, 2008). | TBD | APN: 132-047-067, 132-047-065, 132-047-069, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 39 | Elmwood Estates | Residential development of 86 low-medium density residential lots comprised of single- and multi-family units (City of Riverbank, 2008). | TBD | East of Rosebrook Drive, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 40 | Sterling Ridge (JKB Homes) | Construction of 181 single-family residential units in three phases: 70 single-family units (Phase I), 50 single-family units (Phase II), and 61 single-family units (Phase III) (City of Riverbank, 2008). | TBD | On the east side of Roselle Avenue just north of Minniear Road and the MID Main Canal, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 41 | JKB Homes | Residential development of 16 single-family units and one remainder (for an existing home) (City of Riverbank, 2008). | TBD | 3031 Pocket Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 42 | The Gables | Residential development of 30 low-medium residential lots comprised of single- and multi-family units (City of Riverbank, 2008). | TBD (Complete per aerial photograph of vicinity) | Northwest corner of Glow Road and Roselle Avenue, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 43 | SCM Homes | Residential development of 139 clustered units on 12.27 acres (City of Riverbank, 2008). | TBD | 6448 Patterson Road, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 44 | Riverbank Retail Center | Proposal to develop a 7.66-acre lot with new retail shops (City of Riverbank, 2008). | TBD | Patterson Road south of Estelle Avenue, Riverbank | Areas of potential cumulative impacts are Aesthetics, Transportation, Noise, and Air Quality. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Roselle Cross Over (cont.)** | | | | | |
| 45 | The Cottages (Morrison Homes) | Residential development of 56 single-family lots (City of Riverbank, 2008). | TBD | East side of Oakdale Road, north of MID Lateral No. 6 and Crawford Road, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 46 | Cornerstone (Morrison Homes) | Proposal to develop 12.26 acres into 144 single-family residential units, in the Crossroads Specific Plan area (City of Riverbank, 2008). | TBD | Oakdale Road, north of Crawford Road Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 47 | Eastwood Estates (GJ Investments) | Residential development of 8 single-family lots (City of Riverbank, 2008). | TBD | West side of Oakdale Road, north of Patterson Road, Riverbank | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 49 | Mary E. Grogan Community Park Master Plan Update | Street improvements along Litt Road and Sylvan Avenue, walkways, landscaping, irrigation, underground utilities, seven lighted soccer fields, one recreational softball field, restroom/concession building, picnic areas, children's play areas, off-street parking, area lighting, community center, aquatics center and police and fire services center. The master plan and the design development report are under revision to add the 24-hour public safety components (City of Modesto, 2012a). | TBD | Corner of Litt Road and Sylvan Avenue in Village One, adjacent to James C. Enochs High School, Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Utilities, Biology, Geology and Soils, and Hydrology, |
| 50 | North East Community Services Center | This building will be located at Mary E. Grogan Park in conjunction with the proposed community center. This facility will house Police, Fire and Parks, Recreation and Neighborhoods Department staff (City of Modesto, 2012a). | TBD | Corner of Litt Road and Sylvan Avenue in Village One, adjacent to James C. Enochs High School | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Utilities, Biology, Geology and Soils, and Hydrology, |
| 51 | Rose Villas (Florsheim) | Development of 142 lots on 25.1 acres (City of Modesto, 2011). | TBD | Oakdale Rd. and Mable Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Modesto 2 ATC** | | | | | |
| 52 | ***Modesto Junior College West Campus Facilities Master Plan*** | Construction of: 1) a two story Allied Health Building; 2) agricultural facilities; 3) multi level Science Community Center; 4) utility infrastructure extensions; 5) Loop Road extension; and 6) a new Softball complex (MCC 2007, MCC 2012). | 2009-2014 | Blue Gum and N Carpenter, Modesto (immediately adjacent to the Modesto 2 ATC site) | Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 53 | Modesto 10th & H Streets Project | Demolition of existing buildings and construction of a 7-story building with residential, retail, and office uses, parking and storage. Draft CEQA document published 2009 (CEQANet, 2012). | TBD | 9th/10th/G/H Streets, Modesto | Areas of potential cumulative impacts are Aesthetics, Transportation, Noise, Air Quality, and Utilities. |
| 54 | Highway 132/Highway 99 to Morse, Nebraska, or Dakota Avenues | Construction of a portion of the Modesto Freeway on a new alignment (Stanislaus County, 2011b). | 2018 | Modesto | Areas of potential cumulative impacts are Transportation, Noise, Air Quality, and Biology. |
| 55 | Carpenter Road Beautification | Request to rezone and amend the general plan for 15 parcels covering a total of 8.2 acres. The project would rezone the parcels from a Rural Residential zoning designation to a Planned Development District, and proposes a mix of office/retail/restaurant land uses (CEQANet, 2012). | On hold | West side of North Carpenter Road, Stanislaus County. | Areas of potential cumulative impacts are Land Use, Aesthetics, Archaeology, Paleontology, Transportation, Noise, Air Quality, Utilities, Biology, Geology and Soils, Hydrology, Hazardous Materials, Mineral Resources, and Energy Resources. |
| 56 | O'Brien Veterinary Hospital | Development of 2.22 acres into an animal veterinary hospital (CEQANet, 2012). | Complete by 2014, in two phases | Beckwith Road and Highway 99, Modesto | Areas of potential cumulative impacts are Aesthetics, Transportation, Noise, Air Quality, and Utilities. |
| 57 | Emerald Condos (Pontes Financial Group) | Development of 37 lots on 3.23 acres (City of Modesto, 2011). | TBD | 601 N. Emerald Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 58 | Briggsmore Plaza Condos (California Equity Management) | Development of 11 lots on 2.4 acres (City of Modesto, 2011). | TBD | 2000 W. Briggsmore, Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 59 | Hillglen (NA Engineering and Development) | Development of 59 lots on 9.6 acres (City of Modesto, 2011). | TBD | Hillglen Ave. and Roselle Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Modesto 2 ATC (cont.)** | | | | | |
| 60 | Virginia Avenue Subdivision (JC Williams) | Development of 6 lots on 0.95 acres (City of Modesto, 2011). | TBD | Griswold Ave. and Hackberry Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 61 | Dale Road Business Park Condos (Dale Road Business Park, LLC) | Development of 8 lots on 1.72 acres (City of Modesto, 2011). | TBD | Dale Rd. and Veneman Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 62 | Pinecone Drive (Steven Perkins) | Development of 6 lots on 1.4 acres (City of Modesto, 2011). | TBD | Pinecone Drive, Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 63 | 842 Lone Palm (4701 Stoddard, LLC) | Development of 8 lots on 3.2 acres (City of Modesto, 2011). | TBD | Kansas Ave. and Lone Palm Ave., Modesto | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, and Hydrology. |
| 64 | Kansas Woodland Business Park | Development of a 45 acre business park site (City of Modesto, 2012c; Wage, 2012). | Inactive | The Kansas-Woodland Business Park is situated northwest of downtown Modesto. It is bounded on the north by Woodland Avenue, on the South by Kansas Avenue, and on the web by Highway 99, and on the east by 9th Street. | Areas of potential cumulative impacts are Land Use, Aesthetics, Transportation, Noise, Air Quality, Utilities, Hydrology, and Energy Resources. |
| 65 | Affordable Housing Development | Proposal to rezone 8.3 acres from P-C-3 (Regional Commercial) and P-M-1 (Light Industrial) to P-P-D (Planned Development) for a 150-unit affordable housing development (CEQANet, 2012). | TBD | North Ninth Street and Carver Road, Modesto | Areas of potential cumulative impacts are Aesthetics, Transportation, Noise, Air Quality, and Utilities. |
| 66 | STA-99 Pavement Resurfacing and Restoration | Pavement resurfacing and restoration project. Construction would occur on paved and improved areas within existing Caltrans right-of-way. The purpose of the project is to restore the affected segment of State Route 99 to a good state of repair, so the roadway will require minimal maintenance. The project is needed to repair major structural distress to prevent further deterioration of the pavement (CEQANet, 2012). | TBD | State Route 99 in Stanislaus County from the Merced County line to the San Joaquin County line | Areas of potential cumulative impacts are Transportation, Noise, Air Quality, and Biology. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Modesto 2 ATC (cont.)** | | | | | |
