Initial Study and Draft Mitigated Negative Declaration

Supporting an Incidental Take Permit and Streambed Alteration Agreement for the

PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project

Prepared for

California Department of Fish and Wildlife

February 2017

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Acronyms and Abbreviations

°F	degrees Fahrenheit
§	Section
µg/m^3	microgram(s) per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACFD	Alameda County Fire Department
ACM	asbestos-containing material
ACWD	Alameda County Water District
APE	area of potential effects
APM	Applicant-Proposed Measure
ATCM	Asbestos Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BGS	below ground surface
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater and Quality Association
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CDM&G	California Division of Mines and Geology
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CNDDB	California Natural Diversity Database
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Alameda County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRLF	California Red-legged Frog
CTS	California Tiger Salamander
CWA	Clean Water Act

dB	decibel
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EACCS	East Alameda County Conservation Strategy
EBRPD	East Bay Regional Park District
ENVIRON	Environ International Corporation
EPA	U.S. Environmental Protection Agency
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FPPA	Farmland Protection Policy Act
FR	Federal Register
GANDA	Garcia and Associates
GHG	greenhouse gas
H_2S	hydrogen sulfide
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbons
I-580	Interstate 580
I-680	Interstate 680
ITP	Incidental Take Permit
JSA	Jones and Stokes Associates
km	kilometer
L-107	Gas transmission pipeline 107
L-131	Gas transmission pipeline 131
LARPD	Livermore Area Recreation and Park District
LAVTA	Livermore Alameda Valley Transit Authority
lb	pound
lbs/day	pounds per day
LOS	level of service
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
mph	miles per hour
MRZ-2	Mineral Resource Zone 2
MRZ-3	Mineral Resource Zone 3
MTC	Metropolitan Transportation Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NHPA	National Historic Preservation Act
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos

NOAA	National Oceanic and Atmospheric Administration
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NSF	National Science Foundation
O&M	operation and maintenance
OHWP	ordinary high water mark
OHP	Office of Historic Preservation
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PIG	pipeline inspection gauge
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
ppm	part(s) per million
Project	PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project
PSD	Prevention of Significant Deterioration
ROG	reactive organic gases
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SF_6	sulfur hexafluoride
SFPUC	San Francisco Public Utilities Commission
SIP	State Implementation Plan
SMARA	California Surface Mining and Reclamation Act of 1975
SO_2	sulfur dioxide
SO_4	sulfates
SRP	Site Restoration Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
VRP	visibility-reducing particles
WGS	World Geodetic System
Williamson Act	California Land Conservation Act

1. Project Overview

The California Department of Fish and Wildlife (CDFW) is the lead agency under the California Environmental Quality Act (CEQA) for this pipeline retirement and valve replacement project because it is issuing an Incidental Take Permit (ITP) under Fish and Game Code (FGC) Section (§) 2081 and a Streambed Alteration Agreement (SAA) under FGC § 1600. The California Public Utilities Commission (CPUC) has exclusive discretionary jurisdiction over the design, construction, operation, and retirement of Pacific Gas and Electric Company's (PG&E's) natural gas pipelines. However, the CPUC does not require a discretionary permit for this type of project and thus does not have environmental review responsibility under CEQA. Although implementation of the project as defined by PG&E requires discretionary approvals from other public agencies (e.g., the Regional Water Quality Control Board), CDFW has determined it has the greatest responsibility for supervising or approving the project as a whole. Consequently, CDFW has determined that it is the appropriate CEQA lead agency pursuant to 14 C.C.R. section 15051.

PG&E proposes to retire (permanently remove from service) a 13-mile portion of gas transmission pipeline 107 (L-107) in Alameda County (County) from south of Livermore to the eastern border of Fremont, California. The pipeline runs through public and private lands and contains 58 locations where ground-disturbing activities would take place to either remove the pipeline or abandon it in place. A previously abandoned section of pipeline 131 (L-131) would also be removed from a property where a section of L-107 is being removed. In addition, valve repair and replacement work would occur at two locations on L-131 which runs parallel to L-107. The project area and its vicinity support suitable habitat for the federally- and state-listed California tiger salamander (CTS) (*Ambystoma californiense*) and the federally listed California red-legged frog (CRLF) (*Rana draytonii*) and potentially suitable habitat for Alameda whipsnake (AWS) *Masticophis lateralis euryxanthus*. The project has been designed to minimize potential effects on these species. Applicant-proposed measures (APMs) to minimize the potential to impact these species are discussed in Section 3.4.4.

The project has been designed to minimize impacts to sensitive environmental resources. Nonetheless, some temporary, and small amounts of permanent impacts are unavoidable. A total of 15.23 acres would be temporarily or permanently disturbed from excavations and other activities during the proposed project. Temporary impacts comprise 4.97 acres in previously disturbed areas and 10.12 acres in suitable CTS and CRLF upland habitat. Within 15 separate Work Areas, 0.064 acres of CDFW jurisdictional resources would be temporarily impacted; this includes impacts to 0.02 acres of streambed below the ordinary high water mark (OHWM), which are also USACE jurisdictional. All temporarily disturbed work areas would be restored to pre-project conditions to the extent practicable. A total of 0.14 acres would be permanently disturbed by proposed valve replacement on Line 131 at Vallecitos Road (Work Area 63), all of which is in suitable CTS and CRLF upland habitat.

Purpose

The L-107 retirement work is necessary to permanently remove 13 miles of PG&E's gas transmission line from service. The pipeline was installed in the 1930s and is at high risk of corrosion. Maintenance of the pipeline is difficult and costly because of the topography and irregular features inside the pipe in some areas.

L-131 runs parallel to L-107. Valve work on L-131 is necessary to meet PG&E's current utility standards and to return the line to its designed maximum allowable operating pressure (MAOP).

1.1 Location and General Information

The L-107 retirement segment is located in eastern Alameda County, California roughly between Livermore and Fremont. The retirement segment originates at the PG&E Livermore Junction station off of Mine Road in an unincorporated area of the County, approximately 1 mile south and east of Livermore. It extends to the southwest for approximately 13 miles to the PG&E Vargas Station about 0.75 miles northeast of Mission Boulevard and just west of Interstate 680 (I-680) in Fremont (Figure 1-1). The retirement segment is located in parts of the Altamont, Livermore, La Costa Valley, and Niles United States Geological Survey (USGS) 7.5-minute quadrangle maps. The starting location is at 37.657106 degrees north latitude and 121.732301 west longitude (and the end location is at 37.545044 degrees north latitude and 121.931473 west longitude based on World Geodetic System [WGS] 84 datum).

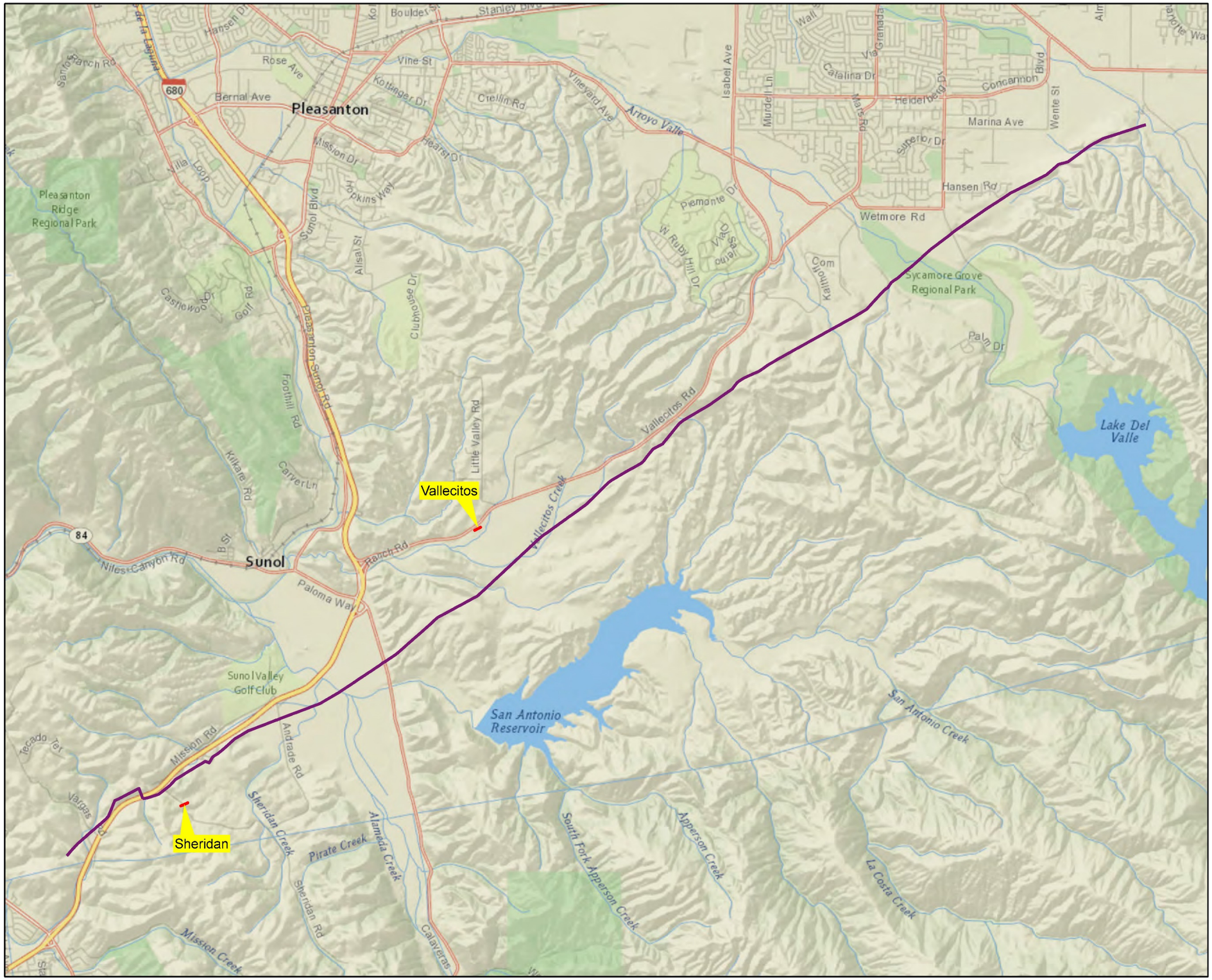
The valve replacement consists of two work areas. The first is within private property at 7820 Vallecitos Road (APN 096-0365-002-05) in the City of Sunol (Alameda County) within the La Costa Valley USGS 7.5-minute quadrangle map.

The second is within private property at 5100 Sheridan Road (APN 096-0001-002-12) in the City of Sunol (Alameda County) within the Niles USGS 7.5-minute quadrangle map.

General project information is provided in Table 1-1.

Table 1-1. General Project Information

Project Title	PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project
CEQA Lead Agency	California Department of Fish and Wildlife (CDFW) Serge Glushkoff, Senior Environmental Scientist Bay Delta Region 7329 Silverado Trail Napa, CA 94558
PG&E Contact Person	Mallory Hughes, Senior Land Planner
Project Location	County of Alameda, California
Project Sponsor	Pacific Gas and Electric Company Mallory Hughes, Senior Land Planner Environmental Management 6111 Bollinger Canyon Road San Ramon, CA 94583
Land Use and Zoning Designations	Alameda County Zoning: Various Alameda County Land Use: Parklands, Resource Management, Large Parcel Agriculture, Water Management City of Livermore Land Use: Open Space/Agriculture City of Fremont Land Use: Hillside Open Space



Legend

- PG&E Gas Line 107
- PG&E Gas Line 131
  Valve Replacement Locations

Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

0 N 5,000
Feet

FIGURE 1-1
Project Location
PG&E Gas Line107 Retirement and Line 131 Valve Replacement Project
Alameda County, CA

2. Project Description

2.1 Proposed L-107 Retirement Work Activities

The proposed retirement work consists of retiring (permanently removing from service) 13 miles of an existing PG&E 22-inch- and 24-inch-diameter natural gas pipeline that runs southwest from Mines Road in southern Livermore to a rural area approximately 0.7 mile east of Mission Boulevard in eastern Fremont. The entire 13-mile portion of the pipeline would be retired. Work would include cleaning the pipeline interior, removing all aboveground exposed pipeline spans, and leaving in place most underground portions of the line. No new pipeline, facilities, or structures would be developed.

As shown in Figures 2-1 through 2-13, there are approximately 58 Work Areas along the pipeline where work would be conducted. The 13-mile portion of L-107 to be retired runs both underground and aboveground. The underground portions would undergo a process whereby a 2- to 4-foot section of pipe would be cut and removed approximately every 3,200 feet or less. Depending on the depth, topography and condition of the pipe, the remaining pipe on either end would be filled with inert gas, sand, or cement slurry and then capped and abandoned in place.

Each numbered Work Area encompasses the excavation site and staging areas for soils, materials, and equipment. Vehicle access routes have also been defined, including necessary vehicle turn-around areas on overland routes. No new access roads would be constructed, although overland access roads would be mowed, as is necessary, to mitigate fire risk. Blading of access roads may also occur if needed; however, no grading or placement of gravel would occur on access roads. Throughout this document, the term "project area" refers to all of these work areas and access routes collectively. When information in this document pertains to a specific Work Area, the Work Area number will be noted; otherwise, discussion of the project refers to all Work Areas along the pipeline in general. Table 2-1 provides a list of the Work Areas and the type of work that would be performed.

All project activity would occur within PG&E's existing land rights for L-107 (see Appendix A), except for sites where temporary work areas and access routes from public roadways are required. Excavations and associated workspaces have been sited to avoid and/or minimize sensitive biological resources such as stream zones and wetlands.

Table 2-1. Proposed Work Areas and Activities

Work Area[1]	Proposed Activities
1	Bell hole excavation. Pipeline cleaning location. Cut pipe and cap end.
2-3	Removal of exposed pipe span that is above a stream channel. Cut pipe at both Work Areas and remove span, cap ends, and fill upstream section of pipe between 1 and 2 with inert gas. Remove a small tree and trim a portion of the adjacent tree canopy. Recontour stream banks to existing contour.
4-5	Removal of exposed pipe span. Cut pipe at both Work Areas and remove span, cap ends, and fill upstream section between 3 and 4 with inert gas.
6-7, 7A	Removal of exposed pipe span that is above the stream channel. Cut pipe at both Work Area sand remove span from 7 using a crane, cap ends, and fill pipe section between 5 and 6 with inert gas. Bell hole excavation to remove aboveground drip appurtenance at 7A.
8	Bell hole excavation. Cut pipe, cap both ends, and fill upstream section between 7 and 8 with inert gas. Remove aboveground drip appurtenance.
9-10	Bell hole excavations. Cut pipe at both Work Areas, slurry span between 9 and 10, and fill upstream section between 8 and 9 with inert gas
12-13	Bell hole excavations. Cut pipe at both Work Areas, slurry span between 12 and 13, and fill upstream section between 12 and 10 with inert gas.
14-15	Removal of exposed pipe span within stream channel. Cut pipe at both Work Areas and remove span, cap ends, and fill pipe section between 13 and 14 with inert gas.

Table 2-1. Proposed Work Areas and Activities

Work Area[1]	Proposed Activities
16-17	Bell hole excavations. Cut pipe at both Work Areas, slurry span between 16 and 17, and fill upstream section between 15 and 16 with inert gas.
17A	Bell hole excavation to remove aboveground drip appurtenance.
18	Bell hole excavations. Cut pipe, cap both ends, and fill upstream section between 17 and 18 with inert gas.
19A, 19	Bell hole excavations. Cut pipe at 19, slurry span from 19, and fill upstream section between 18 and 19 with inert gas. Remove aboveground drip appurtenance at 19A by hand.
20A	Bell hole excavation to remove aboveground drip appurtenance.
21-22	Removal of exposed pipe span within swale. Cut pipe at both Work Areas and remove span, cap ends, and fill pipe section between 20 and 21 with inert gas.
23	Bell hole excavations. Cut pipe, cap both ends, and fill upstream section between 22 and 23 with inert gas.
24-25	Removal of exposed pipe span above swale. Cut pipe at both sites and remove span, cap ends, and fill pipe section between 23 and 24 with inert gas.
26-27	Removal of exposed pipe span above swale. Cut pipe at both Work Areas, remove span, cap ends, and fill pipe section between 25 and 26 with inert gas. Expose pipe saddle footing in channel, cut pole below grade, fill pole void with concrete, and restore ground above the footing.
28-29, 29A	Removal of exposed pipe span within swale. Cut pipe at both Work Areas, remove span, cap ends, and fill pipe section between 27 and 28 with inert gas. Bell hole excavation to remove aboveground drip appurtenance at 29A.
30	Bell hole excavations. Cut pipe, cap both ends, and fill upstream section between 29 and 30 with inert gas.
31-32	Excavate trench and remove exposed and buried pipe within channel. Cut pipe at both Work Areas, remove buried section, cap ends, and fill pipe section between 30 and 31 with inert gas. Site 31 is a staging area.
33	Bell hole excavation. Cut pipe and fill upstream of 33 with inert gas.
35-36	Bell hole excavations. Cut pipe at both Work Areas, slurry span, and fill upstream section between 33 and 35 with inert gas.
36A	Bell hole excavation to remove aboveground drip appurtenance.
37	Bell hole excavation. Cut pipe at 38, fill upstream section between 36 and 37 with inert gas, and fill downstream section between 37 and 38 with slurry.
37A*	Bell hole excavation to remove aboveground drip appurtenances within stream channel. Remove aboveground pipe feature from wetland. Recontour topography.
38*	Bell hole excavation. Cut pipe and slurry upstream section between 37a and 38.
39*	Bell hole excavation. Cut pipe, cap both ends, and slurry upstream section between 38 and 39.
40*	Bell hole excavation. Cut pipe, cap both ends, and slurry upstream section between 39 and 40.
41*	Bell hole excavations. Cut pipe at both Work Areas and slurry upstream section between 40 and 41.
43-44*	Excavated trench, remove buried pipe. Cut pipe at both Work Areas and remove buried section, cap ends, and slurry upstream section between 41 and 43. Proposed removal is to accommodate the SFPUC's upcoming Alameda Creek Recapture Project.
46-47	Excavated trench and remove buried L-107 pipe section and a previously abandoned section of L-131. Slurry upstream section between 44 and 46.
47-48	Bell hole excavations. Cut pipe, slurry span between 47 and 48, and cap ends.

Table 2-1. Proposed Work Areas and Activities

Work Area[1]	Proposed Activities
50-51	Bell hole excavations. Pipeline cleaning locations. Cut pipe, slurry span between 50 and 51, cap ends, and fill upstream section between 48 and 50 with inert gas.
53	Bell hole excavation. Cut pipe, slurry span upstream, cap end, and fill upstream section between 51 and 53 with inert gas.
54-55	Bell hole excavation. Cut pipe at 54, install vent at 55, and slurry span and pipeline carrier casing between 54 and 55.
57	Bell hole excavation. Cut pipe, cap ends, slurry span downstream from 57, and fill upstream of section between 55 and 57 with inert gas.
59	Bell hole excavation. Pipeline cleaning location. Cut pipe, cap end, and fill upstream section between 58 and 59 with inert gas.
60*	Bell hole excavation. Deactivation of a DFM (distribution feeder main) line that would become obsolete with the retirement of L-107.
61	Staging area for use throughout the L107 retirement activities
62	L131 Sheridan Road valve replacement Work Area.
63	L131 Vallecitos Road valve replacement Work Area.
A	Turn around area on access road south of Work Areas 28 and 29-29A
B	Turn around area on access road south of Work Areas 28 and 29-29A
C	Turn around area on access road between Work Areas 29-29A and 30
D	Turn around area on access road between Work Areas 29-29A and 30
E	Turn around area on access road east of Work Area 30
F	Turn around area on access road south of Work Areas 37A and 38
G	Turn around area on access road south of Work Area 39
H	Turn around area on access road between Work Areas 40 and 41
I	Turn around area on access road east of Work Area 41
J	Turn around area on access road south of Work Area 50

Note:

[1] The retirement scope originally involved 60 work areas but has been reduced to approximately 58, as well as a long-term staging area (Work Area 61). The original numbering for each location has been retained and several locations have been added. While this table references locations above 58, there are now only 58 total planned retirement work areas. Several locations have combined work areas and are, therefore, listed together. Plans for these work areas may undergo further minor refinements due to final design, ground conditions, and other factors, but the impact analysis is not anticipated to change with minor adjustments to the work plans.

* Denotes Work Areas on San Francisco Public Utilities Commission lands.

2.1.1 Potholing and Excavation

In some areas, the underground portions of the gas pipeline would be located using potholing. Potholing is a technique that involves the use of high-pressure water from a truck to break apart the soil while a vacuum removes the water/soil mix to expose the top of the pipeline. Potholing would be limited to the predefined work areas shown on Figures 2-1 through 2-13.

2.1.2 Pipeline Cleaning

Pipeline cleaning may be necessary if mercury is present within the pipeline. Based on pipeline diameter variations, the L-107 pipe would be sectioned into three cleaning segments: Work Areas1 to 50 (22-inch pipe), Work Areas50 to 51 (24-inch pipe), and Work Areas51 to 59 (22-inch pipe). Typically, the following procedures would be followed: Pipeline inspection gauge (PIG) launchers and receivers would be temporarily installed on each end of the three cleaning segments to place PIGs and liquids (water or cleaning fluids) within the pipeline. Air compressors staged at both the launching and receiving ends of each cleaning section would propel the PIGs and liquids through the pipeline. The lead PIG would be equipped with a tracking device, so the speed and location of the PIGs can be monitored at all times.

Two fluid storage tanks would be temporarily stored at each cleaning site and connect to PIG receivers with 2- to 6-inch diameter welded piping and steel-braided flexible hose placed aboveground. Upon completion of each PIG run, the PIGs and liquids would be removed from the pipeline. The liquids would be collected in designated storage tanks and sampled to determine appropriate disposal. Both the PIGs and water would be disposed of in accordance with all environmental regulations. Spill containment equipment, including a vacuum truck, sand bags, straw wattle, straw bales, plastic sheeting, rubber mats, and filter mats would be available at each cleaning location during the pipeline-cleaning process.

The number of cleaning runs necessary would depend upon the existing levels of mercury in the pipeline, if any. Cleaning would proceed following the sequence of PIG runs outlined below. Each of the runs would be repeated until the pipeline has been cleaned.

2.1.3 Underground Segment Retirement

Sections of L-107 would be excavated at intervals of up to 3,200 feet, except in a few locations where longer intervals are used to avoid disturbance to sensitive habitat during excavation and segment removal. At most locations where the pipeline is buried, a 10-foot-long by 10-foot-wide excavation would be made and a 2-foot-long to 4-foot-wide section of pipeline would be cut and removed. Each exposed end of the remaining pipeline would be filled with slurry, sand, or inert gas and then sealed by welding it closed with a steel plate. A few segments of buried pipeline would require excavation of up to approximately 1,100-foot-long trenches to remove the entire length of pipe.

Pipe sections would be separated with the use of a truck-mounted arc welding rig. Backhoes, excavators, pipelayers, and boom trucks would be used to support and remove separated sections of pipe. A crane may be required at some Work Areas where an exposed span crosses a steep channel. Water trucks would be used for dust suppression, as needed, during all project activities.

The disposal method for the removed pipeline sections would be determined according to contamination test sample results. Decontaminated pipe and pipe with undetectable levels of contaminants might be recycled into scrap metal, disposed of as trash, or sold. Disposal of pipe deemed hazardous waste would be handled through the local PG&E environmental field specialist and in accordance with all applicable state and federal regulations. The environmental field specialist would also manage the disposal of liquids.

Slurry would be used to fill retired pipe sections located beneath California Department of Transportation (Caltrans) roadways to prevent settling that could impact roadway safety. Cellular concrete slurry would be used beneath other roadways and waterways to prevent settling that would interfere with waterway geomorphology. Inert gas would be used at all other Work Areas. Equipment for filling abandoned sections would include cement mixer trucks and grout pumps.

2.1.4 Aboveground Segment Retirement

All aboveground pipeline spans and pipeline appurtenances along the 13-mile retirement segment would be removed. The L-107 pipeline is exposed at nine locations and eight appurtenances associated with the pipeline drip system are exposed. Work would require excavation into stream channels or swales at 15 locations All other exposed pipeline spans and appurtenances would be removed from upland areas.

The soil would be excavated by hand immediately around the exposed pipe to allow the span to be separated below grade. An excavator would be used to further excavate around the pipe.

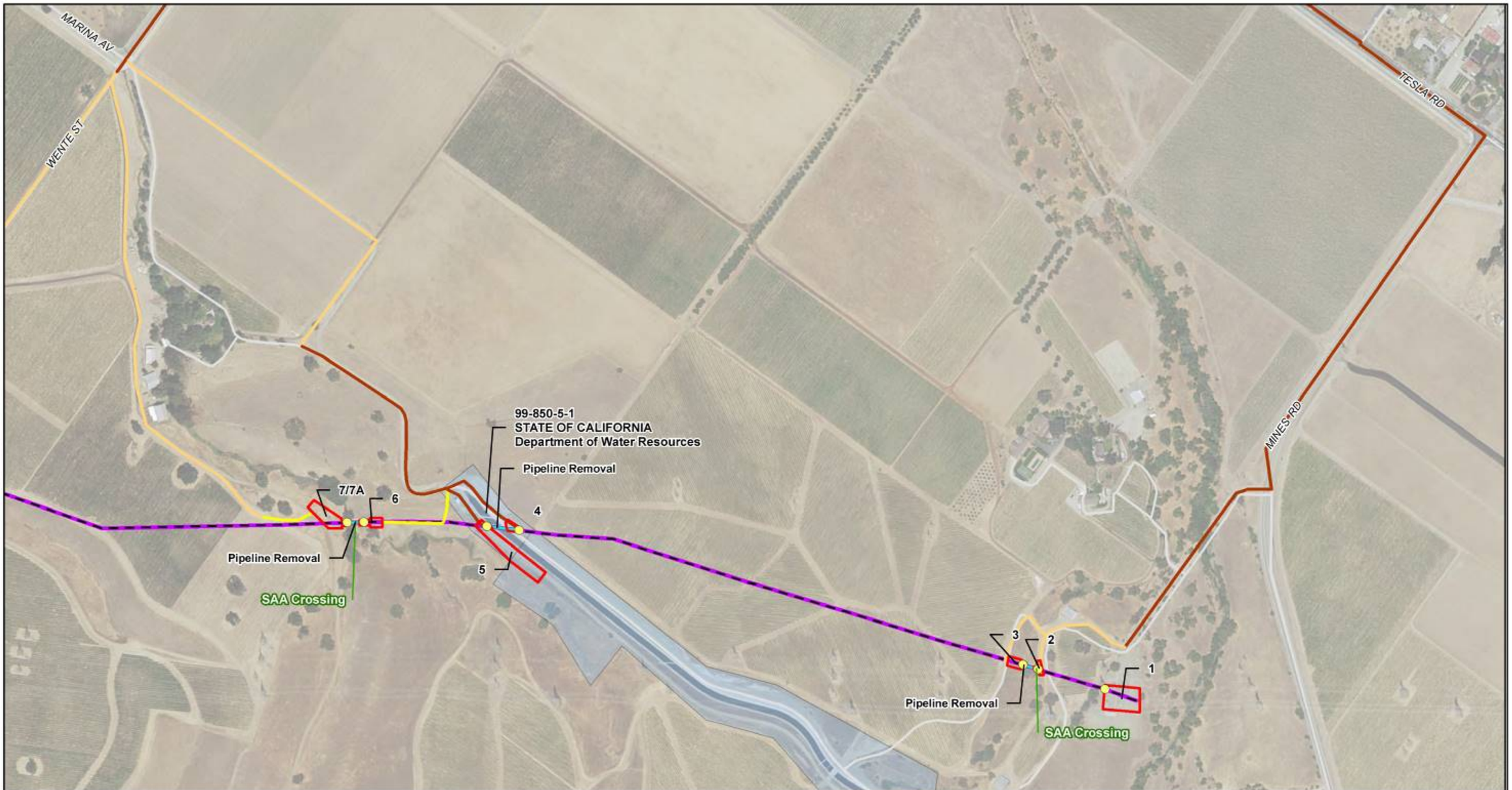
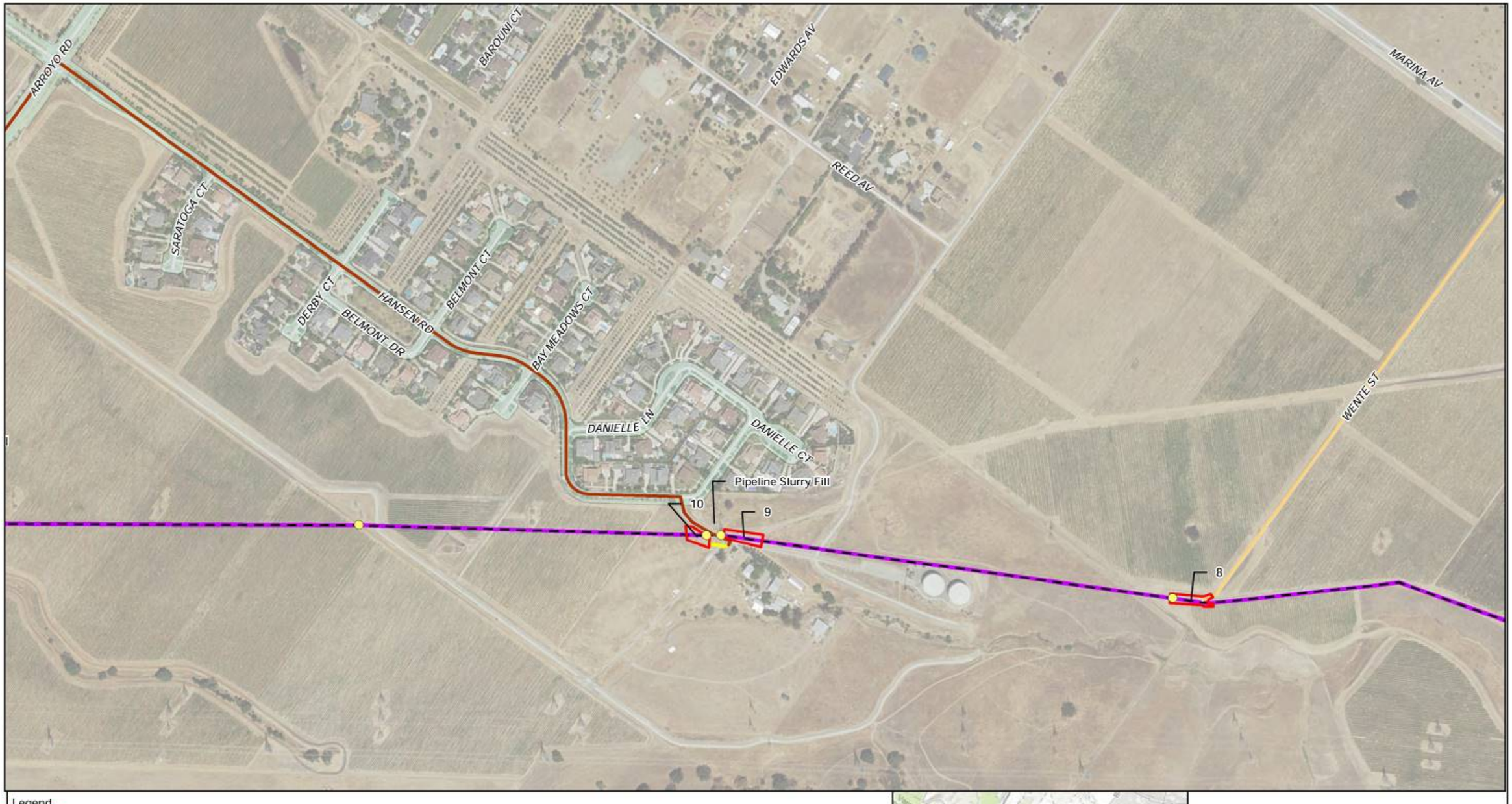


FIGURE 2-1
MAP 1 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project
Alameda County. CA



Legend

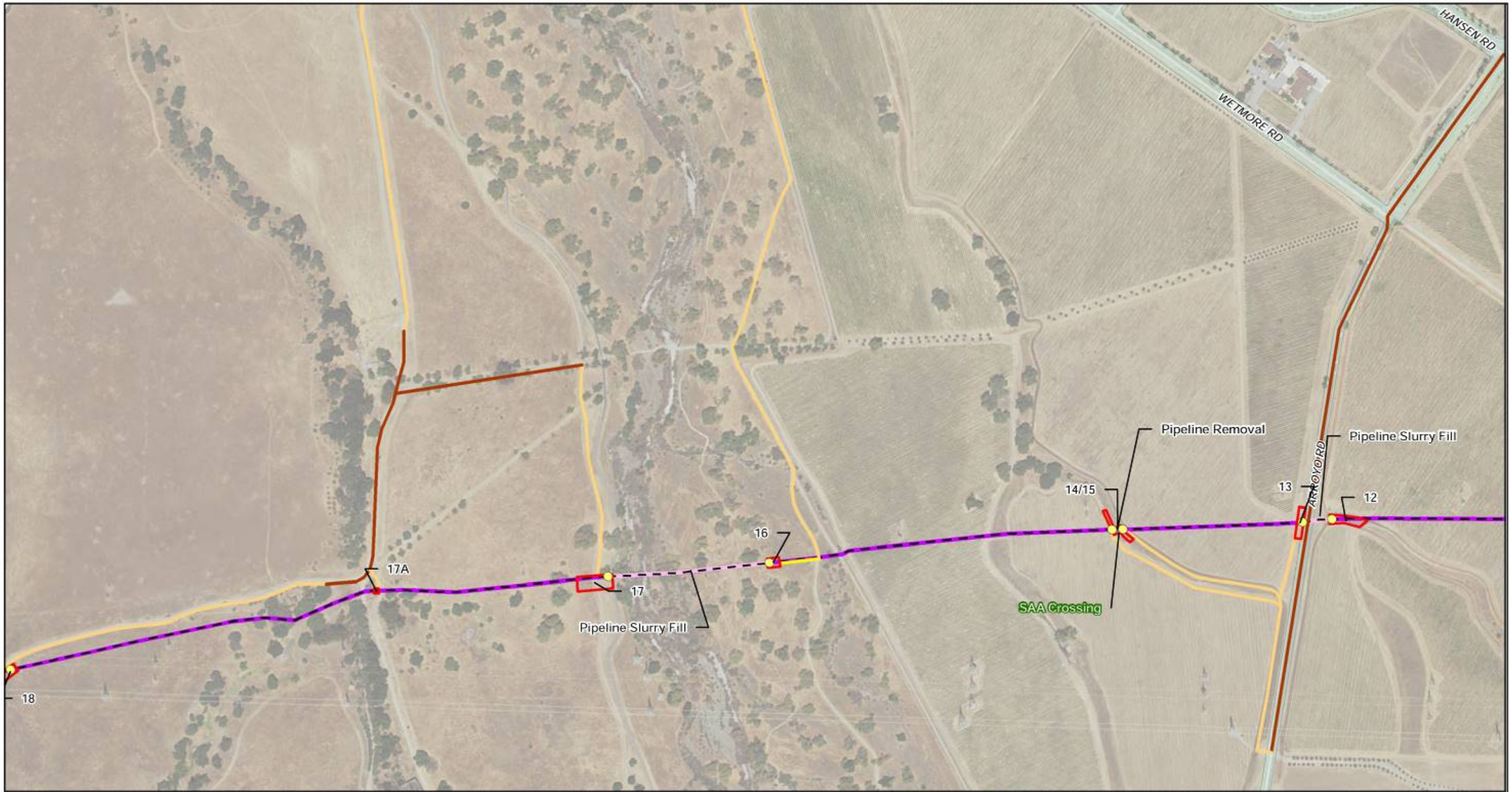
- Work Areas
- Cut and Cap Locations
- PG&E Gas Line 107
- Deactivate in Place
- Slurry Location
- Dirt Road
- Overland
- Paved
- Road
- CALTRANS Right of Way

N

0 400

Feet

FIGURE 2-1
MAP 2 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA



Legend

- Work Areas
- Cut and Cap Locations
- PG&E Gas Line 107
- Deactivate in Place
- Slurry Location
- PG&E Gas Line 107 (To be Removed)
- Dirt Road
- Overland
- Paved
- Road
- CALTRANS Right of Way

N

0 400

Feet

FIGURE 2-1
MAP 3 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

FIGURE 2-1
MAP 4 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project
Alameda County, CA

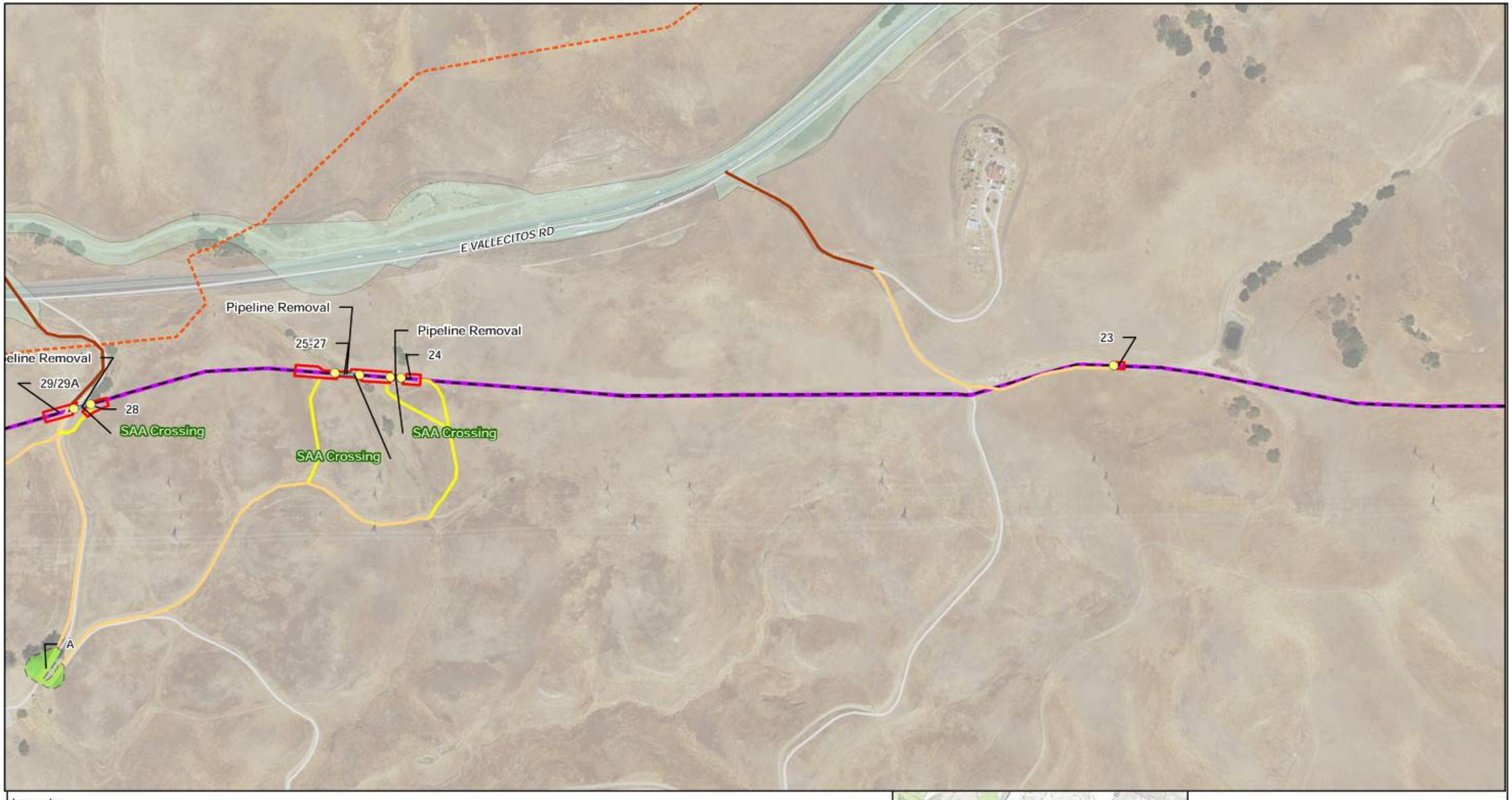


FIGURE 2-1
MAP 5 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

FIGURE 2-1
MAP 6 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project
Alameda County, CA