| 67 | Juvenile Hall Commitment Center | Proposal to construct a new 60-bed, 38,800 square foot "Juvenile Commitment Facility" on a 34.4 acre County-owned property located directly adjacent to the County's existing Juvenile Justice Center at 2215 Blue Gum Avenue. The existing Juvenile Justice Center is the location of the Juvenile Probation and Probation Administration functions, Juvenile Courts operated by the Superior Court of CA, and the Juvenile Hall (CEQANet, 2012). | TBD | 2215 Blue Gum Avenue, Modesto | Areas of potential cumulative impacts are Aesthetics, Transportation, Noise, Air Quality, and Utilities. |
| **San Joaquin Valve House and Pelican Cross Over** | | | | | |
| 3 | **SFPUC San Joaquin Pipeline System Project** | Construction along the existing San Joaquin Pipeline System, including a new 6.7-mile pipeline beginning at Oakdale Portal, a new 10.3-mile-long pipeline beginning west of the San Joaquin River and ending to the west at Tesla Portal, construction of two new crossover facilities, two throttling stations, and two valve upgrades (SFPUC, 2012). | Eastern Segment to be complete Spring 2013.<br>Western Segment completed Summer 2012.<br>Pelican Crossover completed Winter 2012. | The San Joaquin Pipeline System Project components are located in the eastern and western portions of the San Joaquin Pipeline System. | Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 4 | ***SFPUC Rehabilitation of the Existing San Joaquin Pipelines*** | Proposal to rehabilitate the existing San Joaquin Pipeline. Project consists of condition assessment, repair, rehabilitation, upgrades (SCADA), and maintenance of the existing San Joaquin Pipeline System (SFPUC, 2012; CEQANet, 2012). | Beginning in 2011 and extending over approximately 20 years | Various locations along the San Joaquin Pipeline System | Possible overlap of construction activities. Areas of potential cumulative impacts are Transportation, Air Quality, Utilities, Hazardous Materials, and Mineral and Energy. |
| **Tesla Treatment Facility Tower** | | | | | |
| 68 | **SFPUC Tesla Treatment Facility** | Construction of a new advanced disinfection facility at Tesla Portal and upgrades to water treatment facilities at Thomas Shaft for the Hetch Hetchy water supply to comply with the new federal drinking water regulatory requirements. This project would also replace and upgrade the existing disinfection facilities at Tesla Portal to meet current seismic, safety/fire, and building code standards. Construction Complete (SFPUC, 2012). | Complete | SFPUC Tesla Portal Site and SFPUC Thomas Shaft Site | Areas of potential cumulative impacts are Aesthetics, Utilities, Hydrology, and Hazardous Materials. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Tesla Treatment Facility Tower (cont.)** | | | | | |
| 3 | **SFPUC San Joaquin Pipeline System Project** | Construction along the existing San Joaquin Pipeline System, including a new 6.7-mile pipeline beginning at Oakdale Portal, a new 10.3-mile-long pipeline beginning west of the San Joaquin River and ending to the west at Tesla Portal, construction of two new crossover facilities, two throttling stations, and two valve upgrades (SFPUC, 2012). | Eastern Segment to be complete Spring 2013. Western Segment completed Summer 2012. Pelican Crossover completed Winter 2012. | The San Joaquin Pipeline System Project components are located in the eastern and western portions of the San Joaquin Pipeline System. | Areas of potential cumulative impacts are Utilities, Land Use, Aesthetics, Transportation, Noise, Air Quality, Biology, Geology and Soils, and Hydrology. |
| 4 | ***SFPUC Rehabilitation of the Existing San Joaquin Pipelines*** | Proposal to rehabilitate the existing San Joaquin Pipeline. Project consists of condition assessment, repair, rehabilitation, upgrades (SCADA), and maintenance of the existing San Joaquin Pipeline System (SFPUC, 2012; CEQANet, 2012). | Beginning in 2011 and extending over approximately 20 years | Various locations along the San Joaquin Pipeline System | Possible overlap of construction activities. Areas of potential cumulative impacts are Transportation, Air Quality, Utilities, Hazardous Materials, and Mineral Resources. |
| **Mt. Diablo SBA** | | | | | |
| No projects were identified within ¼ mile of the Mt. Diablo SBA site. | | | | | |
| **Calaveras Substation** | | | | | |
| 69 | ***SFPUC San Antonio Backup Pipeline*** | The project would consist of an approximately 7,000 foot-long (or 1.3 miles) of 66-inch-diameter (or 5 ½ foot) steel pipeline extending from the Alameda Siphons to the north to the SMP-24 Quarry, near the intersection of Calaveras Road and San Antonio Creek. The alignment of the Backup Pipeline would be parallel to the existing San Antonio Pipeline. The project also includes new chemical storage, feed and water quality monitoring facilities. | March 2013 to November 2014 | All project components are located in the Sunol Valley, an unincorporated area of Alameda County, on Alameda watershed lands owned by the City and County of San Francisco and managed by the SFPUC. | Areas of potential cumulative impacts are Aesthetics, Cultural Resources, Air Quality, Biological Resources, Hydrology and Water Quality, Hazardous Materials, and Energy Resources. |
| 70 | ***SFPUC Upper Alameda Creek Filter Gallery*** | Construction of: 1) A filter gallery, including two well screens buried approximately 15 to 20 feet beneath the streambed of Alameda Creek; 2) A new pump station (Alameda Creek Pump Station) and wet well at the northeast corner of the Alameda Creek and San Antonio Creek confluence; 3) A new treatment facility adjacent to the Alameda Creek Pump Station; 4) A 36-inch-diameter, 1,250-foot-long transfer pipeline extending between the | 2014 to 2016 | Calaveras Road and the Hetch Hetchy Aqueduct, Alameda County | Possible overlap of construction activities. Areas of potential cumulative impacts are Aesthetics, Cultural Resources, Air Quality, Utilities And Service Systems, Biological Resources, Cultural Resources, Hydrology And Water Quality, Hazardous Materials, and Energy Resources. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Calaveras Substation (cont.)** | | | | | |
| | ***SFPUC Upper Alameda Creek Filter Gallery (cont.)*** | Alameda Creek Pump Station and the existing Sunol Pump Station Pipeline; and 5) Post-construction restoration of Alameda Creek in the vicinity of the Filter Gallery project to enhance aquatic and riparian habitat (SFPUC, 2012). | | | |
| 71 | ***SFPUC New Irvington Tunnel*** | The new 3.5 mile, 8.5 to 10.5 foot diameter tunnel will provide a seismically-designed connection between water supplies from the Sierra Nevada Mountains and the Alameda Watershed to Bay Area water distribution systems (SFPUC, 2012). | Mid-2010 to mid-2014 | Parallel to the existing tunnel between the Sunol Valley south of Highway I-680 and Fremont, California | Possible overlap of construction activities. Areas of potential cumulative impacts are Transportation, Aesthetics, Cultural Resources, Noise, Air Quality, Utilities And Service Systems, Biological Resources, Hydrology And Water Quality, Hazardous Materials, and Energy Resources. |
| 72 | *SFPUC Sunol Valley Water Treatment Plant Expansion and Treated Water Reservoir* | The Sunol Valley Water Treatment Plant Expansion and Treated Water Reservoir Project will add a new water treatment train at the plant, retrofit existing filters, and create a 17.5 million gallon circular balancing reservoir for treated water as it leaves the plant. The project will also include other new connections and facilities that will enable the plant to treat enough water to meet basic customer demands alone for up to 60 days after a major earthquake (SFPUC, 2012). | 2010 to mid-2013 | North of the Hetch Hetchy Aqueduct on Calaveras Road, Alameda County | Possible overlap of construction activities. Areas of potential cumulative impacts are Transportation, Aesthetics, Cultural Resources, Noise, Air Quality, Utilities And Service Systems, Biological Resources, Hydrology And Water Quality, Hazardous Materials, And Energy Resources. |
| 73 | ***SFPUC Geary Road Bridge Replacement*** | Replacement of the existing timber bridge and construction of a new steel bridge at the end of Geary Road crossing Alameda Creek in the Sunol Regional Wilderness on lands owned by the CCSF and operated by the East Bay Regional Park District (SFPD, 2011). | 2014 | Geary Road crossing Alameda Creek in the Sunol Regional Wilderness, Alameda County | Possible overlap of construction activities. Areas of potential cumulative impacts are Air Quality, Biological Resources, Hydrology and Water Quality, and Energy Resources. |
| 74 | Stream Management Master Plan Improvements (Zone 7 Water Agency) | Plan includes implementation of 49 projects over the next 20 years throughout the Zone 7 service area (in the Tri-Valley Area). Reach 10 includes Arroyo de la Laguna; proposed activities include bank stabilization and protection features, grading and terracing of eroded banks, riparian corridor enhancement for 3,000 feet, and removal of barriers to steelhead fish migration (SFPD, 2011). | Construction of the projects in Reach 10 occurred from 2008 to 2010. | San Antonio Creek and Calaveras Road, Alameda County | Areas of potential cumulative impacts are Air Quality, Biological Resources, Hydrology and Water Quality, and Energy Resources. |