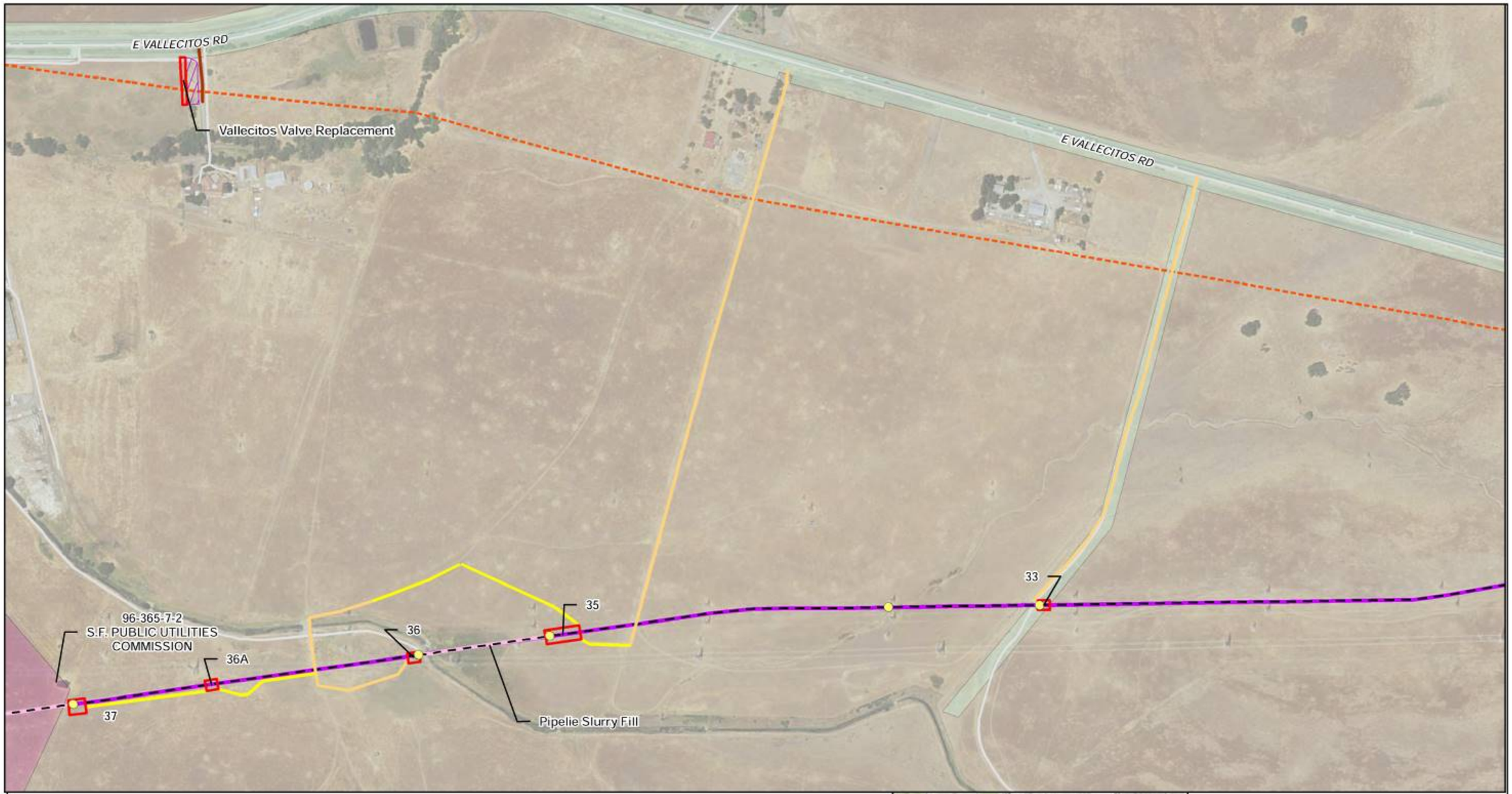


FIGURE 2-1
MAP 7 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

Legend

- Work Areas
- Turn Around Area
- Cut and Cap Locations
- Deactivate in Place
- Slurry Location
- Dirt Road
- Road
- Parcel owned by S.F. Public Utilities Commission

N

0 400

Feet

FIGURE 2-1
MAP 8 of 13
Project Work Areas
PG&E Gas Line 107 Retirement
and Line 131 Valve Replacement Project
Alameda County, CA

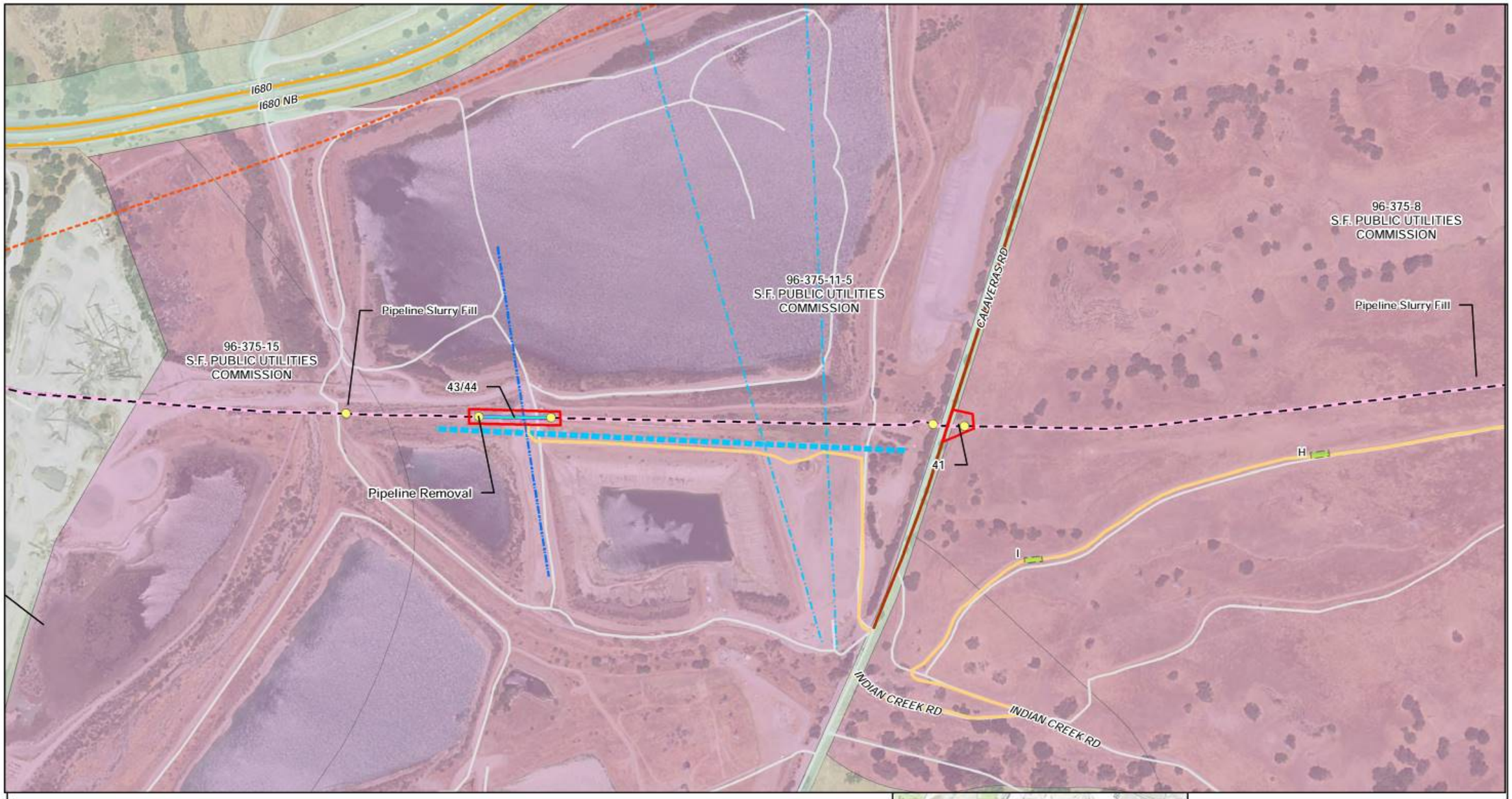


FIGURE 2-1
MAP 9 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

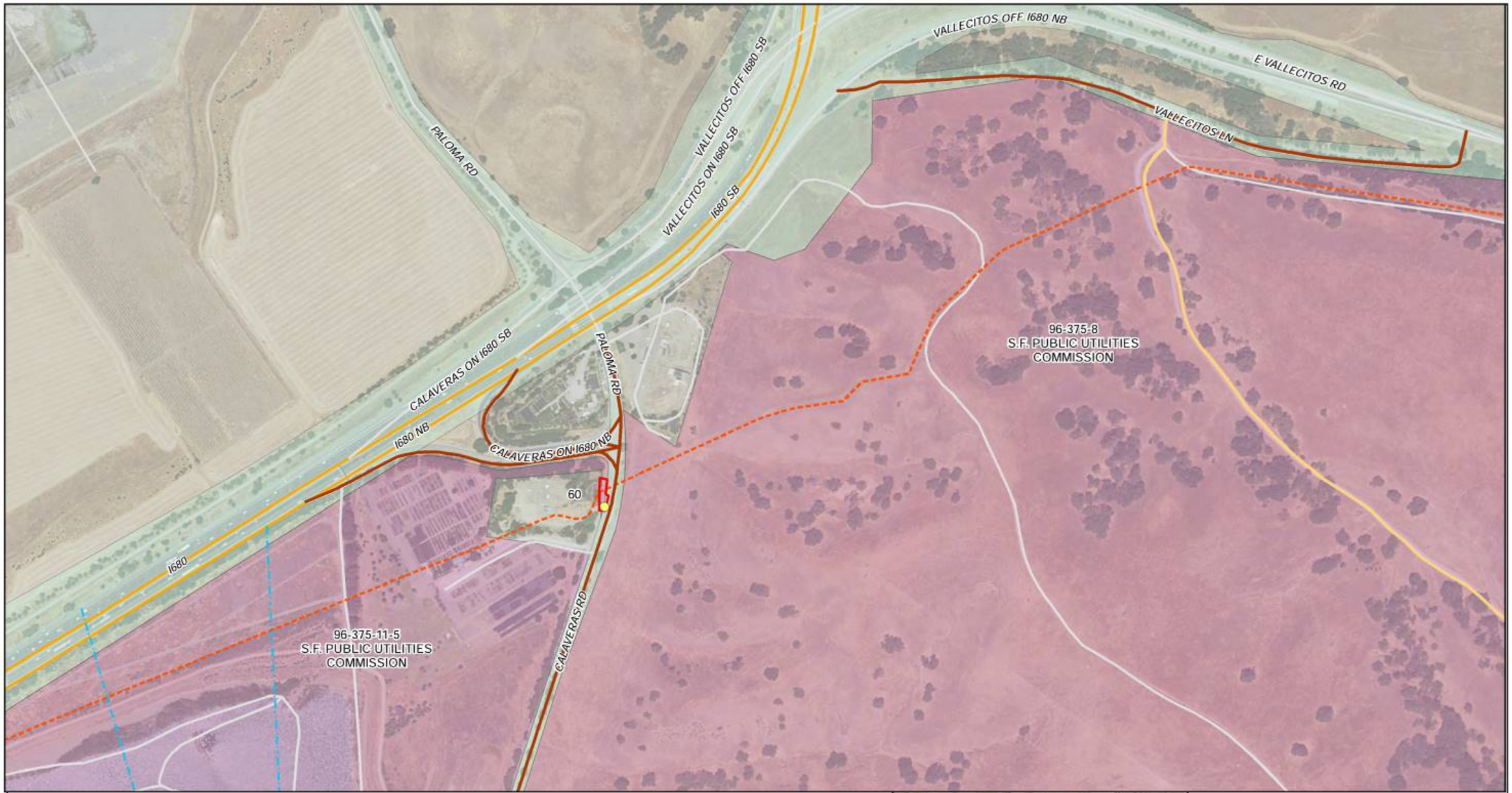


FIGURE 2-1
MAP 10 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

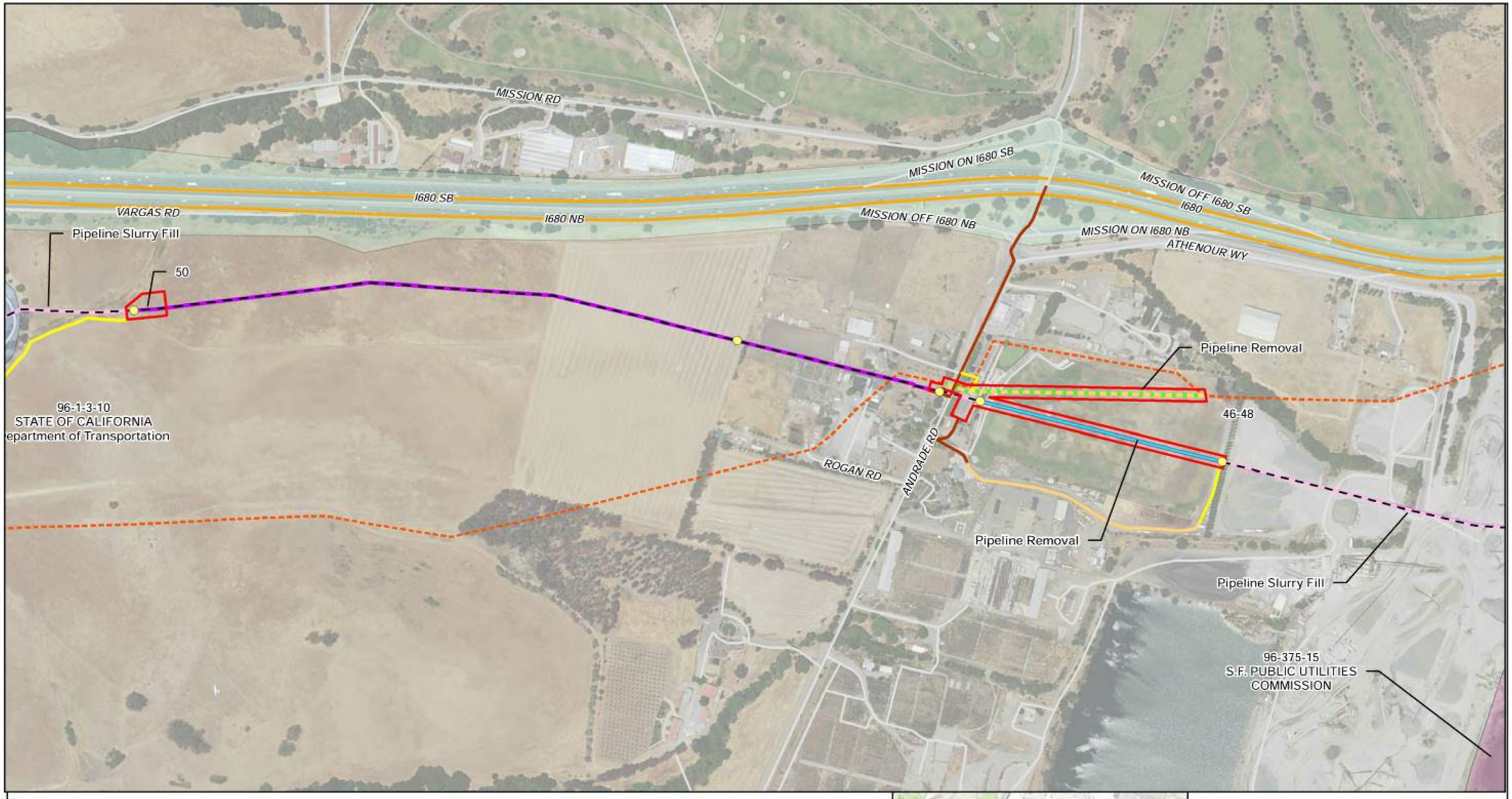


FIGURE 2-1
MAP 11 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA

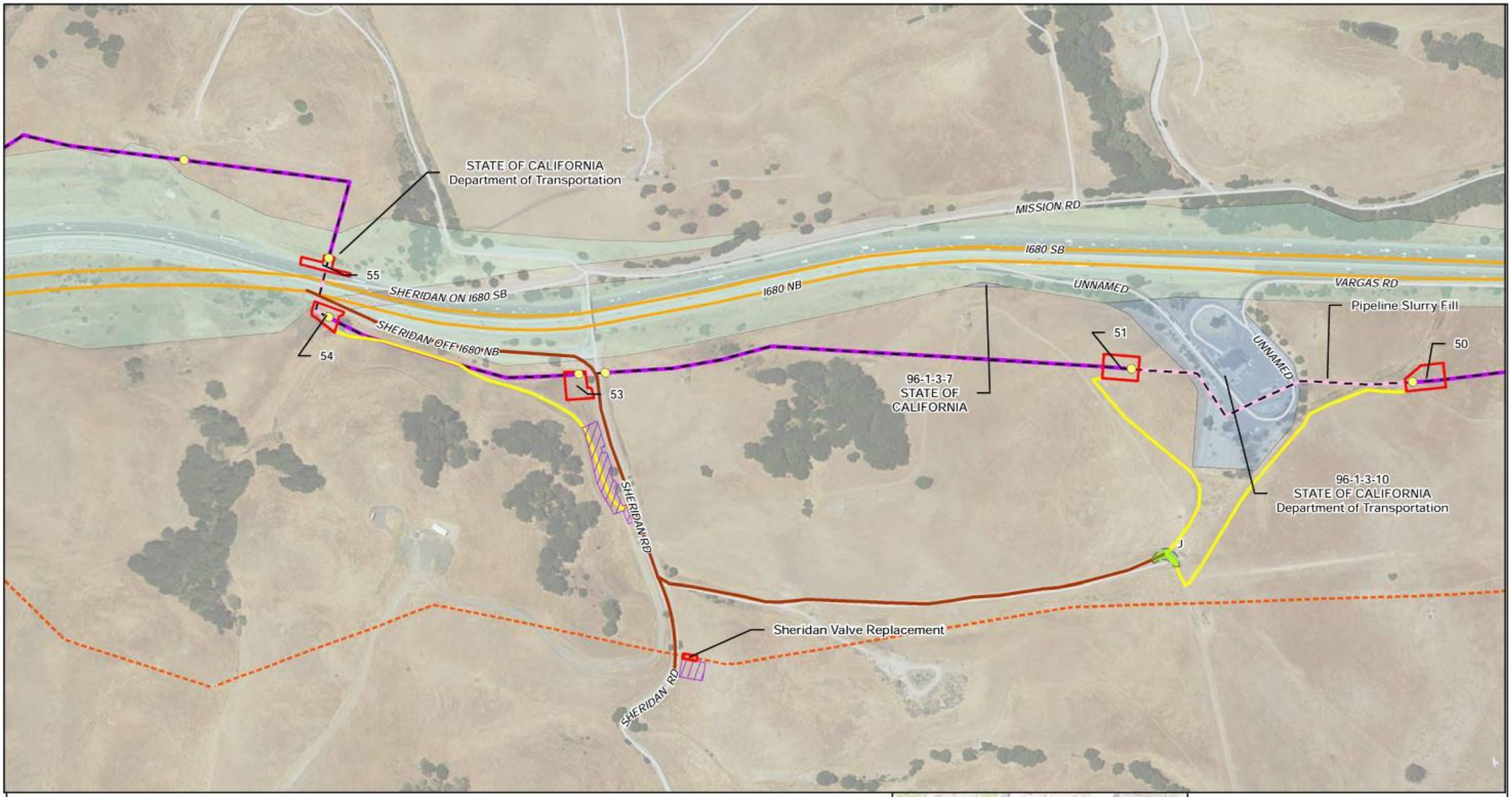
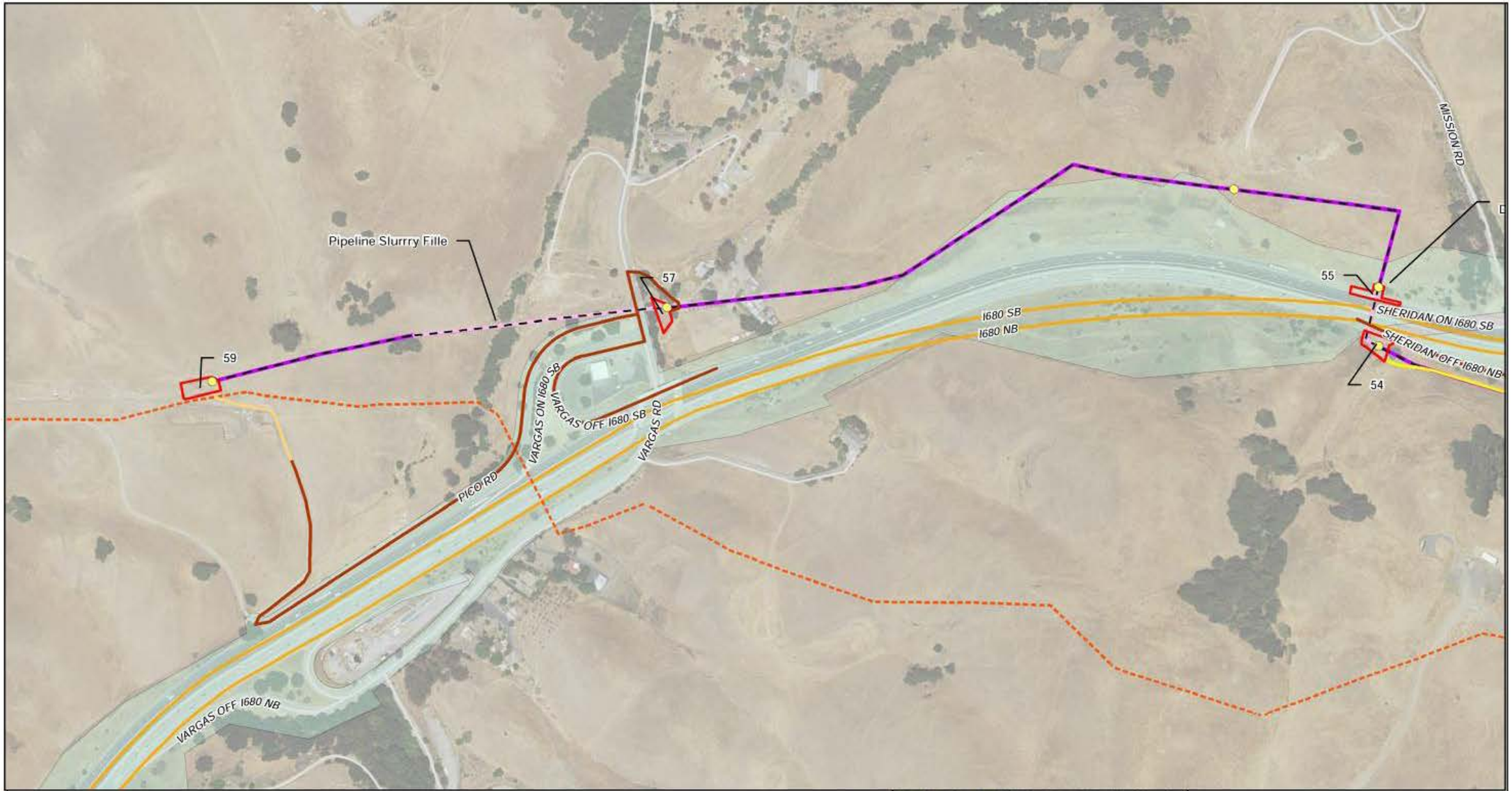


FIGURE 2-1
MAP 12 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County, CA



Legend

- Work Areas
- Cut and Cap Locations
- PG&E Gas Line 107
- Deactivate in Place
- Slurry Location
- PG&E Gas Line 131
- Dirt Road
- Overland
- Paved
- Highway
- Road
- CALTRANS Right of Way

N

0 400

Feet

FIGURE 2-1
MAP 13 of 13
Project Work Areas
PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project Alameda County. CA

2.2 Proposed L-131 Valve Replacement Work Activities

The proposed valve replacement consists of work at two locations on private property at 7820 Vallecitos Road (Work Area 63) and 5100 Sheridan Road (Work Area 62) in Sunol.

2.2.1 Vallecitos Road Location (Work Area 63)

At the Vallecitos Road work area, an approximately 150-foot-long by 8-foot-wide excavation that is 6 feet deep would be necessary to relocate two aboveground distribution regulators, install one new fire valve underground, and install approximately 55 feet of new 0.75-inch diameter steel piping underground approximately 2 feet to the west of the existing gas service line. Each distribution regulator would be approximately 4 feet wide and 3.5 feet tall. Four protective posts, similar to the posts surrounding the current deregulator stations, would be installed. They would be approximately 4 inches in diameter and 4 feet in height and would be placed at each corner of the distribution regulators in order to protect the regulators.

Once the regulators, fire valve, and piping are installed, the piping would be hydrotested as described below.

The existing 0.75-inch diameter piping and associated distribution regulators would be deactivated and retired in place as part of this project. This existing service line would be cut and capped at either end in order to isolate that stretch of service line from the rest of the pipeline and would be filled with inert gas or a slurry mixture.

Access to this location would be via an existing private graveled driveway off of Vallecitos Road.

All work would be contained within PG&E's existing right-of-way (ROW). No tree removal or trimming would be required.

2.2.2 Sheridan Road Location (Work Area 62)

At the Sheridan Road work area, an approximately 8-foot-long by 8-foot-wide excavation that is 6 feet deep would be necessary to replace in place a 0.5-inch tap underground fire valve. Access to this location would be via Sheridan Road.

All work would be contained within PG&E's existing ROW. No tree removal or trimming would be required.

Compressed Natural Gas

Gas would be vented from L-131 at each valve replacement work area prior to work on the pipeline taking place. Compressed natural gas (CNG) stored in bottles would be staged at both the Vallecitos Road and Sheridan Road valve replacement locations in order to backfeed customers in the area while the valve replacement is taking place. At the Vallecitos Road work area, CNG would be staged within the existing gravel driveway. At the Sheridan Road work area, CNG would be staged within the proposed work area.

Hydrostatic Testing

Hydrostatic testing, the industry standard for testing gas pipelines and pressure valves, is a method of verifying the maximum operating pressure and ensuring the integrity of a pipeline. The new service piping that would be installed at the Vallecitos Road work area would be hydrotested to verify that it is safe to operate at its designed maximum operating pressure. No hydrotesting activities will take place at the Sheridan Road work area because no new service piping will be installed at this location. The following sections describe the hydrostatic testing process and the potential effects associated with each step in the process.

Pipe Preparation

Water would be used to test the existing pipeline. Test water would be brought in by truck from an offsite location. Hydrostatic test water would be potable, chlorinated water sourced from a hydrant or other municipal water source. Water would be stored in a water storage tank to be brought onsite and staged in the work area.

Perform Hydrostatic Test

Once the pipeline is filled to the appropriate level and is ready for testing, the water would be slowly pressurized to a level above the maximum operating pressure of the gas pipeline. At the end of the test, the pipeline would be emptied of water (or "dewatered").

Dewater

Water from the hydrotest would be tested and discharged directly into a sanitary sewer or temporarily held in storage tanks and then trucked offsite to a sanitary sewer discharge location.

Dry

Once the pipe is emptied of water, it is dried thoroughly with compressed air or a drying device. Following the successful hydrotest, connections to adjacent gas pipelines, taps, and regulators would be reconnected and the pipeline would be put back into service.

2.3 Work Area Restoration

Following completion of the project, all project-related material would be removed from work areas and debris would be taken to permitted landfills for disposal or reused in backfill, as appropriate. The excavations would be backfilled and compacted and all temporary work areas would be restored to pre-existing conditions. Only native plant species would be used in reseeding and the work areas would be restored prior to the onset of fall rains, but other seed mixes may be used in developed areas approved by CDFW. Additional information on restoration is presented in Section 3.4.

2.4 Schedule

The first phase of work would occur as early as Spring 2017 for replacement of the L-131 valves. All work for the second phase, the L-107 retirements scope, is estimated to begin on April 15, 2017. Valve repair restoration would be completed in 2017, following valve construction. Demobilization and restoration activities for the retirement work are expected to be complete by October 15, 2017. Crews typically would work from approximately 7:00 a.m. to 5:30 p.m., Monday through Saturday. These dates and times are subject to change, pending issuance of project permits and agency authorizations.

2.5 Construction Management and Equipment

Equipment expected to be used is described in Table 2-2. Over the course of the project, there will be approximately 84 workers participating in project activities.

Table 2-2. Equipment to Be Used During Project Construction

Light Duty Trucks/Cars	Compressors
Pickup Trucks/Crew Trucks	Backhoe
Heavy Duty >1 Ton Truck	Sand Blaster
10-Wheel Dump	Smooth Drum Roller
Tractor/Trailer	Vacuum Excavation Trucks
Water Truck	Dewatering Pumps
Excavator	Skid Steer Loader
Grader	Slurry Pump Truck and Trailer
Loader	Cement Mixer Trucks
Bulldozer	Nitrogen Tanker Trucks
Hydraulic Crane	Generators
Dump Truck	Water Storage Tanks
Boom Truck	Welding Rigs

2.6 Applicant-proposed Measures

To avoid and minimize potential impacts to environmental resources, PG&E would implement APMs before, during, and after project construction. These would also include PG&E best management practices (BMPs) and the requirements of applicable agency work authorization permits. The proposed APMs are incorporated into the project and are listed in the respective Initial Study checklist sections in Section 3.

2.7 Land Uses and Setting Context

The existing L-107 and L-131 gas transmission lines are located in the County and run from south of the City of Livermore to the east side of the City of Fremont. The project is located within East Alameda County Conservation Strategy (EACCS) Conservation Zones CZ 12 through 16.

A portion of the proposed project is located on lands managed by the San Francisco Public Utilities Commission (SFPUC). A portion of the proposed project is located on lands managed by the San Francisco Public Utilities Commission (SFPUC). In reviewing any proposed project or activity on its property, the SFPUC applies the policies and management actions of its Alameda Watershed Management Plan (AWMP). Conformity with the AWMP is achieved through the SFPUC's Project Review process. The proposed L-107 Retirement Project underwent Project Review on June 25, 2014 and a Certificate of Completion of the Project Review Process (with required measures) was issued on September 17, 2014.

Required Agency Approvals

- CDFW Section 1602 Lake and Streambed Alteration Agreement
- CDFW 2081 ITP
- USACE Section 404 Permit Nationwide Permit[1]
- Regional Water Quality Control Board (RWQCB) Section 401 Certification
- SFPUC Revocable License for temporary staging and parking outside PG&E easements on SFPUC fee-owned property

2.8 Relationship to Local Plans

PG&E's public utility projects are not subject to local planning ordinances because the location, design, and construction of the projects are under the exclusive jurisdiction of the CPUC. However, retirement of the gas pipeline and valve replacement would be a permitted use if it were subject to County jurisdiction.

[1] Includes the U.S. Fish and Wildlife Service (USFWS) Biological Opinion

3. Initial Study Checklist and Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 historic buildings within a state scenic highway?	☐	☐	☑	☐
(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?	☐	☐	☑	☐

3.1.1 Introduction

Summary

This section describes the existing physical environment within the project area and concludes that no significant impact to the visual landscape would result from the project.

Methodology

Visual or aesthetic resources are the natural and cultural features of the environment that can be seen and that contribute to the public's enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent that the project's presence would change the visual character and quality of the environment in which it would be located.

Visual resources were evaluated, and potential project activities during the pipeline retirement and valve replacement project work were evaluated. The evaluation of potential changes in the area's visual character is presented in the following paragraphs.

3.1.2 Regulatory Setting

The County's East County Area General Plan, City of Livermore General Plan, and City of Fremont General Plan, as well as SFPUC's Alameda Watershed Management Plan. are the local planning documents that address visual resources in the project area. Because the CPUC has jurisdiction over the design, construction, and operation of gas pipelines and associated facilities, the project is not subject to local discretionary regulations. A portion of the proposed project is located on lands managed by the San Francisco Public Utilities Commission (SFPUC) and underwent the SFPUC's Project Review process in June 2014 to ensure conformity with the SFPUC's Alameda Watershed Management Plan.

3.1.3 Environmental Setting

Aesthetic Context of the Project Area and Its Vicinity

The project area is primarily located within open areas of unincorporated Alameda County. Three retirement work areas are located near residential areas. The Vallecitos Road valve work area is approximately 280 feet from a private residence, and the Sheridan Road valve work area is approximately 1,000 feet from a private residence. The existing L-107 and L-131 pipelines currently contain underground and aboveground gas pipeline facilities. The pipelines are located primarily in hilly terrain in the western portion of the project area, and flat land in the eastern portion of the project area.

Existing Views of the Project Area

Views to and from the project area are relatively expansive. Views of the project area include residential areas in the cities of Livermore and Fremont, and open space and agricultural areas in the County, including the unincorporated town of Sunol. Agriculture consists primarily of grassland habitat used for livestock grazing. I-680, from Mission Boulevard in Fremont to near Pleasanton, in the County, is an officially designated state scenic highway (Caltrans, 2013 and 2014).

3.1.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of aesthetic impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project have a substantial adverse effect on a scenic vista?

No designated scenic vistas are present in the project area. Therefore, the project would have no impact.

(b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

A portion of I-680, located within the project area, is designated as a state scenic highway. During construction activities, temporary visual changes within view of the scenic highway may be noticeable due to the use of heavy equipment. However, after the project is complete, all temporary work areas would be restored to as close to preproject conditions as feasible. No historic buildings or rock outcroppings would be affected by the project. Vegetation management as part of project activities would include the removal and trimming of trees at a single retirement Work Area, Work Area3. Work Area3 is on private property and is not within a state scenic highway. Because the work would be temporary, and the project work areas would be restored, the project would have a less-than-significant impact on scenic resources.

(c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction activities, such as excavating and use of equipment and materials, would only be temporarily visible in project areas. The excavations would be backfilled and compacted and all work areas would be restored to pre-project conditions to the extent practicable.

Several aboveground pipeline spans and appurtenances would be permanently removed for the retirement of L-107. These features are inconsistent with the existing visual character of the area, which is comprised primarily of open space landscapes. As such, their removal would be considered an improvement.

Valve replacement would include the installation of new underground piping and fire valves. Two aboveground distribution regulators and associated protective posts would be replaced approximately 2 feet west of their current location at the Vallecitos Road work area. The existing distribution regulators and protective posts would be removed as part of project activities. The two new distribution regulators would have an aboveground footprint similar to the facilities they replaced.

Since visual impacts from construction would be temporary and there would be no net increase in permanent aboveground infrastructure, the project would not substantially degrade the existing visual character or quality of the site. Impacts would be less than significant.

(d) Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Nighttime work is not currently planned as part of project construction. However, if nighttime work is deemed necessary during construction (e.g., because of local permit requirements, cleaning, or clearance work), it would be limited to a maximum of seven nights per Work Area and will be limited in extent, duration, and brightness. Final work hours would be approved by the local jurisdiction(s), where encroachment permits are required. If lighting is temporarily required at work areas, it would be turned on only when necessary to safely complete construction activities and would be focused down on the work area when in use. No lighting would be permanently installed as part of the project and no structures would be installed that would cause glare. Impacts from light and glare would be temporary in nature and less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), 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)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☑
(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 nonagricultural use or conversion of forest land to non-forest use or otherwise impair use of agricultural land?	☐	☐	☑	☐

3.2.1 Introduction

This section describes agricultural and forestry resources within the project area and analyzes potential impacts to these resources from construction and operation of project facilities.

3.2.2 Regulatory Setting

Federal and State

Farmland Protection Policy Act

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The FPPA also stipulates that federal programs be compatible with state, local, and private efforts to protect farmland. The U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS) is charged with oversight of the FPPA.

California Land Conservation Act (Williamson Act)

In 1965, the California State Legislature enacted the California Land Conservation Act (Williamson Act) to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to nonagricultural uses. In order to preserve agricultural uses, the Williamson Act program established an agricultural preserve contract procedure by which any local jurisdiction within the state would tax landowners at a reduced rate, based on the value of the land for its current use as opposed to its unrestricted market value. In return, the landowners sign a Williamson Act contract with the local jurisdiction, agreeing to keep their land in agricultural production or another approved compatible use for at least a 10-year period. The contract is renewed automatically each year unless the owner files a notice of nonrenewal with the county clerk. In addition, a landowner has the option to file for immediate cancellation of the

contract as long as the proposed immediate cancellation application is consistent with the cancellation criteria provided in the Williamson Act and those adopted by the applicable county or city. Lands that qualify as Class I and Class II in the Soil Capability Classification System or lands that qualify for a rating of 80 to 100 in the Storie Index Rating are considered to be Prime Agricultural Land under the Williamson Act.

An "agricultural preserve," as defined by the California Department of Conservation (CDC), defines the boundary of an area within which a city or county will enter into a Williamson Act contract with landowners (CDC, 2007). The Williamson Act states that a board or council by resolution shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve state the allowed uses. Generally, any commercial agricultural use will be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit.

California Government Code§ 51238, states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of gas facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve.

Local

County General Plan Open Space Element

All areas indicated as agriculture on the County General Plan are considered as Agricultural Open Space in the Open Space Plan and are designated for preservation. Certain areas, indicated on the General Plan for future urban uses, will be designated or used as interim agricultural open space as a means of preservation prior to the need for urban development.

City of Livermore General Plan Land Use Element

The City of Livermore is completely surrounded by an Urban Growth Boundary. This boundary is intended to protect existing agricultural uses and natural resources outside the City from future urban development.

3.2.3 Environmental Setting

The CDC Division of Land Resource Protection designates agriculturally viable lands as Prime Farmland, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance. The County also designates lands that are considered economically viable as Agricultural. L-107 and L-131 pass through a variety of farmland types in the project area, including those designated as Prime, Unique, and Farmland of Statewide Importance according to the CDC Farmland Mapping and Monitoring Program (CDC, 2013). L107 and L-131 also pass through land designated as non-Prime agricultural land (CDC, 2015) and land zoned for agricultural use. Most of the agricultural lands in the project area are used for grazing.

3.2.4 Applicant-proposed Measures

The following APM will be implemented to minimize the effects of the proposed action on agriculture within the project area.

APM AG-1: Notify property owners of construction activities. Notification and coordination will include the following:

Advance Notice. At least 7 days in advance of the start of construction-related activities, PG&E will mail or otherwise deliver notices to all properties within 500 feet of the project area. The notice will:

- Illustrate the location of construction areas and access routes;
- Identify the dates and approximately times of construction; and
- Provide contact information for a PG&E point of contact for complaints related to construction activities.
- Inform the land owner whether PG&E's plans to install barb-wire fencing around Work Areas to prevent livestock entry to Work Areas.

Prior to commencing ground disturbing or noise generating activities, PG&E will submit a copy of the template used for the notification letter and a list of the landowners notified to CDFW.

Reporting of Complaints. PG&E will document all complaints and strategies for resolving complaints in monthly reports to CDFW during construction activities.

3.2.5 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Although some project work areas are located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, none of these areas would be converted to a nonagricultural use. Construction activities would be limited to existing roads and unplanted areas and would be temporary. All work areas would be restored to as close to existing conditions as possible on the completion of construction activities. Therefore, no farmlands would be converted from implementation of the project and no impact would result.

(b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The L-107 gas transmission pipeline currently exists underground except for aboveground spans, which would be removed. The valve replacement work would replace two existing aboveground distribution regulators at the Vallecitos Road work area. All other work for the valve replacement at both the Vallecitos Road and Sheridan Road work areas would be underground. With the removal of the existing distribution regulators at the Vallecitos Road valve work area, there would be no new structures or land uses proposed as part of this project. As discussed in response to question (a) above, the only temporary disturbance would occur from construction activities. Livestock would be excluded from Work Areas by barb-wire fence as directed by the landowner, but in general, grazing and other farming activities in the project area would continue uninterrupted during construction activities. Therefore, no zoning impacts or conflicts with agricultural use or Williamson Act contracts would result.

(c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project area is not designated as forest land, timberland or timberland production, and no timberland uses currently exist onsite. Therefore, no impacts would result from the proposed project.

(d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The proposed project would not introduce a new use that could result in a conversion to a nonforest use. No impacts to forestry resources would occur.

(e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use or otherwise impair use of agricultural land?

Agricultural land in proposed project work areas and the immediate vicinity would be temporarily affected during construction. Temporary impacts could include disturbance to livestock or other short-term interruption of farming or ranching operations from the presence or use of construction equipment and project vehicles on farm roads and overland access on ranchland. APM AG-1 requires advance notification of property owners, including farmers, regarding the planned start of construction activities. This is intended to allow farmers the opportunity to make arrangements for their agricultural operations to avoid and minimize and disruptions. On completion of the work, the project sites would be returned to pre-project conditions to the extent practicable and there would be no permanent impacts or conversion of to agricultural land. Impacts would be less than significant.

3.3 Air Quality and Greenhouse Gases

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Air Quality				
(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 nonattainment under an applicable federal or state 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?	☐	☐	☑	☐
Greenhouse Gases				
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 of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

3.3.1 Introduction

Summary

This section describes existing conditions, potential project-related impacts, and proposed measures for air quality and climate change issues in the project area.

Methodology

The CEQA checklist questions were used to evaluate the impacts of the project. Impacts were evaluated by using:

- Construction equipment horsepower, load factors, and emission factors from the California Emissions Estimator Model (CalEEMod) User's Guide (ENVIRON, 2013)
- Vehicle emission factors from EMFAC2014 software
- Fugitive dust emission factors for paved and unpaved road travel from AP-42 (U.S. Environmental Protection Agency [EPA], 2006 and 2011)
- Fugitive dust emission factors for disturbed soil from the Software User's Guide: URBEMIS2007 for Windows (Jones & Stokes Associates [JSA], 2007) and the South Coast Air Quality Management District (SCAQMD) CEQA Handbook (SCAQMD, 1993)

- Fugitive dust control efficiencies from Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds (SCAQMD, 2006) and the SCAQMD's Mitigation Measures and Control Efficiencies tables for fugitive dust (SCAQMD, 2007)

3.3.2 Regulatory Setting

Federal

Air Quality

Federal air quality policies are regulated through the federal Clean Air Act (CAA). Pursuant to CAA, EPA has established National Ambient Air Quality Standards (NAAQS) for the following air pollutants (called "criteria" pollutants), including carbon monoxide (CO), ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and lead. NAAQS represents levels established to avoid specific adverse health and welfare effects associated with each pollutant with a margin of safety. Table 3.3-1 summarizes the NAAQS.