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## APPENDIX A (Continued)
## CUMULATIVE PROJECTS IN THE SJVCS VICINITY

| ID | Project Name | Description | Estimated Construction Period[1] | Location | Potential Cumulative Impact Areas |
|---|---|---|---|---|---|
| **Calaveras Substation (cont.)** | | | | | |
| 75 | SMP-30 Quarry Expansion and Cutoff Wall<br>(Oliver De Silva, Inc.) | Proposal to expand the active mining area permitted under SMP-30 by 58 acres, for a total of 367 acres. A new asphalt batch plant and new concrete plant would be constructed on-site for processing and production of the mined materials. In addition, the quarry operator would install an approximately 7,800-foot-long, 35- to 45-foot-deep cutoff wall along the west bank of Alameda Creek and the south bank of San Antonio Creek to reduce the lateral flow of water from surface waters into active mining areas. The quarry operator would also restore the same banks of Alameda and San Antonio Creeks by planting native vegetation. This project is contingent upon extension of the existing lease agreement between the SFPUC and Oliver De Silva, Inc., and permit approvals from Alameda County for the expanded mining area (SFPUC, 2009; ACCDA, 2011). | The construction schedule for the proposed improvements is unknown.<br>Active mining would be extended 30 years, from 2021 to 2039. | Sunol Valley immediately west of Calaveras Road and approximately one mile south of Highway 680, Alameda County | Areas of potential cumulative impacts are Aesthetics, Cultural Resources, Air Quality, Biological Resources, Hydrology and Water Quality, Hazardous Materials, and Energy Resources. |
| **Sunol Ridge ATC** | | | | | |
| 76 | State Route 84 Expressway Widening Project<br>(Alameda County) | Widening of SR 84 (Isabel Avenue) from four to six lanes from Jack London Boulevard in Livermore through the Isabel Avenue/Vallecitos Road intersection. Project would add capacity, reduce congestion, improve local circulation, and eventually tie into the Isabel Avenue/I-580 interchange project (Caltrans, 2008; ACTIA, 2011). | 2011 to 2013 | Jack London Boulevard in Livermore through the Isabel Avenue / Vallecitos Road intersection, Alameda County | Areas of potential cumulative impacts are Air Quality, Biological Resources, Hydrology and Water Quality, Energy Resources, and Transportation. |

NOTE:
[1] Construction schedules were estimated based upon information provided by local jurisdictions, websites, and publicly available project documents. Where project schedules could not be estimated, they have been labeled To Be Determined (TBD). The information provided is based on the most current data available as of February 2012. However, the construction schedules are estimates, and may vary due to revisions or delays.