Table 3.3-1. Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS [a]	NAAQS [b]	
			Primary [c]	Secondary [d]
Ozone [e]	8 hours	0.070 ppm	0.070 ppm	0.070 ppm
	1 hour	0.09 ppm	—	—
PM_{10}	Annual arithmetic mean	20 µg/m³	—	—
	24 hours	50 µg/m³	150 µg/m³	150 µg/m³
$PM_{2.5}$	Annual arithmetic mean	12 µg/m³	12 µg/m³ [f]	15 µg/m³
	24 hours	—	35 µg/m³	35 µg/m³
CO	8 hours	9.0 ppm	9 ppm	—
	1 hour	20 ppm	35 ppm	—
NO_2	Annual arithmetic mean	0.030 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.100 ppm [g]	—
SO_2	Annual arithmetic mean	—	0.030 ppm	—
	24 hours	0.04 ppm	0.14 ppm	—
	3 hours	—	—	0.5 ppm
	1 hour	0.25 ppm	0.075 ppm [h]	—
Lead [i]	Calendar quarter	—	1.5 µg/m³	1.5 µg/m³
	Rolling 3-month average	—	0.15 µg/m³	0.15 µg/m³
	30-day rolling average	1.5 µg/m³	—	—
Visibility-reducing particles (VRP)	8 hours	j	—	—
Sulfates (SO_4)	24 hours	25 µg/m³	—	—
Hydrogen sulfide (H_2S)	1 hour	0.03 ppm	—	—
Vinyl chloride [i]	24 hours	0.01 ppm	—	—

Notes:
— = No standard has been adopted for this averaging time
CAAQS = California Ambient Air Quality Standards
ppm = parts per million (by volume)
µg/m³ = micrograms per cubic meter

[a] CAAQS for ozone, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and VRP are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] NAAQS (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

[c] Primary Standards – the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d] Secondary Standards – the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e] The national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm on October 1, 2015.

[f] The EPA finalized an update to its annual NAAQS for $PM_{2.5}$ on December 14, 2012.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.100 ppm.
[h] To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.075 ppm.
[i] California Air Resources Board (CARB) has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
[j] Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer (km) due to particles when the relative humidity is less than 70 percent.
Source: CARB, 2015a

The EPA has designated counties in California as either in "attainment" or "nonattainment" for each NAAQS. A region that is meeting the air quality standard for a given pollutant is designated as being in "attainment" for that pollutant. If the region is not meeting the air quality standard, then the region is designated as being in "nonattainment" for that pollutant. If a region is designated as nonattainment for a NAAQS, CAA requires the state to develop a State Implementation Plan (SIP) to demonstrate how the standard would be attained, including the establishment of specific requirements for review and approval of new or modified stationary sources of air pollution. The federal attainment status for the County is listed in Table 3.3-2.

Table 3.3-2. Federal and California Air Quality Attainment Status for Alameda County

Pollutant	Averaging Period	Federal Status	California Status
Ozone	8 hours	Nonattainment	Nonattainment
	1 hour	—	Nonattainment
CO	8 hours	Attainment	Attainment
	1 hour	Attainment	Attainment
NO_2	1 hour	Unclassified	Attainment
	Annual arithmetic mean	Attainment	Attainment
SO_2	24 hours	Attainment	Attainment
	1 hour	Attainment	Attainment
	3 hours	—	—
	Annual arithmetic mean	Attainment	—
PM_{10}	24 hours	Unclassified	Nonattainment
	Annual arithmetic mean	—	Nonattainment
$PM_{2.5}$	24 hours	Nonattainment	—
	Annual arithmetic mean	Attainment	Nonattainment
SO_4	24 hours	—	Attainment
Lead	Calendar Quarter	Attainment	—
	30-day rolling average	Attainment	Attainment
H_2S	1 hour	—	Unclassified
Vinyl Chloride	24 hours	—	Unclassified
VRP	Less than 10 miles when relative humidity < 70 percent	—	Unclassified

Notes:
— = No standard has been adopted for this averaging time
Source: CARB, 2015b and Bay Area Air Quality Management District (BAAQMD), 2015a

Greenhouse Gases

On October 30, 2009, the EPA published the Mandatory Reporting Rule (codified in 40 Code of Federal Regulations [CFR] Part 98), that requires mandatory reporting of GHG emissions from large sources and suppliers in the U.S. (EPA, 2015a). In general, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, facilities that inject carbon dioxide (CO_2) underground, and facilities that emit 25,000 metric tons or more per year of carbon dioxide equivalent (CO_2e) emissions are required to submit annual reports to the EPA. The project does not include large stationary sources, supply operations, or other covered processes; therefore, GHG mandatory reporting would not apply to the project.

In December 2007, the California Air Resources Board (CARB) adopted the first regulation pursuant to AB 32 which requires mandatory reporting of GHG emissions from large emitting facilities, fuel suppliers, and electricity providers. This regulation was significantly revised to better align with EPA's Mandatory Reporting Rule; the revised regulation became effective January 1, 2013. The current regulation, which includes additional minor revisions to accommodate the Cap-and-Trade Program, became effective January 1, 2015 (CARB, 2015d). CARB adopted the California Cap-and-Trade Program on October 20, 2011. Under the California Cap-and-Trade Program, most covered entities have an obligation to hold GHG allowances beginning in 2013; fuel suppliers, including public utility gas corporations operating in California, have an obligation to hold GHG allowances beginning in 2015 (CARB, 2015e). The Cap-and-Trade Program requires PG&E, as a supplier of natural gas, to hold and surrender GHG allowances to cover the compliance obligation of operating PG&E's natural gas transmission and distribution system.

On June 3, 2010, the EPA promulgated the final GHG Tailoring Rule (75 Federal Register [FR] 31514). The GHG Tailoring Rule established clear applicability thresholds for stationary source emitters of GHGs under Prevention of Significant Deterioration (PSD) and Title V regulations. In general, any new stationary source with GHG emissions of 100,000 tons CO_2e per year or greater became subject to both PSD review and the Title V program. On June 23, 2014, the U.S. Supreme Court issued a decision prohibiting the EPA from considering GHG emissions when determining PSD review and Title V program applicability (*Utility Air Regulatory Group v. EPA*, No. 12-1146). Per the Supreme Court decision, the EPA may continue to require GHG emission limitations in PSD and Title V permits, if PSD review and the Title V program are triggered by emissions of criteria pollutants. Because no stationary sources of this magnitude are associated with the project, PSD and Title V regulations would not apply to the project.

State

Air Quality

CARB oversees California air quality policies. The California CAA was approved in 1988 and, as amended in 1992, established the CAAQS. These standards, summarized in Table 3.3-1, are generally more stringent and include more pollutants than the NAAQS. Similar to the EPA, CARB designates counties in California as being in "attainment" or "nonattainment" for CAAQS. The state attainment status for the County is listed in Table 3.3-2.

CARB has the primary responsibility for producing the SIP for nonattainment pollutants. However, CARB relies on and oversees the efforts of local air districts to adopt and implement air quality regulations and plans, including CARB-suggested control measures and additional emission reduction strategies for sources under their jurisdiction. CARB consolidates statewide implementation plan requirements for mobile sources and consumer products with locally adopted district plans and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, as well as attainment plans adopted by the air districts and approved by CARB.

Asbestos

The Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations was signed into state law on July 22, 2002 (17 California Code of Regulations [CCR] 93105; CARB, 2015c), and became effective for the BAAQMD on November 19, 2002. The purpose of this regulation is to reduce public exposure to naturally occurring asbestos (NOA) from construction and mining activities that emit dust which may contain NOA. The ATCM requires regulated operations engaged in road construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas where NOA is likely to be found, to employ the BMP dust mitigation measures in order to control dust emissions and reduce potential exposure to nearby receptors.

Greenhouse Gases

The framework for regulating GHG emissions in California falls under the implementation requirements of the Global Warming Solutions Act of 2006 (referred to as Assembly Bill [AB] 32), which was signed into law by the California State Legislature in 2006. AB 32 requires CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons CO_2e; CO_2 emissions account for approximately 90 percent of this value (CARB, 2007).

In December 2007, CARB adopted the first regulation pursuant to AB 32 which requires mandatory reporting of GHG emissions from large emitting facilities, suppliers, and electricity providers. This regulation was significantly revised to better align with EPA's Mandatory Reporting Rule; the revised regulation became effective January 1, 2013. The current regulation, which includes additional minor revisions to accommodate the Cap-and-Trade Program, became effective January 1, 2015 (CARB, 2015d). CARB adopted the California Cap-and-Trade Program on October 20, 2011. Under the California Cap-and-Trade Program, most covered entities have an obligation to hold GHG allowances beginning in 2013; fuel suppliers, including public utility gas corporations operating in California, have an obligation to hold GHG allowances beginning in 2015 (CARB, 2015e).

Regional

The project is located in the San Francisco Bay Area Air Basin, which is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD is the agency charged with preparing, adopting, and implementing emission control measures and standards for mobile, stationary, and area sources of air pollution in the San Francisco Bay Area Air Basin.

Air Quality Plans

BAAQMD works in cooperation with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to develop air quality plans. BAAQMD prepares ozone attainment demonstrations for the federal ozone standard and clean air plans for the California ozone standard. The *2001 Ozone Attainment Plan* is BAAQMD's contribution to the SIP for demonstrating attainment of the federal 1-hour ozone standard (BAAQMD, 2001). The *2010 Clean Air Plan* is the currently approved ozone clean air plan, which shows how BAAQMD would make progress towards meeting the state 1-hour ozone standard. The *2010 Clean Air Plan* provides an integrated, multi-pollutant control strategy to reduce emissions and decrease ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate (BAAQMD, 2010a).

Because BAAQMD currently attains the federal 24-hour PM_{10} standard, BAAQMD is not required to develop a plan for this standard at this time. However, BAAQMD is designated nonattainment for state PM_{10} standards and has implemented a Particulate Matter Control Program. The Particulate Matter Control Program includes emission limits of primary particulate matter and particulate matter precursors from stationary sources, wood smoke regulations, and the 55 Particulate Matter Control Measures outlined in the *2010 Clean Air Plan*. Additionally, although BAAQMD is currently designated as federal nonattainment for the 24-hour and annual $PM_{2.5}$ standards, recent monitoring data indicate that $PM_{2.5}$ levels have decreased in the Bay Area since 2008. As a result, CARB submitted a "clean data finding" request to EPA on behalf of BAAQMD on December 8, 2011. On January 9, 2013, EPA issued a final rule to determine that the San Francisco Bay Area has attained the federal 24-hour $PM_{2.5}$ standard. As a result, BAAQMD can meet the federal $PM_{2.5}$ standard by preparing a redesignation request and a $PM_{2.5}$ maintenance plan or a "clean data" SIP submittal (BAAQMD, 2015b).

Asbestos

In addition to the state Asbestos ATCM, the BAAQMD regulates asbestos demolition, renovation, and manufacturing in Regulation 11, Rule 2. Asbestos-containing material (ACM) is defined as any building material containing greater than 1 percent commercial asbestos by weight, area, or count, and includes both friable and Category I or Category II nonfriable ACM. Although ACM can be associated with pipe wrapping materials, the pipes being removed as part of the project are not expected to contain such materials. If material known or suspected to contain asbestos is encountered, removal, handling, labeling, transport, and disposal of the material would be conducted in accordance with BAAQMD Rule 11-2 procedures.

PG&E also has procedures regarding how to remove, handle, and dispose of gas pipe wrap that may contain asbestos. These procedures include proper training, use of personal protective equipment, and use of proper tools and equipment.

3.3.3 Environmental Setting

The project is located in the southwestern region of the County, which is bordered on the east by the East Bay hills and on the west by San Francisco Bay. The climate of southwestern Alameda County is predominantly affected by its close proximity to San Francisco Bay. Breezes from San Francisco Bay cool the air when they come in contact during warm weather and warm the air during cold weather; these breezes push cool air onshore during the day and draw air

offshore at night. This effect moderates air temperatures in the region, with average winter temperatures ranging from a low of 40 degrees Fahrenheit (°F) to a low of 60°F and average summer temperatures ranging from mid-50°F to mid-70°F. Wind speeds are moderate in this region, with annual average wind speeds of approximately 7 miles per hour (mph); wind speeds are even lower further east of San Francisco Bay (BAAQMD, 2010b).

Pollution potential is relatively high in the southwestern Alameda County region during the summer and fall. When high pressure dominates, low mixing depths and wind patterns can concentrate and carry pollutants from other cities to this area, adding to the locally emitted pollutant mix. The polluted air is then pushed up against the East Bay hills. In the wintertime, the air pollution potential in southwestern Alameda County is moderate (BAAQMD, 2010b).

Air Quality

The primary pollutants of concern in the project area are ozone, PM_{10} and $PM_{2.5}$ because the County is designated non-attainment for these pollutants by EPA and/or CARB. Six ambient air monitoring stations operate in the County. One of the six monitoring stations measures PM_{10} concentrations, five of the six monitoring stations measure $PM_{2.5}$ concentrations, and all of the monitoring stations measure ozone concentrations. Table 3.3-3 summarizes the ambient air monitoring data near the project for the most recent 3-year period that data are available. Monitored concentrations of ozone exceeded the state 1-hour standard during 2012 and 2014, but not during 2013, and the state 8-hour standard during 2013 and 2014, but not during 2012. Monitored concentrations of ozone did not exceed the federal 8-hour standard during the period 2012 through 2014. Monitored concentrations of PM_{10} exceeded the state annual average standard during 2013 and 2014, but not during 2012, and the state 24-hour standard during 2012, 2013, and 2014. Monitored concentrations of PM_{10} did not exceed the federal 24-hour standard during the period 2012 through 2014. Monitored concentrations of $PM_{2.5}$ exceeded the federal 24-hour standard during 2013 and 2014, but not during 2012. Monitored concentrations of $PM_{2.5}$ did not exceed the state and federal annual average standards during the period 2012 through 2014.

Table 3.3-3. Summary of Ambient Air Monitoring Data in the Project Area (Most Recent 3-year Period of Available Data)

Pollutant	Averaging Time	2012	2013	2014
Ozone (ppm) [a]	1 hour	0.094	0.085	0.096
	8 hours	0.065	0.075	0.075
PM_{10} ($\mu g/m^3$) [b]	Annual arithmetic mean	18.8	22.2	20.0
	24 hours	59.6	58.1	56.4
$PM_{2.5}$ ($\mu g/m^3$) [c]	Annual arithmetic mean	9.5	10.4	9.5
	24 hours	33.6	37.9	37.6

Notes:

[a] Data from the monitoring station located at 3466 La Mesa Drive, Hayward, Alameda County, California.

[b] Data from the monitoring station located at 156B Jackson Street, San Jose, Santa Clara County, California. Although this monitoring station is not located within the County, it was the closest monitoring station within the San Francisco Bay Area Air Basin that monitored data were available.

[c] Data from the monitoring station located at 9925 International Boulevard, Oakland, Alameda County, California.

Source: CARB, 2015f

Asbestos

A review of available geological maps and reports (Dibblee, 1980a, b, c, and d; California Division of Mines and Geology [CDM&G], 2000) indicate that along the line 107 abandonment alignment it is unlikely there is an occurrence of ultramafic igneous rocks. These ultramafic rocks are the typical source of NOA. Further, it is unlikely that NOA is present in nonultramafic rocks (CDM&G, 2000). Along the L-107 alignment, geological maps indicate that all soils and rock consist of Quaternary- to Jurassic-age alluvium and sedimentary rocks, although small unmapped basaltic (nonultramafic, nonasbestos containing) volcanic rock units may be present.

Greenhouse Gases

BAAQMD periodically prepares GHG emissions inventories, which include direct and indirect GHG emissions due to human activities, to support BAAQMD's climate protection activities. Table 3.3-4 presents the 2011 GHG emissions inventory for the Bay Area, which is the most recently available inventory. In the Bay Area, CO_2, CH_4, and N_2O emis-

sions represented about 90.3 percent, 3.0 percent, and 1.7 percent of the total GHG emissions in 2011, respectively. Emissions from high global warming potential gases, such as HFCs, PFCs, and SF_6, made up about 4.9 percent of the total GHG emissions in 2011 (BAAQMD, 2015c).

Table 3.3-4. Bay Area 2011 GHG Emissions Inventory

End-use Sector	Percent of Total Emissions	CO_2e Emissions (million metric tons/year)
Industrial/commercial	35.7	31.0
Residential fuel usage	7.7	6.6
Electricity/cogeneration	14.0	12.1
Off-road equipment	1.5	1.3
Transportation	39.7	34.3
Agriculture/farming	1.5	1.3
Total	100	86.6

Source: BAAQMD, 2015c

3.3.4 Applicant-proposed Measures

CEQA criteria require the consideration of regional, state, and federal plans, policies, and regulations when evaluating potential project impacts and developing avoidance and minimization measures. APMs were identified to address state and regional plans, policies, and requirements and are considered part of the project. PG&E has incorporated these APMs into the project to minimize the project's air and GHG emissions.

- **APM AQ-1: Fugitive Dust.** As stated previously, BAAQMD recommends implementing fugitive dust control measures for construction projects. The following control measures are for reducing PM_{10} and $PM_{2.5}$ emissions during construction.

  Basic Control Measures. The following APMs would be implemented at all active construction sites:

  - Water all active areas (e.g., soil piles, graded areas) at least twice daily or apply (nontoxic) soil stabilizers.
  - Cover all trucks hauling soil, sand, or other loose materials offsite.
  - Apply water three times daily or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
  - All vehicle speeds on unpaved roads shall be limited to 15 mph.
  - Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas.
  - Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

- **APM AQ-2: Exhaust Emissions.** The following measures would be implemented during construction to minimize the construction exhaust emissions:

  - Minimize construction equipment exhaust by using low-emissions or electric construction equipment where the construction contractor has access to this type of equipment for the project. Use off-road equipment engines that meet or exceed CARB's Tier 3 Emission Standards. Engines can achieve these standards through the use of newer model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
  - Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time is dependent on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of 5 consecutive minutes required by regulation (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine shall be shut off.
  - Minimize welding and cutting by using compression or mechanical applications where practical and within standards.
  - Ensure all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Ensure that all equipment has been checked by a certified mechanic and determined to be running in proper condition prior to operation.

3.3.5 Impacts

The following section addresses the responses to the CEQA checklist questions for air quality and GHG impacts. With incorporation of APMs into the project design, potential impacts from project construction will be less than significant. Operation-related impacts are not expected to be associated with this project because the existing pipelines will be retired and were not, therefore, estimated as part of this evaluation. The BAAQMD Board of Directors adopted thresholds of significance and the *Draft 2010 CEQA Air Quality Guidelines* in June 2010. The BAAQMD updated the *Guidelines* in 2012, and lead agencies may rely on these for identifying potential mitigation measures.

For thresholds of significance, the BAAQMD recommends use of the significance thresholds in the *1999 BAAQMD CEQA Guidelines* (BAAQMD, 1999). Per the *1999 BAAQMD CEQA Guidelines,* significance of construction impacts should be determined based on control measures implemented, as opposed to quantification of emissions and comparison to numerical thresholds. Construction of a project would be considered to have a less-than-significant impact for fugitive dust if all of the BAAQMD-recommended control measures are implemented.

Applicable control measures have been included as part of the project APMs.

The *1999 BAAQMD CEQA Guidelines* do allow for the quantification of construction emissions as part of the project analysis and impact discussion. In the absence of approved quantitative thresholds of significance for construction emissions, the thresholds of significance in the *Draft 2010 CEQA Air Quality Guidelines* are presented here.[2]

For criteria pollutant emissions, the 2010 thresholds are (BAAQMD, 2010b):

- 54 pounds per day (lbs/day) of reactive organic gases (ROG) or volatile organic compounds (VOCs),
- 54 lbs/day of nitrogen oxides (NOx),
- 82 lbs/day of PM_{10} from exhaust, or
- 54 lbs/day of $PM_{2.5}$ from exhaust.

For PM_{10} and $PM_{2.5}$ related to construction fugitive dust, the *Draft 2010 CEQA Air Quality Guidelines* also indicate that projects should include BMPs rather than achieve specific emissions thresholds.

The *1999 BAAQMD CEQA Guidelines* provide thresholds for analysis of health risk impacts from project operation, but not construction. BAAQMD's *Draft 2010 CEQA Air Quality Guidelines* (BAAQMD, 2010b) include the following health risk thresholds:

- Increased cancer risk of greater than 10 in a million, and
- Increased chronic or acute risk of greater than 1.

Although BAAQMD recommends the same thresholds to evaluate construction- and operation-related health risk impacts in the *Draft 2010 CEQA Air Quality Guidelines*, BAAQMD suggests that construction-related impacts be addressed on a case-by-case basis. Health risk impacts from the project will be evaluated qualitatively based on the construction schedule and location of sensitive receptors, in accordance with the BAAQMD Risk and Hazard Screening Analysis Process Flowchart (BAAQMD, 2012a).

With respect to GHGs, CARB developed statewide interim thresholds of significance in 2008. For industrial projects, CARB proposed a quantitative threshold of 7,000 metric tons of CO_2e per year (CARB, 2008). This threshold was used to evaluate the project's construction-related climate change impacts because there is no BAAQMD-recommended threshold of significance for GHG emissions during construction. Project GHG emissions were estimated in accordance with the BAAQMD's *GHG Plan Level Guidance* (BAAQMD, 2012b).

Air Quality Impacts

(a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

[2] BAAQMD describes the status of its CEQA Air Quality Guidelines at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa.

Because the project would not include any stationary sources, the stationary control measures identified in the *2001 Ozone Attainment Plan* are not applicable. However, the mobile source control measures pertaining to heavy-duty, off-road equipment are applicable. The project would be consistent with the *2001 Ozone Attainment Plan* because APM AQ-2 contains measures targeting off-road equipment, including the use of equipment meeting CARB-approved engine standards. Similarly, the project would be consistent with the *2010 Clean Air Plan* because APM AQ-2 encourages the use of low-emission or electric construction equipment where feasible. Therefore, the project's construction activities would neither conflict with nor obstruct implementation of the applicable air quality plan and no impacts would occur.

(b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potential short-term impacts from the project may result from construction activities. In nonattainment areas, construction equipment exhaust emissions of ozone precursors (NOx and VOCs), PM_{10}, $PM_{2.5}$, and soil-disturbing activities may temporarily impact air quality. These short-term impacts are summarized in Table 3.3-5 (PG&E, 2015).

Implementation of the measures identified in APM AQ-1, would reduce fugitive dust emissions during construction to a less-than-significant level according to the thresholds of significance identified above. NOx and VOC emissions would be reduced with implementation of APM AQ-2. As discussed in Section 3.3.3 Environmental Setting, NOA is unlikely to be present along the project alignment; therefore there would be no NOA-related impacts associated with construction. Table 3.3-5 shows the construction emissions with implementation of APMs AQ-1 and AQ-2, as well as the 2010 thresholds for comparison purposes.

Two construction scenarios are evaluated. Scenario 1 considers construction occurring over an approximately six-month period including up to 90 days for pipeline cleaning. Scenario 2 considers a more intensive work plan with construction occurring over an approximately three and a half month period including up to 30 days for pipeline cleaning. Construction emissions under both construction scenarios, with or without implementation of the APMs, would cause a less-than-significant impact on air quality and are not expected to violate an air quality standard for all constituents analyzed except PM_{10}. PM_{10} emissions would be less-than-significant on air quality for construction Scenario 1. PM_{10} emissions would slightly exceed the BAAQMD thresholds by 13.15 lbs/day under construction Scenario 2 emissions without APMs. With the implementation of APMs PM_{10} emissions under construction Scenario 2 would be substantially reduced and to less-than-significant level.

Table 3.3-5. Construction Emissions

Construction Scenario [d]	VOC	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Scenario 1 [d] Construction Emissions Without APMs						
Average daily emissions (lbs/day) [a]	2.88	16.09	23.89	0.03	70.21	12.96
Project emissions (tons/project)	0.24	1.33	1.97	0.00	5.79	1.07
Scenario 1 [d] Construction Emissions with APMs [b]						
Average daily emissions (lbs/day) [a]	0.77	15.03	14.65	0.03	27.21	5.09
Project emissions (tons/project)	0.06	1.24	1.21	0.00	2.24	0.42
Scenario 2 [d] Construction Emissions Without APMs						
Average daily emissions (lbs/day) [a]	4.81	29.62	41.65	0.04	95.15	17.98
Project emissions (tons/project)	0.21	1.32	1.85	0.00	4.23	0.80
Scenario 2 [d] Construction Emissions with APMs						
Average daily emissions (lbs/day) [a]	1.03	21.45	19.18	0.04	33.25	6.25
Project emissions (tons/project)	0.05	1.04	0.93	0.00	1.61	0.30
BAAQMD Thresholds (Average lbs/day) [c]	54	N/A	54	N/A	82	54

Notes:

[a] It was assumed that all construction equipment and vehicles used for each construction activity could operate simultaneously on any given day during the scheduled duration for that activity. Average daily emissions were determined per BAAQMD guidance by dividing total project emissions by construction duration (days).

[b] Per APM AQ-2, construction equipment with engines that meet or exceed the Tier 3 emission standards would be used.

[c] 2010 BAAQMD Thresholds taken from Table 2-1 of the *Draft 2010 CEQA Air Quality Guidelines* (BAAQMD, 2010b).

[d] Scenario 1 considers construction occurring over an approximately six month period including up to 90 days for pipeline cleaning. Scenario 2 considers a more intensive work plan with construction occurring over an approximately three and a half month period including up to 30 days for pipeline cleaning.

(c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Construction of the project would result in emissions of ozone precursors (NOx and VOCs), PM_{10}, and $PM_{2.5}$. However, these emissions would be temporary and would not result in a cumulatively considerable net increase in ozone, PM_{10}, or $PM_{2.5}$ concentrations with implementation of APMs AQ-1 and AQ-2. Therefore, the cumulative impact to air quality would be less than significant.

(d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as facilities or land uses that include people who are particularly susceptible to the effects of air pollution (e.g., children, elderly, and people with illnesses). Schools, hospitals, daycare centers, and nursing homes are all examples of sensitive receptors (BAAQMD, 2010b). Based on a review of aerial imagery, no sensitive receptors were identified within 1,000 feet of the project area. However, residences are located within 1,000 feet of some retirement work locations. As a conservative approach, these residences will be considered sensitive receptors.

The emissions of potential air toxics (particularly diesel particulate matter) associated with construction activities are expected to be low, especially with the implementation of APM AQ-2, and would be transient, temporary, and occur in varying locations within the project site. For these reasons, the project is not expected to expose sensitive receptors to high-level concentrations of air toxics. However, because sensitive receptors are located within 1,000 feet of the project area, some minor exposure may occur; however, given the low level of exposure, the air quality impacts, and associated health risk impacts, affecting sensitive receptors would be less than significant.

(e) Would the project create objectionable odors affecting a substantial number of people?

Although emissions from construction of the project may result in temporary odors, they would be short term and affect few people due to the distance between the project area and occupied areas. Therefore, air quality impacts related to odor would be less than significant.

GHG Impacts

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions directly generated during construction would result in a less-than-significant, short-term impact to climate change. L-107 has already been purged of natural gas, and gas would be vented for a brief duration (only a few minutes) from L-131 at each valve replacement work area prior to work on the pipeline taking place. Accordingly, an unquantified but limited amount of pipeline natural gas and methane would be released prior to commencing construction. As summarized in Table 3.3-6 (PG&E, 2015), the GHG emissions from the construction phase of the project would be well below CARB's proposed threshold of 7,000 metric tons of CO_2e per year and less than 0.0003 percent of annual emissions in the Bay Area, as presented in the Bay Area 2011 GHG Emissions Inventory (BAAQMD, 2015c). GHG impacts from the project would be less than significant under construction Scenarios 1 and 2.

Table 3.3-6. GHG Construction Emissions

Construction Scenario [d]	CO_2	CO_2e [a]
Scenario 1 [d] Project emissions (metric tons/project) [b]	233	244
Scenario 2 [d] Project emissions (metric tons/project) [b]	179	188
CARB Thresholds of Significance (metric tons/year) [c]	N/A	7,000

Notes:

[a] Only CO_2 emission factors were available for all types of construction equipment used for this project. Emissions of CH_4 and N_2O from combustion sources are expected to be much lower than emissions of CO_2, contributing in the range of 2 to 4 percent of the total CO_2e emissions (CARB, 2014). Therefore, the CO_2 emissions were conservatively increased by 5 percent to calculate CO_2e emissions, accounting for the potential CH_4 and N_2O emissions associated with construction activities.

[b] It was assumed that all construction equipment and vehicles used for each construction activity could operate simultaneously on any given day during the scheduled duration for that activity.

[c] CARB Thresholds of Significance taken as the statewide interim thresholds of significance for GHGs (CARB, 2008).

[d] Scenario 1 considers construction occurring over an approximately six month period including up to 90 days for pipeline cleaning. Scenario 2 considers a more intensive work plan with construction occurring over an approximately three and a half month period including up to 30 days for pipeline cleaning.

b) Would the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The minimal short-term construction GHG emissions would not interfere with the long-term goal of AB 32 to reduce GHG emissions to 1990 levels by 2020. Therefore, no conflicts with GHG plans, policies, or regulations, and thus no impacts, would occur.

3.4 Biological Resources

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

3.4.1 Introduction

This section describes biological resources in the project vicinity, and identifies potential impacts to habitats and species that could result from the project.

Methodology

This section summarizes the methods used to identify resources and analyze the potential impacts to biological resources, including waters and wetlands, sensitive habitat, and special-status species occurring in the proposed project area.

As used here, the term “special-status species” is defined as including plants or animals meeting the criteria defined below.

A plant species is considered to be of special status if it meets one or more of the following criteria:

- Listed, proposed for listing, or candidate for listing, as threatened or endangered under the Federal Endangered Species Act (FESA) (50 CFR 17.11 for wildlife; 50 CFR 17.12 for plants; 67 FR 40658 for candidates) and various notices in the FR for proposed species).

- Listed under the California Endangered Species Act (CESA) as threatened or endangered, or proposed or candidates for listing.
- Designated as rare under the Native Plant Protection Act (NPPA).
- Species that otherwise meet the definition of rare, threatened or endangered species under CEQA. For the purposes of this project, that includes species listed by the California Native Plant Society (CNPS) in the online version of its Inventory of Rare, Threatened and Endangered Plants of California (CNPS, 2015) as Rare Plant Rank 1A, 1B, and 2.

Special-status wildlife includes species that meet one or more of the following criteria:

- Listed, proposed for listing, or candidate for listing as threatened or endangered under the FESA.
- Listed or candidates for listing as threatened or endangered under the CESA.
- Designated as Species of Special Concern or a Fully Protected Species by CDFW.
- Species that otherwise meet the definition of rare, threatened, or endangered species under CEQA.

Natural communities were considered to be of special status if they are identified on the CDFW List of Vegetation Alliances and Associations as being highly imperiled, also classified by CDFW as ranks S1 to S3 in the California Natural Diversity Database (CNDDB) (CDFW, 2015), and natural communities of special concern.

Data and Literature Review

Prior to conducting surveys, an evaluation of the special-status species records was conducted and aerial photographs and existing literature sources were reviewed. Database queries were made of the CNDDB (CDFW, 2015) and the CNPS online inventory of rare and endangered plants (CNPS, 2015) to identify special-status species and resources within and adjacent to the Altamont, Livermore, Niles, and La Costa Valley 7.5-minute series USGS topographic quadrangles, and within a 5-mile radius. Aquatic habitats were identified using aerial photographs and national wetlands inventory maps (USFWS, 2014), and USGS National Hydrography Dataset. Hydroperiod, or the length of time aquatic habitats persist during an average rainfall year, was estimated using Google Earth historical imagery dated 1993 to 2012. The potential for special-status species and resources to occur was first evaluated by reviewing the range and habitat requirements of the species and comparing those to the conditions onsite.

Survey Methods

Reconnaissance-level surveys of the retirement project area were conducted on 9 days between December 28, 2013 and January 23, 2014. Reconnaissance-level surveys of the valve project area were conducted on July 31, 2015. Surveyed areas were inspected for the presence of habitat features associated with the presence of special-status species, including the federally and state- threatened California tiger salamander and the federally-threatened California red-legged frog. Additionally, reconnaissance-level surveys of work areas in potentially suitable habitat for the federally and state-threatened Alameda whipsnake were conducted in February 2016 to assess the potential for this species to occur (Swaim, 2016).

Rare plant surveys were conducted in April and July 2016 following the methods described in CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.

The location of potentially jurisdictional wetlands and aquatic resources were delineated by PG&E within the project area on April 18, April 25, May 13, and June 16, 2014; and November 2, 2015. The survey methodology followed USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008). Subsequently, the location of jurisdictional stream and swales subject to California Fish and Game Code (FGC) Section 1602 were identified by PG&E and CDFW personnel on March 17 and June 3, 2015; and February 29, 2016.

3.4.2 Regulatory Setting

Federal

Federal Endangered Species Act

FESA protects plants and wildlife that are listed as endangered or threatened by USFWS and the National Marine Fisheries Service (NMFS). Section 9 of FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). Sections 7(b)(4) and 7(o)(2) of FESA generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that FESA prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of endangered plants on nonfederal areas in violation of state law or regulation or in the course of any violation of a state criminal trespass law. FESA requires a federal agency consult with the USFWS and/or NMFS when there is a discretionary federal involvement or control over an action that may affect a listed species or critical habitat. Through consultation and the issuance of a biological opinion, USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise lawful activity, provided the action will not jeopardize the continued existence of the species. PG&E received a biological opinion (BO) for this project on April 1, 2016 (Corps File Number 08ESMF00-2015-F-0160), pursuant to FESA Section 7, which authorizes the incidental take of the federally threatened California tiger salamander, the federally threatened California red-legged frog, and the federally threatened Alameda whipsnake. The project BO was appended to the programmatic BO for USACE Permitted Projects Utilizing the EACCS *Programmatic Biological Opinion for Corps Permitted Projects Utilizing the East Alameda County Conservation Strategy that May Affect Federally Listed Species in East Alameda County, California* (Corps File Number 2011-00230S).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by MBTA, USFWS may issue permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (CFGC).

Federal Clean Water Act

The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." CWA Section 404 prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from USACE. The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]). EPA also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to CWA Section 401 is required for Section 404 permit actions; this certification or waiver is issued by the applicable RWQCB. PG&E received coverage under Nationwide Permit 12 for proposed work within or near federally jurisdictional waters at Work Area 37A on April 26, 2016, #2014-00312S.

State and Local

California Endangered Species Act

CESA generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (defined as "candidates" by the state). FGC Section 2085 provides the same legal

protection to species that are candidate for listings as to an endangered or threatened species. FGC Section 2080 prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in FGC Section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful activities. Project proponents wishing to obtain incidental take permits are able to do so through a permitting process outlined in California Code of Regulations section 783. PG&E has applied for a permit for incidental take of the state-listed (threatened) California tiger salamander (application number 2081-2014-058-3).

Fully Protected Species

California first began to designate species as "fully protected" prior to the creation of CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, mammals, amphibians, reptiles, and birds. Most fully protected species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (FGC Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW may authorize take of fully protected species only in very limited circumstances, such as for necessary scientific research.

California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires that a Streambed Alteration Application be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. PG&E has applied for a streambed alteration agreement for proposed work within or near jurisdictional waters at Work Areas 2-3, 6-7, 14-15, 21-22, 24-25, 26-27, 28-29, 31-32, and 37A (application number 1600-2014-0301-3).

Local

This section includes a summary of local or regional plans, policies, or regulations that identify sensitive or special-status species in the project area, as well as local polices or ordinances that protect biological resources. PG&E has indicated to CDFW that the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, and therefore PG&E's project is not subject to local discretionary regulations related to biological resources. CDFW is not opining on the accuracy of PG&E's position. Nevertheless, CPUC exclusive jurisdiction over the siting, design, and construction of the project renders the project not subject to local discretionary regulations related to biological resources. The following summary is provided for informational purposes and to assist with CEQA review.

East Alameda County Conservation Strategy

The EACCS provides a framework for the long-term conservation and management of 19 focal species, including nine state and/or federal species and the habitats that support them. The EACCS is also intended to streamline and simplify the issuance of permits, establish priorities for mitigation and conservation, and help maintain biological and ecological diversity in eastern Alameda County. The EACCS aims to standardize avoidance, minimization, mitigation, and compensation requirements to comply with federal, state, and local laws and regulations relating to biological and natural resources in the study area. The proposed project spans EACCS Conservation Zones 2, 11, 12, 15 and 16.

Alameda East County Area Plan

Relevant policies from the Land Use Goals, Policies, and Programs Biological Resources of the East County Area Plan (2011) are listed below, numbered as they are in the Area Plan:

- Policy 125: The County shall encourage preservation of areas known to support special status species
- Policy 126: The County shall encourage no net loss of riparian and seasonal wetlands.
- Policy 127: The County shall encourage the preservation of East County's oak woodland plant communities.

Livermore General Plan

Relevant policies from the Goals, Objectives, Policies, and Programs for Biological Resources are listed below, numbered as they are in the Open Space and Conservation Element in the City of Livermore General Plan.

- Goal OSC-1: to conserve the value and function of Livermore's open space as a biological resource.
  - Objective OSC-1.1: Maintain biodiversity within the Planning Area with special emphasis on species that are sensitive, rare, declining, unique or represent valuable biological resources.
  - Objective OSC-1.2 Minimize impacts to sensitive natural habitats including alkali sinks, riparian vegetation, wetlands and woodland forest.
- P4. Riparian woodlands and freshwater marshes shall be preserved. Developers shall be required to mitigate possible adverse impacts upon these resource areas. Consistent with the North Livermore Urban Growth Boundary Initiative, no development shall be allowed that would have a substantial adverse impact or significant effect on such areas (NLUGBI).
- P5. Grading and excavation in woodland areas shall avoid disturbances to subsurface soil, water or rooting patterns for natural vegetation.

Fremont General Plan

Relevant policies from the Goals, Policies and Implementing Actions for Biological Resources are listed below, numbered as they are in the Conservation Element in the City of Fremont General Plan.

- Goal 7-1: Biological Resources. A thriving natural environment with protected habitat that enhances the biological value of the City and preserves the open space frame.
  - Policy 7-1.1: Preservation of Natural Habitat. Preserve and protect fish, wildlife, and plant species and their habitats including wetlands, creeks, lakes, ponds, saltwater bodies and other riparian areas. Maintain these areas for their critical biological values and to help improve water quality.
  - Policy 7-1.2: Protection of Species. Preserve and protect rare, threatened, endangered and candidate species and their habitats consistent with State and Federal law.

3.4.3 Environmental Setting

This section provides a discussion of existing conditions within the project area.

The project location (see Figure 1-1) is in the Fremont-Livermore Hills and Valleys ecological subsection along the western edge of the Central Valley Coast Ranges Ecological Section (Miles and Goudey, 1998). This region is characterized by parallel rounded hills comprised primarily of Miocene marine sediments (Miles and Goudey, 1998). Locally, the landscape associated with the project area is characterized by gentle rounded slopes and nearly level terraces. Elevation of Work Areas ranges from 200 to 950 feet (60m to 290m) above mean sea level.

Average annual temperatures range from a lows around 3°F 6 to 43°F in December and January to highs between 80°F and 90°F in July and August with the cooler temperatures occurring more towards the western end of the project area. The average annual precipitation ranges from 16 inches at Fremont to 14.5 inches in Livermore. Most of the rainfall occurs between November and April, with minimal rainfall occurring during the summer months. Runoff from the hillslopes to the valleys is rapid and all but the largest streams are dry throughout the summer months (Miles and Goudey, 1997).

Vegetation Types and Landcover

Seven vegetation types and five land cover types were identified within the project area (where work activities and project access will occur). The acreages of land use cover are shown in Table 3.4-1 (Garcia and Associates [GANDA], 2014). The dominant land use in the project area consists of cattle pasture. Non-native grassland represents the greatest proportion of acreage and much of it is heavily grazed.

Table 3.4-1. Vegetation and Landcover Types and Acreage within the L-107 Retirement and L-131 Valve Replacement Project Areas[3]

Vegetation and Landcover Type	Acreage
Agricultural	0.30
Coast live oak woodland	0.09
Developed	4.67
Ephemeral channel	0.03
Non-native grassland	9.82
Riparian woodland upland	0.02
Ruderal	<0.005
Sycamore alluvial woodland	0.07
Upland Swale	0.02
Valley oak savannah	0.05
Wetland Swale	0.01
Willow scrub wetland	<0.005
Total	15.09

Agriculture

Agricultural land within the project area consists of cultivated areas, primarily represented by vineyards, but also includes unpaved roads used by agricultural equipment as well as rangeland (cattle pasture). Agricultural land is present in Work Areas associated with retirement Sites 8, 12, 13, 14, and 15, and at seven aboveground feature locations.

Coast Live Oak Woodland

Coast live oak woodland is typically associated with alluvial terraces, canyon bottoms, stream banks, slopes, and flats (Sawyer, et al., 2009). Coast live oak is dominant or co-dominant in the project area with species including big leaf maple (*Acer macrophyllum*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), and California bay (*Umbellularia californica*). This vegetation type is found at Work Area 60 and at one aboveground feature location.

Developed

Developed areas refer to all types of nonagricultural development within the project area, including residential, industrial, commercial, and transportation. Developed areas include a golf course and residential housing. Developed areas were mapped on the basis of their distinct signatures on aerial photographs. These areas are often characterized by geometric or regular shapes and are readily distinguished from naturally occurring signatures in any terrain. Landscaping associated with some of these areas includes lawns, ornamental flowers, shrubs, and trees. Developed areas are present within approximately 17 Work Areas, 12 aboveground features, 1 staging area, and 1 turnaround area.