**KEY:**
**Projects that are bolded are coincident or in close proximity (i.e., within 1000 feet) to a SJVCS Upgrade Project site.**
*Projects that are italicized have an estimated construction period that is known to overlap with construction the SJVCS project.*
***Projects that are bolded and italicized may have coincident construction schedules as well as co-located or immediately adjacent to a SJVCS Upgrade Project site.***

## References

Alameda County Transportation Improvements Authority (ACTIA), 2011. *Route 84 Expressway, ACTIA 24*, Monthly Report, (June 27, 2011).

California Department of Transportation (Caltrans), 2008. *State Route 84 Expressway Widening Project Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact*, (August 2008).

California Department of Transportation (DOT), 2012. *State Route 108 East Route Adoption Project,* Project Fact Sheet, (http://www.dot.ca.gov/dist10/environmental/projects/northcounty/) Accessed February 14, 2012.

CEQANet, 2012. Project Query, (www.ceqanet.ca.gov/QueryForm.asp) Accessed February 15, 2012.

City of Modesto, 2011. *City of Modesto Subdivision Status Report*, (September 21, 2011).

City of Modesto, 2012a. Parks, Recreation and Neighborhoods Projects, (http://www.modestogov.com/prnd/parks/planning/projects.asp). Accessed February 15, 2012.

City of Modesto, 2012b. Modesto Redevelopment Project Area Map, (http://www.modestorda.com/pdf/map_redevelopment-area.pdf). Accessed February 14, 2012.

City of Modesto, 2012c. Community and Economic Development, Kansas Woodland Business Park, (http://www.modestogov.com/ced/projects/bparks_kansas-woodland.asp) Accessed February 15, 2012.

City of Oakdale, 2011. *Pending, Approved and Valid Tentative Subdivision Maps for the City of Oakdale*, (October 10, 2011).

City of Riverbank, 2008. *Current Projects List*, *Residential Permits Issued* (2008).

Cotton Bridges Associates, 2003. Virginia Avenue Corridor Specific Plan, Initial Study. Draft Environmental Assessment, (http://www.modestogov.com/prnd/parks/planning/docs/Virginia_Draft.pdf) (October 2003).

Doscher, Rita, 2012. City of Riverbank Associate Planner, Telephone Conversation, (February 14, 2012).

Ford, Bob, 2012. Project Coordinator with the City of Modesto's Parks, and Neighborhood Department, Telephone Conversation, (February 16, 2012).

IEC, 2012. *IEC Completes Construction Management Support for MID Woodland Generation Station Unit 3 Project*, (http://www.iec-corporation.com/new/WGS3_2011.03.18.php) Accessed on March 12, 2012.

Modesto Community College (MCC), 2007. Facilities Master Plan, Volume 1, (http://www.yosemite.edu/bond/mjc/MJC%20Facilities%20Master%20Plan%20%20FINAL%2081308.pdf) (August 8, 2007).

MCC, 2012. Bi-Monthly Project Status Report, (http://www.yosemite.edu/bond/mjc/statusupdates/2012%20MJC%20February%20Bulletin%20120203.pdf) (February, 2012).

Paszkowski, Adam, 2012. Tuolumne County Planner, Telephone Conversation, (February 14, 2012).

San Francisco Public Utilities Commission (SFPUC), 2009. *Approval of Surface Mining Permit 30 Sunol Valley Quarry Lease*, Resolution No. 467-09, (June 22, 2009).

SFPUC (San Francisco Public Utilities Commission), 2012. Project List, (http://sfwater.org/bids/projectList.aspx?prj_type=1) Accessed on February 15, 2012.

San Francisco Planning Department (SFPD), 2011. *Final Environmental Impact Report for the San Francisco Public Utilities Commission Calaveras Dam Replacement Project*, San Francisco Planning Department File No. 2005.0161E, State Clearinghouse No. 2005102102, (Certified January 27, 2011).

Stanislaus County, 2011a. Recommended Final Capital Improvement Plan, Fiscal Year 2011-2012 (http://www.stancounty.com/capitalprojects/FY2011-2012/pdf/2011-2012%20Final%20CIP.pdf) (August 4, 2011).

Stanislaus County, 2011b. Stanislaus County Public Works: Roads to Success – Bridges to the Future (Fall 2011).

Tuolumne County Community Resource Agency, 2011. Proposed Residential Subdivisions in Tuolumne County, (July 8, 2011).

Wage, David, 2012. Associate Planner for the Cities of Oakdale and Modesto, Telephone Conversation, (February 15, 2012).

# APPENDIX B

Construction and Operation Equipment Estimates

# AQ Element #1 - Construction-Related Emissions

**SAN JOAQUIN VALLEY COMMUNICATION SYSTEM UPGRADE PROJECT**
**CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES - MOST INTENSIVE CONSTRUCTION ACTIVITY**

The following activities are anticipated to represent the range of tasks that will be conducted during construction (or equipment installation) at the project sites. Some communication sites will require a large number of the activities, while other sites will require only a few of the activities. Having these approximate descriptions of the work (inputs), the environmental review team can better determine what type(s) of air quality analysis is needed, and initiate that work (e.g., prepare emissions estimates per type of site, as required by CCSF Planning). Please insert needed data (i.e., please fill the blank fields below).

| Activity and Number of Personnel | Number of Workers | Average Number of Work Days Equipment will Operate[1] | Equipment and Quantity | Average Duration of Equipment Use (Hours/Day) | Fuel Type |
|---|---|---|---|---|---|
| **Construction-related equipment and hours** | | | | | |
| Survey/Site Walk | 2 | 0.5 | 1 Truck | 4 | Gas |
| Site Preparation (clearing leveling, grading, staking) | 4 | 2 | 2 Trucks | 4 | Gas |
| | | | 1 Backhoe | 8 | Diesel |
| | | | 1 Tractor | 8 | Diesel |
| Concrete Work | 4 | 4 | 1 Truck | 4 | Gas |
| | | | 1 Concrete Truck | 4 | Gas |
| | | | 1 Concrete Vibrator | 2 | Gas |
| Tower Foundation and Equipment Pad Construction | 3 | 2 | 1 Truck | 2 | Gas |
| | | | 1 Flatbed Truck | 4 | Diesel |
| Waveguide Bridge Install (if applicable) | 4 | 1 | 1 Truck | 4 | Gas |
| | | | 1 Crane | 6 | Diesel |
| | | | 1 Flatbed Truck | 4 | Diesel |
| Ground-Field Trenching | 3 | 1 | 1 Trencher or 1 Backhoe | 6 | Diesel |
| | | | 2 Trucks | 4 | Gas |
| Ground Field Installation | 3 | 2 | 2 Trucks | 4 | Gas |
| Radio Cabinet Installation | 3 | 2 | 2 Trucks | 4 | Gas |
| | | | 1 Flatbed Truck | 4 | Diesel |
| | | | 1 Tool Truck | 4 | Gas |
| | | | 1 Forklift | 4 | Diesel |
| PV/Generator System Installation* | 4 | 12 | 2 Trucks | 4 | Gas |
| | | | 1 Flatbed Truck | 4 | Diesel |
| | | | 1 Forklift | 4 | Diesel |
| | | | 1 Tool Truck | 4 | Gas |
| Standby Generator System Installation* | 4 | 12 | 2 Trucks<br>1 Flatbed Truck<br>1 Forklift<br>1 Tool Truck | 4<br>4<br>4<br>4 | Gas<br>Diesel<br>Diesel<br>Gas |
| Trenching for Radio Signal, and Power Conduits | 3 | 2 | 1 Truck | 4 | Gas |
| | | | 1 Trencher or 1 Backhoe | 8 | Diesel |
| | | | 1 Flatbed Truck | 6 | Diesel |

[1] This data entered by ESA (assumed to be extracted from reports produced by Goodman Networks).

**SAN JOAQUIN VALLEY COMMUNICATION SYSTEM UPGRADE PROJECT**
**CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES - MOST INTENSIVE CONSTRUCTION ACTIVITY**

The following activities are anticipated to represent the range of tasks that will be conducted during construction (or equipment installation) at the project sites. Some communication sites will require a large number of the activities, while other sites will require only a few of the activities. Having these approximate descriptions of the work (inputs), the environmental review team can better determine what type(s) of air quality analysis is needed, and initiate that work (e.g., prepare emissions estimates per type of site, as required by CCSF Planning). Please insert needed data (i.e., please fill the blank fields below).

| Activity and Number of Personnel | Number of Workers | Average Number of Work Days Equipment will Operate[1] | Equipment and Quantity | Average Duration of Equipment Use (Hours/Day) | Fuel Type |
|---|---|---|---|---|---|
| Tower Erection* | 5 | 4 | 2 Trucks | 4 | Gas |
| | | | 1 Forklift | 8 | Diesel |
| | | | 1 Flatbed Truck | 6 | Diesel |
| | | | 1 Crane | 8 | Diesel |
| Antenna, radio and DC power system installations (electrical) | 3 | 10 | 1 Truck | 4 | Gas |
| | | | 1 Tool Truck | 4 | Diesel |
| Commission and Testing | 2 | 3 | 2 Trucks | 4 | Gas |
| Number of Equipment Delivery/Haul Truck Trips (estimated average site) | 1 | Average number of daily one-way trips; average trip length | 1 Dump Truck | 6 | Diesel |

# AQ Element #2 - Operations-Related Emissions for Proposed Project

| Activity and Number of Personnel | Duration of Use (Hours/Day, Hours/Week, or Hours/Month) | Equipment and Quantity | | Fuel Type |
|---|---|---|---|---|
| Operations-related equipment and hours | | | | |
| Testing and Maintenance of Two Propane Fueled Generators | 0.5 hour every six months to test for proper functioning; and during acts of God (power outages), frequency and duration unknown | Emergency (backup) generators (2):<br><br>Mid-Point Repeater[1] - 8.5 kW<br>Transmission Tower 122N - 8.5 kW<br><br>Potential generator:<br>http://www.kohlerpower.com/onlinecatalog/pdf/g4097.pdf | 8.5 kW | Propane |

# APPENDIX C

Biological Resources

**APPENDIX C**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Reptiles** | | | | | |
| *Emys marmorata*<br>Western pond turtle | -- | CSC | -- | Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks. | **Low.** Potential to occur in ponds and rivers near the project; however, no suitable nesting habitat occurs at project sites. The seasonal stream and seasonal wetland present at the Tesla Treatment Facility Tower site do not support this species due to shallow water depth, lack of emergent or riparian vegetation, and lack of connectivity to other aquatic habitats. |
| ***Masticophis flagellum ruddocki***<br>**San Joaquin whipsnake** | **--** | **CSC** | **--** | Occurs in open, dry, vegetative associations with little or no tree cover. In the western San Joaquin Valley, it occurs in valley grassland and saltbush scrub associations. Probably dependent on mammals for burrows and prey. | **Moderate.** Three occurrences were recorded in the CNDDB from 1980 to 2000 within 5 miles of Tesla Treatment Facility Tower and Mt. Diablo SBA. Suitable grassland habitat occurs in in and adjacent to these sites. |
| *Masticophis lateralis euryxanthus*<br>Alameda whipsnake | FT | ST | -- | In chaparral – northern coastal sage scrub and coastal sage. Requires open areas for sunning. Habitat for this species is highly dependent upon periodic fire**.** | **Low.** Known from three occurrences, with the nearest occurrence 5 miles south of the Calaveras Substation site. Marginally suitable foraging and dispersal habitat is present in the vicinity of the site; however, the likelihood of occurrence is low due to disturbance resulting from the Alameda Siphons Project. |
| **Amphibians** | | | | | |
| ***Ambystoma californiense***<br>**California tiger salamander** | **FT** | **CSC** | **--** | Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources. | **Moderate**. Potential breeding habitat occurs within 1.5 miles of the project between the Oakdale Portal and Emery Crossover sites; as a result, CTS aestivation habitat may be present in work areas. CTS larvae have been observed in perennial ponds and vernal pools along the SJPL ROW near MP 53.21 and 57.21. The CNDDB also contains numerous records of CTS occurrences in the vicinity of the Calaveras substation, Mt. Diablo SBA, and Sunol Ridge ATC sites. |
| ***Rana boylii***<br>**Foothill yellow-legged frog** | **--** | **CSC** | **--** | Breeds in shaded stream habitats with rocky, cobble substrate, usually below 6,000 feet in elevation. Absent or infrequent when introduced predators are present. | **Moderate.** Known to occur and was observed near the Oakdale Portal site in 2006. An unnamed seasonal stream that flows through the project site may provide suitable habitat for this species. |
| ***Rana aurora draytonii***<br>**California red-legged frog** | **FT** | **CSC** | **--** | Breeds in slow moving streams with deep pools, ponds, and marshes with emergent vegetation. | **Moderate**. Numerous CNDDB occurrences were recorded within 5 miles of Tesla Portal, Mt. Diablo SBA, Sunol Ridge ATC, and Calaveras Substation. Suitable habitat also exists in a pond across Maze Road from the San Joaquin Valve House site. No red-legged frogs have been observed in the project area. |