Ephemeral Channels

Ephemeral channels convey flow only in direct response to storm events and have no protracted water supply from snow melt, groundwater, seepage or other sources. Some ephemeral channels in the project area are generally devoid of vegetation while others exhibit evidence of saturated soils and are characterized predominately by wetland vegetation including toad rush (*Juncus bufonius*), Mexican rush (*Juncus mexicanus*), manna grass (*Glyceria declinata*), and Mediterranean barley (*Hordeum marinium* ssp. *gussoneanum*) with scattered upland plants such as Italian thistle (*Carduus pycnocephalus*), curly dock (*Rumex crispus*), and slender wild oat (*Avena barbata*). This habitat type is present in approximately seven Work Areas.

[3] Throughout this document, the term "project area" refers to all Work Areas and access routes collectively.

Non-native Grassland

Non-native annual brome grasslands occur throughout the project area. This vegetation type most closely corresponds to the *Manual of California Vegetation* (Sawyer, et al., 2009) California Annual Grassland vegetation series (i.e., plant community). California Annual Grassland is typically found on seasonally dry hillsides and valleys in the Central Valley, interior valleys of the Coast Ranges, and along the coast of central and southern California as well as some of the off-shore islands.

These grasslands within the project action area are dominated by non-native grasses, and limited native grasses and forbs. Dominant grass species are ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), slender wild oat, Italian ryegrass (*Festuca perennis*), hare barley (*Hordeum murinum* ssp. *leporinum*), annual fescue (*Vulpia* spp.), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). Patches of weedy non-native annual and perennial forbs include summer mustard (*Hirschfeldia incana*), yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pyno-cephalus*), black mustard (*Brassica nigra*), rose clover (*Trifolium hirtum*), wild fennel (*Foeniculum vulgare*), curly dock (*Rumex crispus*), mallow (*Malva* sp.), milk thistle (*Silybum marianum*), broadleaf filaree (*Erodium botrys*), and bur-clover (*Medicago polymorpha*).

The majority of the grasslands located in the project area are actively grazed by cattle; in these areas the annual grasses were largely unidentifiable during the surveys. Much of this area is considered suitable upland refugia habitat for California tiger salamander and California red-legged frog however, this habitat type is also mapped adjacent to roads and other developed areas that provide low-quality habitat.

Non-native grasslands are present at approximately 42 Work Areas, 1 staging area, 10 turnaround areas, and along all overland access routes.

Riparian Woodland Upland

Riparian woodland upland vegetation type most closely corresponds to the *Manual of California Vegetation* (Sawyer, et al., 2009) California walnut vegetation series. California walnut series is typically found on rarely flooded, north-facing slopes, from the Pacific Ocean to the west and Mexico to the south, as well as on the Channel Islands.

Riparian woodland in the project area consists of a semi-natural riparian woodland with Hind's walnut (*Juglans hindsii)* or its hybrids occupying the canopy with a variety of understory trees and shrubs. This vegetation type forms a corridor around creek channels and consists of a mix of tall, dense, winter-deciduous broadleaved species and evergreen species dominated by Hind's walnut and an understory dominated by sandbar willow (*Salix exigua*). Other vegetation within the riparian woodland upland includes coast live oak (*Quercus agrifolia*), valley oak, California buckeye (*Aesculus californica*), and an associated understory of riparian shrubs consisting of blue elderberry (*Sambucus nigra* ssp. *caerulea*), arroyo willow, sandbar willow, coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), wild fennel, and Himalayan blackberry (*Rubus armeniacus*).

This habitat type is present in Work Areas associated with retirement Sites 7/7A, 19A, 37A and at two aboveground feature locations.

Ruderal

Vegetation that occurs in areas where the natural vegetation has been removed or significantly degraded by past or current human activity is referred to as ruderal. Ruderal vegetation is generally composed of non-native, seasonal species. This type of vegetation is often associated with vacant lots, roadsides, and other highly disturbed areas. Vegetation in these areas is highly variable but often includes a mix of non-native annual grasses such as ripgut brome, soft chess (*Bromus hordeaceous)*, wild oat, Italian ryegrass (*Lolium multiflorum*), smooth barley (*Hordeum murinum),* and weedy forbs such as bur clover (*Medicago polymorpha*), redstem filaree (*Erodium cicutarium*), yellow star thistle (*Centaurea melitensis)*, Italian thistle (*Carduus pycnocephalus),* milk thistle (*Silybum marianum*), Russian thistle (*Salsola tragus*), and many others. Because of the highly variable nature of ruderal habitats, this plant community was not classified according to Sawyer, et al. (2009).

Ruderal habitat occurs at ten aboveground feature locations.

Sycamore Alluvial Woodland

This vegetation type aligns with California sycamore woodlands and is typically associated with gullies, intermittent streams, springs, seeps, stream banks and terraces adjacent to floodplains that are subject to high intensity flooding (Sawyer, et al., 2009). Typical co-dominant species include Fremont cottonwood, coast live oak, arroyo willow, and California bay.

Sycamore alluvial woodlands are mapped in the retirement Site 17 Work Areas, a portion of one overland access route to the retirement Site 17 Work Area, and at one aboveground feature location near retirement Site 17. No trees associated with this vegetation type are located within the work areas.

Upland Swale

Upland swales are depressions or hollows where runoff from the surrounding uplands accumulates. Swales that yield channel flow are important sources of water, sediment, nutrients, and other materials during rainstorms and are integral parts of streams, and therefore are under the jurisdiction of CDFW. Swales here are characterized by upland vegetation, including slender wild oat, ripgut brome, hare barley, and black mustard. Upland swales may convey water for periods during some years for sufficient frequency or duration to possess small amounts of wetland vegetation, although little of it is present at the project sites. This vegetation type is located at approximately ten Work Areas.

Valley Oak Savanna

Valley oak savanna vegetation type most closely corresponds to *Manual of California Vegetation* (Sawyer, et al., 2009) valley oak vegetation series. Valley oak series is typically found on valley bottoms and gentle slopes within cismontane California, which is designated as the area west of the Cascade-Sierra Nevada-Peninsular range crest.

Valley oak savanna is present in Work Areas associated with retirement Sites 28, 29/29A, and 38. Impacts at these locations will be restricted to the non-native grassland understory, and no trees will be affected.

Wetland Swale

Wetland swales are concave linear features in the landscape that are inundated or saturated for a sufficient frequency or duration to possess wetland vegetation and, therefore, may be under the regulatory jurisdiction of USACE, RWQCB, and CDFW. Associated vegetation includes California loosestrife (*Lythrum californicum*), pale smartweed (*Persicaria lapathifolia*), and quack grass (*Elymus repens*). This vegetation type is located in approximately one Work Area.

Willow Scrub Wetland

Willow scrub wetland is present at a portion of the Work Area in an unnamed tributary to Vallecitos Creek. A defined channel and relatively dense growth of arroyo willow with associated Himalayan blackberry but no notable herbaceous understory characterizes this area. Willow scrub wetland is present in the Work Area at retirement Site 37A.

Wetlands, Waters, and Riparian Areas

Nine CDFW-jurisdictional features, including one feature with USACE-jurisdiction, have been identified in the project footprint.

At Work Areas 2-3, the unnamed tributary to Arroyo Mocho is a wide shallow drainage through oak woodland and grassland habitat. The channel within the project area has a distinct gravel bed, and is surrounded by annual grassland species, such as slender wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), hare barley (*Hordeum murinum*), Italian thistle (*Carduus pycnocephalus*), wild radish (*Raphanus sativus*), and fiddleneck (*Amsinckia menziesii*). Upstream and south of the project site, the drainage has cut into the banks, causing some erosion. On the west side of the drainage, one small oak tree is within the project area, as well as a mature blue oak (*Quercus douglasii*) adjacent to the project area.

At Work Areas 6-7, the unnamed tributary to Arroyo Mocho is a deeply incised creek with aquatic vegetation and flowing water present at the time of the delineation on April 18, 2014. Scattered wetland plants, including water cress (*Rorippa* sp.), narrow-leaf cattail (*Typha angustifolia*), rabbitsfoot grass (*Polypogon monspeliensis*), and duck weed (*Lemna* sp.) were present along the channel bed below the pipeline span. The average bed width is 7 feet and the

steep-sided bank heights average about 5 feet. Trees and shrubs along the upper slopes of the drainage include valley oak (*Quercus lobata*), blue oak, and poison oak (*Toxicodendron diversilobum*). This channel eventually becomes a shallow wetland swale that parallels a paved driveway and dirt farm road.

At Work Areas 14-15, the unnamed tributary to Arroyo Valle is an agricultural drainage within a vineyard that receives flow from a swale on the west side of Arroyo Road and terminates in a larger open channel near a clump of oak trees in an uncultivated part of the vineyard. The drainage is deeply eroded with steep sides (5 to 6 feet high) and a 12 to 18 inch wide scour channel along the bottom of the feature. Vegetation within the channel is comprised of grassland species including slender wild oat, rip-gut brome, filaree (*Erodium botrys*), and Italian thistle.

At Work Areas 21-22, the unnamed tributary to Arroyo Valle is a broad drainage with discernible bank and bed. Vegetation in this area is characterized by grasses and forbs including soft chess (*Bromus hordeaceus*), black mustard (*Brassica nigra*), Italian thistle, filaree (*Erodium* sp.), and foxtail barley (*Hordeum jubatum*).

At Work Areas 24-25, the unnamed tributary to San Antonio Reservoir is a seasonal drainage with seasonally-saturated soils. Vegetation below the pipeline span includes wetland species such as toad rush (Juncus bufonius), Mexican rush (*Juncus mexicanus*), manna grass (*Glyceria* sp.), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). Other vegetation present in this area includes scattered Italian thistle, curly dock (*Rumex crispus*), and slender wild oat.

At Work Areas 26-27, the unnamed tributary to San Antonio Reservoir is a seasonal drainage with evidence of scouring and ephemeral flow at a 24-inch diameter culvert upslope of the exposed pipeline span. Vegetation in the direct Work Area is characterized by grassland species, including rip-gut brome, soft chess, Italian thistle, and cut leaf geranium (*Geranium dissectum*). A small area upslope of the pipeline span contains wetland plants including Mediterranean barley and Mexican rush.

At Work Areas 28-29, an unnamed tributary to San Antonio Reservoir is a shallow drainage with defined bed and bank. It receives water from a roadside relief ditch. Adjacent vegetation includes species such as soft chess, rip-gut brome, filaree, Mediterranean barley, mustard and Italian thistle. A large oak tree is present downstream from the pipeline span adjacent to the Work Area.

At Work Areas 31-32, there is a tributary system to Vallecitos Creek deeply incised by headcutting into upland swales. Vegetation associated with this feature is characterized by grasses and forbs such as slender wild oat, rip-gut brome, hare barley and black mustard. Cattails are seasonally present in the small, head cut drainage just east of the exposed section of pipe.

At Work Area 37A, there is a defined unnamed tributary channel to Vallecitos Creek immediately downgradient of an abandoned culverted crossing. At the time of PG&E's wetland delineation, no inundation or saturation was present; however, loamy soils were moist. Based on the presence of scouring, the channel is approximately 50 feet wide at bank-full stage. The channel in the Work Area is dominated by California loosestrife (*Lythrum californicum*). A riparian area downstream of the proposed excavation is characterized by a relatively dense growth of arroyo willow with associated valley oak and a sparse understory consisting of elderberry (*Sambucus nigra* ssp. *cerulea*), Himalayan blackberry, and Italian thistle.

There is an unnamed stream with headwaters in the project area, but outside the project footprint, that is the southernmost stream in the 19,236-acre Arroyo de la Laguna watershed (HUC 180500040503), beginning above the San Antonio Reservoir approximately 1.5 miles east of Work Area 37A. The estimated local watershed for this stream is approximately 900 acres. From the project area, the unnamed stream continues to flow west approximately 0.95 mile to the confluence with Vallecitos Creek, which is a tributary to Alameda Creek via Arroyo de la Laguna. This channel is also under the jurisdiction of USACE.

Special-status Species

Results of the CNDDB, USFWS, and CNPS searches are presented in Table 3.4-2. Of the 103 species considered, 26 were identified during the background research to have a low, moderate, or high potential to occur in or near the Work Area. These include 11 plant, 3 amphibian, 2 reptilian, 7 avian, and 3 mammalian species. The remaining 77 species were determined to have no potential to occur in the project area.

Special-status Plants

Based on queries of the USFWS, CDFW, and CNPS databases, 59 federal-, state-, or CNPS-listed plant species were identified with potential to occur within 5 miles of the project area (Table 3.4-2). However, reconnaissance-level field surveys confirmed that suitable habitat for 48 of these plant species was not present in the project area and 11 plant species have the potential to occur in the project area.

Of the 11 plant species with potential to occur, 10 have no reported occurrences within 5 miles of the project area and, therefore, have a low potential to occur. The remaining species — caper-fruited tropidocarpum (*Tropidocarpum capparideum*) (ranked CNPS 1B.1 and seriously threatened in California) — has a single occurrence within 5 miles of the project area (Occurrence 11, 1897). This occurrence was reported in 1897 "by the railroad east of Livermore" and, therefore, has a low accuracy occurrence radius of 5 miles that partially intersects a 5-mile buffer of the project area. Therefore, this species is also believed to have a low potential to occur in the project area.

Focused surveys in Work Areas containing potentially suitable habitat for the 11 species with low potential to occur within the project area were conducted in April and July 2016 within the blooming period for the target special-status plant species. No special-status plants were observed during focused surveys.

Special-status Wildlife

This section presents the results of wildlife habitat assessments and surveys. Information provided in this section is based on the surveys conducted by PG&E in 2014 (GANDA, 2014).

As indicated in Table 3.4-2, 22 federal- or state-listed animals were reviewed for their potential to occur within the project area (GANDA, 2014). Reconnaissance surveys established that there is no available suitable habitat in the study area for 19 listed species, including vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynchi*), longhorn fairy shrimp (*Branchinecta longiantenna*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), bald eagle (*Haliaeetus leucocephalus*), Swainson's hawk, (*Buteo swainsoni*) bank swallow (Riparia *riparia*), or San Joaquin kit fox (*Vulpes macrotis mutica*) (GANDA, 2014).

Low potential exists for seven California Species of Special Concern to be present in the project area, including western spadefoot (*Spea hammondii*), coast horned lizard (*Phrynosoma blainvillii*), northern harrier (*Circus cyaneus*), song sparrow (Modesto population, *Melospiza melodia*), townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), and American badger (*Taxidea taxus*).

One Fully Protected Species, white-tailed kite (*Elanus leucurus*), has moderate potential to nest and forage in the project area. Two additional Fully Protected Species, golden eagle (*Aquila chrysaetos*) and American peregrine falcon (*Falco peregrinus anatum*), have moderate potential to forage in the project area. Alameda whipsnake (*Masticophis lateralis euryxanthus*), a federal- and state-threatened species, has moderate potential to occasionally or infrequently use portions of the project area, primarily for dispersal. Tricolored blackbird, a candidate for state listing as threatened, also has moderate potential to occur, although no colonies have been identified in the project area or immediate vicinity as of April 2016 (ICE, 2016). An incidental take permit is not being sought by PG&E for Alameda whipsnake or tricolored blackbird.

Based on queries of the USFWS and CDFW databases, reported observations in the project area, and the wildlife habitat assessment conducted during the reconnaissance field survey, two federal- or state-listed animal species, California tiger salamander and California red-legged frog, were determined to have a high potential to occur within the project area. For one California Species of Special Concern, burrowing owl (*Athene cunicularia*), Work Areas 23-48 were documented in the NDDB to be more than 5 miles from any reported occurrence, and a single area (WA 1) was documented to be 1 mile away. All of these areas have suitable foraging and nesting habitat, and the potential for occurrence of this species within these project areas is high.