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Amphibians (cont.)** | | | | | |
| ***Spea (=Scaphiopus) hammondii***<br>**Western spadefoot toad** | **--** | **CSC** | **--** | Occurs seasonally in grasslands, prairies, chaparral, and woodlands, in and around wet sites. Breeds in shallow, temporary pools formed by winter rains. Takes refuge in burrows. | **Moderate.** Several CNDDB occurrences were recorded within 5 miles of the project. Seasonal ponds, vernal pools, intermittent drainages, and seasonal wetlands near the Emery Crossover and Oakdale Portal sites provide suitable breeding habitat for this species. Suitable foraging and dispersal habitat occurs within annual grasslands at these sites; thus, the species is presumed present. |
| **Birds** | | | | | |
| ***Accipiter cooperii***<br>**Cooper's hawk** | **--** | **--** | **--** | Nests in riparian areas and oak woodlands, forages at woodland edges. | **Moderate.** Potential nesting and foraging habitat adjacent to the project area (at Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, and San Joaquin Valve House). The CNDDB record shows occurrences of Cooper's hawk in the vicinity of the Sunol Ridge ATC and Calaveras Substation sites. |
| ***Accipiter striatus***<br>**Sharp-shinned hawk** | **--** | **--** | **--** | Nests in riparian areas and oak woodlands, forages in open areas | **Moderate.** Potential nesting and foraging habitat adjacent to the project area (at Moccasin Peak, Red Mountain Bar, Rock River Lime Plant, Oakdale Portal, and San Joaquin Valve House). The CNDDB record shows one occurrence of sharp-shinned hawk south of the Calaveras Substation. |
| *Agelaius tricolor*<br>Tricolored blackbird | -- | CSC | -- | Nests in dense thickets of cattails, tules, willow, blackberry, wild rose, wheat and barley crops, and other tall herbs near fresh water. | **Low.** Riparian nesting habitat is present at the San Joaquin River near the San Joaquin Valve House and Pelican Cross Over project sites. CNDDB records also show occurrence of tricolor blackbird near the Calaveras Substation and the Warnerville Yard. However, no suitable nesting habitat is present near these sites. |
| *Aquila chrysaetos*<br>Golden eagle | -- | CFP | -- | Nests on cliffs of all heights and in large trees near open areas. Occurs in rolling foothills, mountain terrain, sage-juniper flats, and rugged open habitats with canyons and escarpments. Preys mostly on small mammals. Breeds late Jan-Aug. | **Low.** Potential foraging habitat (California annual grassland and blue oak woodland) present in or adjacent to project area. The CNDDB record shows occurrences east of the Mt. Diablo SBA site. |
| ***Athene cunicularia***<br>**Western burrowing owl** | **--** | **CSC** | **--** | Utilizes ground squirrel (or other mammal) burrows within open grasslands, prairies, savanna, or agricultural fields. | **Moderate.** Small mammal burrows provide potential nesting habitat along the western bank of the Modesto Irrigation District canal, at the Roselle Cross Over site. Additionally, a CNDDB occurrence was recorded just west of the project site in 1994. No burrowing owls or signs of burrowing owls were observed during the reconnaissance survey. |
| *Baelophus inornatus*<br>Oak titmouse | **--** | **--** | -- | Breeds in open pine-juniper and oak woodlands, often in riparian areas. | **Low.** Suitable breeding habitat in oak woodlands and riparian areas in the vicinity of the project; however, no suitable habitat within project sites. |

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Birds (cont.)** | | | | | |
| *Branta hutchinsii leucopareia*<br>Cackling (=Aleutian Canada) Goose | FD | -- | -- | Breeds in open or forested areas near water. Often found in wetlands, grasslands, or cultivated fields during migration. | **Low.** Suitable foraging habitat is present in annual grassland, agricultural land, and in the vicinity of the San Joaquin River near the San Joaquin Valve House and Pelican Cross Over project sites. No nesting habitat within project area. The CNDDB record indicates several occurrences along the San Joaquin River in the vicinity of the project. |
| *Buteo regalis*<br>Ferruginous hawk | -- | -- | -- | Wintering grounds consist of open grasslands. | **Low.** Species may forage in open grasslands in the vicinity of the project in the winter; however, nesting habitat is not present. One recorded CNDDB occurrence (2003) south of the Mt. Diablo SBA site. |
| ***Buteo swainsoni***<br>**Swainson's hawk** | **--** | **CT** | **--** | Breeds in California's Central Valley. Winters primarily in Mexico. Typically nests in scattered trees or along riparian systems adjacent to agricultural fields or pastures. Forages in open plains, grasslands, and prairies | **Moderate.** The CNDDB record indicates numerous occurrences near the San Joaquin River by the San Joaquin Valve House site. Suitable nesting habitat occurs within riparian habitat along the river. Suitable foraging habitat is present in the vicinity of the project. No raptor nests were observed within or adjacent to the project during the reconnaissance survey. |
| *Circus cyaneus*<br>Northern harrier | -- | CSC | -- | Nests in wet meadows and tall grasslands, forages in grasslands and marshes. | **Low.** Species may use grasslands and agricultural fields as foraging habitat. No suitable nesting habitat within project area. |
| *Coccyzus americanus occidentalis*<br>Western yellow-billed cuckoo | FC | CE | -- | Nests in extensive riparian forests (at least 40 hectares). | **Low**. Riparian habitat along the San Joaquin River may provide suitable habitat. No recent CNDDB records for this species. No suitable habitat within the project area. |
| *Dendroica petechia brewsteri*<br>*Yellow warbler* | -- | CSC | -- | Nests in dense riparian cover. Breeding distribution includes the coast ranges and western slopes of the Sierra Nevada. Rare to uncommon in lowland areas. | **Low.** Species may use riparian habitat adjacent to the San Joaquin River for nesting and foraging habitat. No suitable habitat within the project area. |
| ***Elanus leucurus***<br>**White-tailed kite** | **--** | **CFP** | **--** | Forages in open plains, grasslands, and prairies; typically nests in trees. Often found along tree-lined river valleys with adjacent open areas. | **Moderate.** Species is known to occur in the vicinity of the project and foraging has been observed within the SJPL ROW[1]. Forages in annual grassland habitat; however, suitable nesting sites are absent from the project area. |
| ***Eremophila alpestris actia***<br>***California horned lark*** | **--** | **--** | **--** | Short-grass prairie, "bald" hills, mountain meadows, opens coastal plains, fallow grain fields, alkali flats. Builds grass-lined nest; cup-shaped in depression on ground in the open. | **Moderate.** Species may forage in California annual grassland and agricultural fields adjacent to the project. Suitable nesting habitat occurs within project sites that support California annual grassland or is located immediately adjacent to annual grasslands. Several CNDDB occurrences were recorded in the vicinity of the Tesla Treatment Facility Tower site, as well as south of the Oakdale Portal and the Mt. Diablo SBA sites. |

[1] San Francisco Planning Department, 2010. San Joaquin Pipeline System Project Rehabilitation of Existing San Joaquin Pipelines Mitigated Negative Declaration. Prepared for SFPUC. August 4, 2010, amended November 2, 2010.

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Birds (cont.)** | | | | | |
| *Falco columbarius*<br>*Merlin* | -- | -- | -- | Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Clumps of trees or windbreaks are required for roosting in open country. Does not breed in California. | **Low.** No nesting habitat within project area. May use adjacent woodlands, grasslands, and windbreaks for foraging and roosting. |
| *Icteria virens*<br>*Yellow-breasted chat* | -- | CSC | -- | Requires riparian thickets near water. | **Low.** No suitable nesting habitat within the project. Species may use riparian habitat along the San Joaquin River (near the San Joaquin Valve House); however, habitat is absent from the project site. |
| *Lanius ludovicianus*<br>Loggerhead shrike | -- | CSC | -- | Nests in dense shrub or tree foliage, forages in scrub, open woodlands, grasslands, and croplands. | **Low.** No suitable nesting habitat within the project. Species may use riparian habitat along the San Joaquin River, in the vicinity of the San Joaquin Valve House site. |
| ***Pandion haliaetus***<br>**Osprey** | **--** | **WL** | **--** | Habitat varies greatly and usually includes adequate supply of accessible fish, shallow waters, open and elevated nest sites (10-60 feet in height), and artificial structures such as towers. Builds large platform stick nests near or in open waters such as lakes, estuaries, bays, reservoirs, and within the surf zone. | **Moderate.** Potential nesting habitat occurs along the banks of the San Joaquin River in the vicinity of San Joaquin Valve House site and in the vicinity of Don Pedro Reservoir near the Red Mountain Bar site; however, there is no suitable nesting habitat within the project area. |
| *Riparia riparia* (nesting)<br>Bank swallow | -- | CT | -- | Nests in holes dug in sandy cliffs and river banks near water. | **Low.** Potential nesting habitat along the banks of the San Joaquin River in the vicinity of the San Joaquin Valve House site. However, no suitable nesting habitat occurs within the project area. |
| *Xanthocephalus xanthocephalus*<br>Yellow-headed blackbird | **--** | **CSC** | **--** | Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Restricted distribution in Central Valley in winter, occurring mainly in the western portion. | **Low.** Potential nesting habitat occurs along the San Joaquin River and associated wetland habitat. No suitable nesting habitat within or immediately adjacent to the project. Species may forage over cropland in the vicinity of the project. |
| **Mammals** | | | | | |
| *Antrozous pallidus*<br>Pallid bat | -- | CSC | -- | Prefers caves, crevices, hollow trees, or buildings in areas adjacent to open space for foraging. Associated with lower elevations in California. | **Low.** Species commonly occur throughout California in lower elevations. Species may forage in the vicinity of the project; buildings within the project may provide limited suitable roosting habitat. |
| *Corynorhinus townsendii*<br>*Townsend's big-eared bat* | -- | CSC | -- | Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings of rocky areas with caves or tunnels. Roosting sites limited. Extremely sensitive to human disturbance. | **Low.** Preferred roosting habitat not present. May forage in California annual grassland, blue oak woodland, and wetland habitats in the vicinity of the project. Species is not expected to roost within the project area. |

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Mammals (cont.)** | | | | | |
| *Eumops perotis californicus*<br>*Western mastiff bat* | -- | CSC | -- | Isolated occurrences in northern California. Roosts primarily in crevices within cliffs and canyons, occasionally in buildings. Primarily feeds on moths. Maternity colonies active May through July. | **Low.** No preferred habitat within project area. May forage in California annual grassland, blue oak woodland, and wetland habitats adjacent to the project. |
| *Lasiurus blossevillii*<br>western red bat | -- | CSC | -- | Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. | **Low.** Suitable roosting habitat occurs in the vicinity of several project sites; no suitable roosting habitat within the project area. |
| *Lasiurus cinereus*<br>hoary bat | -- | -- | -- | Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths; requires water. | **Low.** Suitable roosting habitat occurs in the vicinity of several project sites; no suitable roosting habitat within the project area. |
| *Lasiurus xanthinus*<br>Western yellow bat | -- | CSC | -- | Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees. | **Low.** No suitable roosting habitat within the project. May forage in the vicinity of the San Joaquin Valve House site, within riparian habitat adjacent to the San Joaquin River. |
| *Myotis yumanensis*<br>Yuma myotis | -- | -- | -- | Often near reservoirs, optimal habitats are open forests and woodlands with water sources to feed over. Roosts in buildings, trees, mines, caves, bridges, and rock crevices. Maternity colonies active May through July. | **Low**. Suitable habitat occurs in the vicinity of the project at Don Pedro Reservoir; however, dense foliage for roosting habitat is not available in the project area. |
| *Neotoma fuscipes riparia*<br>Riparian (San Joaquin Valley) woodrat | FE | CSC | -- | Require suitable breeding sites such as cavities in trees, snags, or logs; spaces in talus; or lodges built of downed woody material. Such habitat is limited to riparian areas in San Joaquin County. | **Low.** Suitable habitat occurs in the vicinity of the project at the San Joaquin Valve House site; however, no suitable habitat within or immediately adjacent to the project site. |
| *Sylvilagus bachmani riparius*<br>Riparian brush rabbit | FE | CE | -- | Only in San Joaquin Valley native riparian areas with large clumps of dense shrubs, low growing vines, and some tall shrubs and scrubby trees. Has a very limited distribution. | **Low.** Suitable habitat is present within riparian habitat along the San Joaquin River in the vicinity of the San Joaquin Valve House site. However, there is no suitable habitat within the project area. |
| *Taxidea taxus*<br>American badger | -- | CSC | -- | Occurs in a wide variety of open forest, shrub, and grassland habitats that have friable soils for digging. | **Low.** Suitable habitat is present within annual grasslands in the vicinity of the project; however, no suitable habitat within most project sites. No mammal burrows were observed at project sites with annual grassland habitat (Transmission Tower 122N and Throttle Station 2). |

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Mammals (cont.)** | | | | | |
| *Vulpes macrotis mutica*<br>San Joaquin kit fox | FE | CT | -- | Uses annual grassland or grassy open stages with scattered shrubby vegetation, need loose-textured sandy soils for burrowing, and suitable prey base. | **Low.** Species has the potential to occur within annual grasslands in the vicinity of the project; several CNDDB occurrences were recorded within 5 miles of the project (at Tesla Treatment Facility Tower and Mt. Diablo SBA). However, the species was not observed during recent reconnaissance surveys. No dens were observed within or adjacent to the project. |
| **Invertebrates** | | | | | |
| *Branchinecta longiantenna*<br>Longhorn fairy shrimp | FE | -- | -- | Lifecycle restricted to vernal pools with clear to rather turbid water. | **Low.** Suitable habitat present in vernal pools in the vicinity of the project. No suitable habitat occurs within or immediately adjacent to the project. |
| *Branchinecta conservation*<br>Conservancy fairy shrimp | FE | -- | -- | Lifecycle restricted to large, cool-water vernal pools with moderately turbid water. | **Low.** Suitable habitat present in vernal pools in the vicinity of the project. No suitable habitat occurs within or immediately adjacent to the project. |
| *Branchinecta lynchi*<br>Vernal pool fairy shrimp | FT | -- | -- | Lifecycle restricted to vernal pools. | **Low.** Suitable habitat present in vernal pools in the vicinity of the project. No suitable habitat occurs within or immediately adjacent to the project. |
| *Branchinecta mesovallensis*<br>Midvalley fairy shrimp | -- | -- | -- | Lifecycle restricted to vernal pools in the Central Valley. | **Low.** Suitable habitat present in vernal pools in the vicinity of the project. No suitable habitat occurs within or immediately adjacent to the project. |
| *Lepidurus packardi*<br>Vernal pool tadpole shrimp | FE | -- | -- | Found in vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, or ditches. | **Low.** Suitable habitat adjacent to the project; no suitable habitat within the project area. |
| *Linderiella occidentalis*<br>California linderiella | -- | -- | -- | Lifecycle restricted to vernal pools. | **Low.** Suitable habitat adjacent to the project; no suitable habitat within the project area. |
| *Lytta moesta*<br>Moestan blister beetle | -- | -- | -- | Vernal pools and grasslands in the San Joaquin Valley. | **Low.** Suitable habitat adjacent to the project; no suitable habitat within the project area. |
| *Lytta molesta*<br>Molestan blister beetle | -- | -- | -- | Inhabits dry vernal pools in the Central Valley, from Contra Costa to Tulare Counties. | **Low.** Suitable habitat adjacent to the project; no suitable habitat within the project area. |

**APPENDIX C (Continued)**
**SPECIAL STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA**

| Scientific Name<br>Common Name | Federal Status | State Status | CNPS Listing | Habitat Description / Blooming Period | Potential to Occur in the Action Area |
|---|---|---|---|---|---|
| **Vascular Plants** | | | | | |
| *Atriplex depressa*<br>Brittlescale | -- | -- | 1B.2 | Chenopod scrub, valley and foothill grasslands, meadows and seeps / May – October. | **Low.** Suitable habitat occurs in California annual grassland, vernal pools, seasonal seep, seasonal wetland, and seasonal swale in the vicinity of the project. One population was identified on Mape's Ranch between MP 82.83 and MP 83.59 of the SJPL ROW; plants were growing in dry alkali scalds in grassland.[2] The species was not identified within the project area during previous botanical surveys and the recent reconnaissance surveys. |

NOTES:
The "Potential for Effect" category is defined as follows:

Unlikely: The project site and/or immediate area do not support suitable habitat for a particular species. Project site is outside of the species known range.
Low Potential: The project site and/or immediate area only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the Proposed Project Area.
Moderate Potential: The project site and/or immediate area provide suitable habitat for a particular species.
High Potential: The project site and/or immediate area provide ideal habitat conditions for a particular species.

Species that have medium or high potential to be impacted by the proposed project are shown in boldface type.

STATUS CODES:

**Federal**:
FE = Listed as "endangered" under the federal Endangered Species Act
FT = Listed as "threatened" under the federal Endangered Species Act
FSC = NOAA Fisheries designated "species of concern"
FPD = Proposed delisted
FD = Delisted

**State:**
CE = Listed as "endangered" under the California Endangered Species Act
CT = Listed as "threatened" under the California Endangered Species Act
CSC = California Department of Fish and Wildlife designated "species of special concern"
CFP = California Department of Fish and Wildlife designated "fully protected"
WL = California Department of Fish and Wildlife designated "watch list"

**CNPS:**
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which we need more information--a review list
List 4 = Plants of limited distribution--a watch list

SOURCE: USFWS (2012), CDFG (2012a), CNPS (2012).

[2] URS + ATS, 2008. San Joaquin Pipeline System Project Existing Conditions Report. Prepared for the SFPUC. June 2008.