These species are discussed in detail below.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Plants						
Bryophytes						
Triquetrella californica	coastal triquetrella	None	None	1B.2	Coastal bluff scrub, coastal scrub valley and foothill grasslands. Grows within 30 meters from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 10-100 meter elevation.	None. The project is located more than 50 miles from the coast. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Monocots						
Liliaceae						
Fritillaria falcata	talus fritillary	None	None	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. On shale, granite, or serpentine talus. 300-1,525 meter elevation. Blooms March-May.	None. Chaparral, cismontane woodland, and lower montane coniferous forest habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Calochortus pulchellus	Mt. Diablo fairy-lantern	None	None	1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 200-800 meter elevation. Blooms April-June.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Fritillaria liliacea	fragrant fritillary	None	None	1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine; various soils reported though usually clay, in grassland. 3-410 meter elevation. Blooms February-April.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Potamogetonaceae						
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	None	None	2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 300-2,150 meter elevation. Blooms May-July.	None. Marsh and swamp habitat required by this species is not present, and the project is below the elevation range of this species. There is one CNDDB occurrence within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Dicots						
Apiaceae						
Eryngium spinosepalum	spiny-sepaled button-celery	None	None	1B.2	Vernal pools, valley and foothill grassland. Some sites on clay soil of granitic origin; vernal pools, within grassland. 80-255 meter elevation. Blooms April-May.	None. Vernal pool habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Asteraceae						
Balsamorhiza macrolepis	big-scale balsamroot	None	None	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 90-1,555 meter elevation. Blooms March-June.	Low potential to occur. Grasslands are present in the project area. There is one CNDDB occurrence within 5 miles of the project footprint, reported as extirpated.
Blepharizonia plumosa	big tarplant	None	None	1B.1	Valley and foothill grassland. Dry hills and plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 30-505 meter elevation. Blooms July-October.	Low potential to occur. Grasslands are present in the project area; There are no reported occurrences within 5 miles of the project.
Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None	1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 1-230 meter elevation. Blooms May-November.	None. Alkaline soils are not present in the project area. The nearest reported occurrence is 0.5 mile south of Work Areas 46-48.
Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	None	None	1B.2	Cismontane woodland, chaparral, valley and foothill grassland. In seasonal and perennial drainages on serpentine. 95-890 meter elevation. Blooms February-October.	Low potential to occur. Grasslands are present in the project area. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Deinandra bacigalupii	Livermore tarplant	None	CAN	1B.2	Meadows and seeps. Alkaline meadows. 150-185 meter elevation. Blooms June-October.	None. Alkaline meadow habitat required by this species is not present. There are four CNDDB reported occurrences within 5 miles of the project footprint.
Helianthella castanea	Diablo helianthella	None	None	1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 25-1,150 meter elevation. Blooms March-June.	Low potential to occur. Grasslands are present in the project area. There are no CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Holocarpha macradenia	Santa Cruz tarplant	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with non-natives. 10-220 meter elevation. Blooms June-October.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Lasthenia conjugens	Contra Costa goldfields	FE	None	1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-470 meter elevation. Blooms March-June.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There is one CNDDB reported occurrence within 5 miles of the project footprint.
Leptosyne hamiltonii	Mt. Hamilton coreopsis	None	None	1B.2	Cismontane woodland. On steep shale talus with open southwestern exposure. 530-1,300 meter elevation. Blooms March-May.	None. Steep shale talus habitat required by this species is not present, and the project is below the elevation range of this species. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Madia radiata	showy golden madia	None	None	1B.1	Valley and foothill grassland, cismontane woodland, chenopod scrub. Mostly on adobe clay in grassland or among shrubs. 25-1,125 meter elevation. Blooms March-May.	Low potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project.
Monolopia gracilens	woodland woollythreads	None	None	1B.2	Chaparral, valley and foothill grasslands (serpentine), cismontane woodland, broadleafed upland forests, north coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 100-1,200 meter elevation. Blooms February-July.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Senecio aphanactis	chaparral ragwort	None	None	1B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 15-800 meter elevation. Blooms January-April.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Boraginaceae						
Amsinckia grandiflora	large-flowered fiddleneck	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 275-550 meter elevation. Blooms March-May.	Low Potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project, and the project is below the elevation range of this species.
Plagiobothrys glaber	hairless popcornflower	None	None	1A	Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-180 meter elevation. Blooms March-May.	None. Coastal salt marsh and alkaline meadow habitat required by this species is not present. There is one CNDDB reported occurrence within 5 miles of the project footprint, reported as possibly extirpated.
Brassicaceae						
Boechera rubicundula	Mount Day rockcress	None	None	1B.1	Chaparral. Rocky slopes. 1,200 meter elevation. Blooms April-May.	None. Rocky slope habitat required by this species is not present, and the project is below the elevation range of this species.
Caulanthus lemmonii	Lemmon's jewelflower	None	None	1B.2	Pinyon-juniper woodland, valley and foothill grassland. 80-1,220 meter elevation. Blooms March-May.	Low potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project.
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	None	None	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 120-730 meter elevation. Blooms March-October.	None. Serpentine soils required by this species are not present. There are three CNDDB reported occurrences within 5 miles of the project footprint.
Streptanthus hispidus	Mt. Diablo jewelflower	None	None	1B.3	Valley and foothill grassland, chaparral. Talus or rocky outcrops. 365-1,200 meter elevation. Blooms March-June.	None. Talus or rocky outcrop habitat required by this species is not present, and the project is below the elevation range of this species. There are no CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None	1B.1	Valley and foothill grassland. Alkaline clay. 1-455 meter elevation. Blooms March-April.	Low potential to occur. Grasslands are present in the project area and the CNDDB reports one presumed extant occurrence that overlaps with the east end of the project. This occurrence was reported in 1897 and has a low accuracy radius of 5 miles.
Campanulaceae						
Campanula exigua	chaparral harebell	None	None	1B.2	Chaparral. Rocky sites, usually on serpentine in chaparral. 275-1,250 meter elevation. Blooms May-June.	None. Rocky, serpentine chaparral habitat required by this species is not present, and the project is below the elevation range of this species. There is one CNDDB reported occurrence within 5 miles of the project footprint.
Legenere limosa	legenere	None	None	1B.1	Vernal pools. In beds of vernal pools. 1-880 meter elevation. Blooms April-June.	None. Vernal pool habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Caprifoliaceae						
Viburnum ellipticum	oval-leaved viburnum	None	None	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1,400 meter elevation. Blooms May-June.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Chenopodiaceae						
Atriplex cordulata var. cordulata	heartscale	None	None	1B.2	Chenopod scrub, valley and foothill grassland, meadows. Alkaline flats and scalds in the Central Valley, sandy soils. 0-560 meter elevation. Blooms April-October.	None. Alkaline soils required by this species are not present. There are two CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Atriplex depressa	brittlescale	None	None	1B.2	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 1-320 meter elevation. Blooms April-October.	None. Alkaline soils required by this species are not present. There are four CNDDB reported occurrences within 5 miles of the project footprint.
Atriplex joaquinana	San Joaquin spearscale	None	None	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia. 1-835 meter elevation. Blooms April-October.	None. Alkaline soils required by this species are not present. There are four CNDDB reported occurrences within 5 miles of the project footprint.
Atriplex minuscula	lesser saltscale	None	None	1B.1	Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy, alkaline soils. 20-100 meter elevation. Blooms May-October.	None. Alkaline soils required by this species are not present. There are three CNDDB reported occurrences within 5 miles of the project footprint..
Suaeda californica	California seablite	FE	None	1B.1	Marshes and swamps. Margins of coastal salt marshes. 0-15 meter elevation. Blooms July-October.	None. Coastal salt marsh habitat required by this species is not present. There is one CNDDB reported occurrences within 5 miles of the project footprint, reported as possibly extirpated..
Ericaceae						
Arctostaphylos auriculata	Mt. Diablo manzanita	None	None	1B.3	Chaparral. In canyons and on slopes. On sandstone. 120-500 meter elevation. Blooms January-March.	None. Chaparral habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	None	None	1B.2	Chaparral. Rocky slopes. 500-1,100 meter elevation. Blooms January-April.	None. Rocky slope habitat required by this species is not present, and the project is below the elevation range of this species. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Fabaceae						
Astragalus tener var. tener	alkali milk-vetch	None	None	1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 1-170 meter elevation. Blooms March-June.	None. Alkaline soils required by this species are not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Hoita strobilina	Loma Prieta hoita	None	None	1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. Blooms May-October.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Trifolium hydrophilum	saline clover	None	None	1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300 meter elevation. Blooms April-June.	None. Alkaline soils required by this species are not present. There is one CNDDB reported occurrence within 5 miles of the project footprint.
Geraniaceae						
California macrophylla	round-leaved filaree	None	None	1B.1	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1,200 meter elevation. Blooms March-May.	Low potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project.
Hydrophyllaceae						
Phacelia phacelioides	Mt. Diablo phacelia	None	None	1B.2	Chaparral, cismontane woodland. Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. 500-1,370 meter elevation. Blooms April-May.	None. Rock outcrop and talus slope habitat required by this species is not present, and the project is below the elevation range of this species. The CNPS does not report this species from Alameda County, and there are no CNDDB reported occurrences within 5 miles of the project footprint.
Linaceae						
Hesperolinon breweri	Brewer's western flax	None	None	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. 30-885 meter elevation. Blooms May-July.	None. Serpentine soils preferred by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Malvaceae						
Malacothamnus arcuatus	arcuate bush-mallow	None	None	1B.2	Chaparral, cismontane woodland. Gravelly alluvium. 15-355 meter elevation. Blooms April-September.	None. The project area is not within the current reported range of this species. The CNPS does not report this species from Alameda County, and there are no CNDDB reported occurrences within 5 miles of the project footprint.
Malacothamnus hallii	Hall's bush-mallow	None	None	1B.2	Chaparral. Some populations on serpentine. 10-550 meter elevation. Blooms May-October.	None. Chaparral habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Orobanchaceae						
Chloropyron molle ssp. hispidum	hispid salty bird's-beak	None	None	1B.1	Meadows and seeps, playas, valley and foothill grassland. In damp alkaline soils, especially in alkaline meadows and alkali sinks with Distichlis. 1-155 meter elevation. Blooms June-September.	None. Alkaline soils required by this species are not present. There is one CNDDB reported occurrence within 5 miles of the project footprint.
Chloropyron palmatum	palmate-bracted salty bird's-beak	FE	SE	1B.1	Chenopod scrub, valley and foothill grassland. Usually on Pescadero silty clay which is alkaline, with Distichlis, Frankenia. 5-155 meter elevation. Blooms May-October.	None. Alkaline soils required by this species are not present. There is one CNDDB reported occurrences within 5 miles of the project footprint.
Papaveraceae						
Eschscholzia rhombipetala	diamond-petaled California poppy	None	None	1B.1	Valley and foothill grassland. Alkaline, clay slopes and flats. 0-975 meter elevation. Blooms March-April.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.
Polemoniaceae						
Navarretia nigelliformis ssp. radians	shining navarretia	None	None	1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. 200-1,000 meter elevation. Blooms April-July.	Low potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Navarretia prostrata	prostrate vernal pool navarretia	None	None	1B.1	Coastal scrub, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. 15-700 meter elevation. Blooms April-July.	None. Alkaline soils required by this species are not present. There is one CNDDB reported occurrence within 5 miles of the project footprint.
Polemonium carneum	Oregon polemonium	None	None	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-1,830 meter elevation. Blooms April-September.	None. Coastal prairie, coastal scrub, and lower montane coniferous forest habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Polygonaceae						
Chorizanthe robusta var. robusta	robust spineflower	FE	None	1B.1	Cismontane woodland, coastal dunes, coastal scrub. Sandy terraces and bluffs or in loose sand. 3-120 meter elevation. Blooms April-September.	None. Sandy terrace and bluffs or loose sand habitat required by this species is not present. There are no CNDDB reported occurrences within 5 miles of the project footprint.
Eriogonum truncatum	Mt. Diablo buckwheat	None	None	1B.1	Chaparral, coastal scrub, valley and foothill grassland. Dry, exposed clay or sandy substrates. 3-350 meter elevation. Blooms April-December.	Low potential to occur. Grasslands are present in the project area. There are no reported occurrences within 5 miles of the project.
Delphinium californicum ssp. interius	Hospital Canyon larkspur	None	None	1B.2	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1,095 meter elevation. Blooms April-June.	None. Wet meadow, chaparral, and canyon habitat required by this species is not present. There are six CNDDB reported occurrences within 5 miles of the project footprint, primarily in steep, higher elevation canyons to the south
Ranunculaceae						
Delphinium recurvatum	recurved larkspur	None	None	1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. 3-685 meter elevation. Blooms March-June.	None. The CNPS reports this species in Alameda County, but not from the project USGS quadrangles (Altamont, Livermore, Niles, and La Costa Valley). There are no CNDDB reported occurrences within 5 miles of the project footprint.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Animals						
Crustaceans						
Lepidurus packardi	vernal pool tadpole shrimp	FE	None		Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	None. Vernal pool habitat required by this species is not present
Branchinecta lynchi	vernal pool fairy shrimp	FT	None		Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear water depressions in sandstone pools and grassed swale; earth slump; or basalt-flow depression pools.	None. Vernal pool habitat required by this species is not present
Branchinecta longiantenna	longhorn fairy shrimp	FE	None		Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	None. Vernal pool habitat required by this species is not present.
Insects						
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	None		Occurs only in the central valley of California, in association with blue elderberry (*Sambucus mexicana*). Prefers to lay eggs in elderberrries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	None. The project area is beyond the current range of this species. There are no CNDDB reported occurrences within 5 miles of the project..
Amphibians						
Rana draytonii	California red-legged frog	FT	SSC		Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	High potential to occur. Upland aestivation habitat is present in all non-native annual grassland, riparian woodland upland, and valley oak savanna habitats within the project area. The CNDDB reports one presumed extant occurrence that overlaps with the retirement Work Areas 19 and 20.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Ambystoma californiense	California tiger salamander	FT	ST		Need underground refuges, often ground squirrel burrows within grasslands, and vernal pools or other seasonal water sources for breeding.	High potential to occur. Upland aestivation habitat is present in all non-native annual grassland, riparian woodland upland, and valley oak savanna habitats within the project area. The CNDDB reports one occurrence within Work Areas 31 and 32.
Spea hammondii	western spadefoot	None	SSC		Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg laying.	Low potential to occur. Annual grassland is present and the CNDDB reports two occurrences within 5 miles of the project; however, no vernal pools are present in the project area.
Rana boylii	foothill yellow-legged frog	None	SSC		Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg laying. Need at least 15 weeks to attain metamorphosis.	None. Shallow streams and riffles with a rocky substrate is not present.
Reptiles						
Masticophis flagellum ruddocki	San Joaquin whipsnake	None	SSC		Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	None. There is one reported occurrence within 5 miles of the project area northwest of Work Area 1. Work Area 1 and other sites in the Coast Range are west of this species current reported range.
Emys marmorata	western pond turtle	None	SSC		A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg laying.	None. Aquatic habitat required by this species is not present.
Masticophis lateralis euryxanthus	Alameda whipsnake	FT	ST		Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	Moderate potential to occur. Portions of the project area are located within or near areas that could support infrequent or occasional use by this species. CNDDB reports 6 occurrences within 5 miles of the project.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Phrynosoma blainvillii	coast horned lizard	None	SSC		Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Low potential to occur. Suitable habitat is present, and there is one reported occurrence within 5 miles of the project area.
Anniella pulchra	silvery legless lizard	None	SSC		Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	None. Sandy or loose soil habitat required by this species is not present. There are no reported occurrences within 5 miles of the project area.
Birds						
Accipitriformes						
Elanus leucurus	white-tailed kite	None	FP		Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Moderate potential to occur. All non-native grasslands in the project area provide suitable foraging habitat. The CNDDB reports two presumed extant occurrences within 5 miles of the project area both approximately 2.5 miles northeast of Work Area 1.
Haliaeetus leucocephalus	bald eagle	D	SE, FP		Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	None. Ocean shore, lake margin, and river habitat required by this species is not present. There is one reported occurrence within 5 miles of the project area.
Circus cyaneus	northern harrier	None	SSC		Coastal salt- and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienegas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Low potential to occur. Suitable habitat is present; however, there are no reported occurrences within 5 miles of the project area.
Buteo swainsoni	Swainson's hawk	None	ST		Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	None. Suitable foraging habitat is present; however, the project area is outside the normal range for this species and there are no reported occurrences within 5 miles of the project area.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Aquila chrysaetos	golden eagle	None	FP		Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Moderate potential to occur. The project area includes non-native grasslands that provide suitable foraging habitat. The CNDDB reports four presumed extant occurrences within 5 miles of the project area, the nearest approximately 0.5 mile south of Work Area 29/29A.
Strigiformes						
Athene cunicularia	burrowing owl	None	SSC		Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent on burrowing mammals, most notably, the California ground squirrel.	High potential to occur. The project area includes suitable foraging and nesting habitat. The CNDDB reports 23 presumed extant occurrences within 5 miles of the project area. The nearest occurrence is approximately 1 mile to the northeast of retirement Work Area 1. Work Areas 23-48 are more than 5 miles from any reported occurrence.
Falconiformes						
Falco peregrinus anatum	American peregrine falcon	D	D, FP		Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Moderate potential to occur. The project area includes suitable foraging habitat. The CNDDB reports two presumed extant occurrences with suppressed location information in the La Costa Valley quadrangle collocated with Work Areas 21-44, 60, and the L-131 valve replacement Vallecitos Road Work Area
Passeriformes						
Lanius ludovicianus	loggerhead shrike	None	SSC		Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	None. Dense shrub and brush nesting habitat required by this species is not present. There is one reported occurrence within 5 miles of the project area.
Riparia	bank swallow	None	ST		Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None. Vertical banks/cliffs habitat required by this species is not present. There are no reported occurrences within 5 miles of the project area.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	SSC		Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	None. Marsh habitat required by this species is not present. There are no reported occurrences within 5 miles of the project area.
Dendroica petechia brewsteri	yellow warbler	None	SSC		Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Low potential to occur. There is one reported occurrence in Alameda County but no reported occurrences within 5 miles of the project. Suitable nesting habitat is present near work areas 16, 17 and 37A; however, no trees will be removed at these locations
Melospiza melodia	song sparrow ("Modesto" population)	None	SSC		Largely undescribed but likely to include emergent freshwater marsh and riparian woodland.	Low potential to occur. Suitable habitat may be present in the project area. There is one reported occurrence reported in the CNDDB that is partly within 5 miles of the project area. This occurrence was reported in 1919 and has a low accuracy radius of 1 mile.
Melospiza melodia pusillula	Alameda song sparrow	None	SSC		Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	None. Salt marsh habitat required by this species is not present. There are no reported occurrences within 5 miles of the project area.
Agelaius tricolor	tricolored blackbird	None	CAN: SE (Dec. 2015)		Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Moderate potential to occur. Two tricolored blackbird colonies with population estimates between 150 and 4000 birds have been recorded within 0.5 to 1 miles south of Work Areas 41 – 46 in 1997 to 1999. These were in active quarry areas. Intermittent surveys of these areas between 2000 and 2014 have not shown occurrence.

Table 3.4-2. Federal-, State-, and CNPS Rare Plant Ranks Identified from CNDDB, USFWS, and CNPS Records Searches

Scientific Name	Common Name	Status			Habitat	Potential for Occurrence in Project Areas
		Federal	State	CNPS Rank		
Mammals						
Antrozous pallidus	pallid bat	None	SSC		Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low potential to occur. Rocky outcrop, cliff, and crevice roosting habitats preferred by this species is not present. However, trees that may be removed at work areas 2-3 may provide suitable roosting habitat. There are two reported occurrences within 5 miles of the project area.
Eumops perotis californicus	western mastiff bat	None	SSC		Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Low potential to occur. Marginally suitable woodland habitat is present in the project area. There are no reported occurrences within 5 miles of the project area.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None	SSC		Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	None. Forested habitat with a moderate to dense understory required by this species is not present. There is one reported occurrence within 5 miles of the project area.
Vulpes macrotis mutica	San Joaquin kit fox	FE	ST		Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	None. The CNDDB reports one presumed extant occurrence from 1989 approximately 4.6 miles east of the project area; however, this occurrence is west of core and satellite populations and linkage areas. The project area is not within the current range of this species.
Corynorhinus townsendii	Townsend's big-eared bat	None	CAN, SSC		Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Low potential to occur. Marginally suitable woodland habitat is present in the project area. The CNDDB reports four presumed extant occurrences within 5 miles of the project area.
Taxidea taxus	American badger	None	SSC		Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Low potential to occur. Suitable habitat is present, and the CNDDB reports one presumed extant occurrence approximately 4.3 miles east of the project area.

Notes:
ppt = part(s) per trillion
Federal Designations: (E) = Federally endangered, (T) = Federally Threatened, (D) = Delisted
State Designations: (E) = State Endangered, (T) = State Threatened, (CAN) = Candidate, (D) = Delisted, (SSC) = Species of Special Concern, (FP) - Fully Protected Species

CNPS California Rare Plant Rank: (1A) = Presumed extinct in California; (1B) = Rare, threatened, or endangered in California and elsewhere; (2) = Rare, threatened, or endangered in California, but more common elsewhere; (3) = More information is needed; (4) = Limited distribution, watch list
Threat Rank: 0.1 = Seriously threatened in California (more than 80 percent of occurrences threatened / high degree and immediacy of threat), 0.2 = Fairly threatened in California (20 to 80 percent occurrences threatened / moderate degree and immediacy of threat), 0.3 = Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known.

California Tiger Salamander

California tiger salamander is listed as both federally and state threatened. Critical habitat was designated by the USFWS in 2005. California tiger salamander is strongly associated with annual grassland habitat but it also occurs in other habitat types, including oak savanna, the edges of mixed woodlands, and foothill coniferous forests (Stebbins, 2003). Adults spend most of the year in underground retreats, particularly in burrows of California ground squirrels (*Spermophilus beecheyi*) and pocket gopher (*Thomomys bottae*), and occasionally are found in man-made structures. California tiger salamander make seasonal migrations to breeding ponds starting with the onset of fall rains. Seasonal pools are most commonly used but California tiger salamander may also use permanent ponds if bullfrogs and predatory fish are absent. After breeding, California tiger salamander adults return to their upland retreats after a few days or weeks. Juveniles require approximately 10 weeks to metamorphose. Newly metamorphosed juveniles then disperse to upland areas after spending a few hours or days near the edge of aquatic habitats.

Suitable upland aestivation (summer dormancy) habitat is present in small mammal burrows throughout all grassland habitat within the project area. Based on the presence of suitable habitat and the proximity of suitable breeding ponds located outside of the Work Areas, California tiger salamander are presumed to occur in the project area. Much of the project area and the surrounding vicinity provides suitable habitat for California tiger salamander during the nonbreeding season, which generally lasts from late spring to the onset of the next rainy season in the fall. Critical habitat has been designated for California tiger salamander, and the nearest proposed unit is 6 miles to the northwest of Site 1. No FWS-designated critical habitat for California tiger salamander is located within the project area.

California Red-legged Frog

The California red-legged frog is considered a Species of Special Concern by CDFW and is listed as federally threatened (USFWS, 1996). Critical habitat was designated in 2010 (USFWS, 2010). California red-legged frog breeds in wetlands, lakes, ponds, and other still or slow-moving sources of water that remain inundated long enough for larvae to complete metamorphosis, which typically occurs from 11 to 20 weeks after hatching (Storer, 1925). During summer months, California red-legged frog use available aquatic habitats such as springs and plunge pools within seasonal drainages, and may take refuge in rodent burrows and soil crevices within a few hundred feet of aquatic habitats. Adult California red-legged frog tend to be most active at night during wet weather, but they may make forays through upland areas at any time during the year (USFWS, 2002).

Numerous small mammal burrows provide suitable upland refugia for California red-legged frog in the project area. Non-native annual grassland provides suitable upland dispersal habitat, and ephemeral channels provide suitable nonbreeding aquatic dispersal habitat. The presence of these habitats in proximity to reported and suitable breeding habitat suggests a high potential for California red-legged frog to occur in the project area.

Primary constituent elements of designated critical habitat for this species include aquatic breeding habitat, nonbreeding aquatic and riparian habitat, upland habitat, and dispersal habitat. Work Areas 24 through 29/29A would be located within designated Critical Habitat Unit ALA-2.

Alameda Whipsnake

Alameda whipsnake is listed as both federally and state threatened. This species uses the mosaic of habitats found in the East Bay, with the highest frequency of use in and near scrub and chaparral habitats including chamise chaparral, Diablan sage scrub, northern coyote brush scrub, and riparian scrub (Swaim 1994). Swaim (1994) also found that there was extensive use of grassland and oak woodland/savanna adjacent to chaparral and scrub communities by Alameda whipsnake equipped with radio transmitters. The home ranges of six radio-equipped Alameda whipsnake were centered on scrub communities. Core areas of (areas of concentrated use) were on east, south, southeast, southwest-facing slopes with open or partially open canopy scrub or chaparral communities. However, Alameda whipsnake regularly used all aspects and other vegetation types and their home ranges encompassed a wide range of aspects and vegetation types (Swaim 1994). Rock outcrops enhance the habitat for Alameda whipsnake because they provide cover and promote abundant lizard populations. However, rock outcrops are not present in all areas where Alameda whipsnake have been documented. Alameda whipsnake ranged into the surrounding grassland for distances of greater than 500 feet (Swaim 1994). Alameda whipsnake remained in the grassland for periods ranging from a few hours to several weeks at a time (Swaim 1994). Grassland habitats were used by male Alameda whipsnake most extensively during the mating season in spring (Swaim 1994). Female Alameda whipsnake used grassland areas most extensively after mating,

possibly in their search for suitable egg-laying sites (Swaim 1994). Anecdotal information also indicates Alameda whipsnake can be found even greater distances from scrub and chaparral habitats, some observations nearly a mile from scrub in grassland and oak savanna, riparian habitats (Swaim 2000a, 2000b, 2000c, 2003a, 2003b, Alvarez et. al. 2005). The observations long distances outside of scrub are mostly associated with rocky stream corridors with brushy riparian vegetation that provides cover and originates in an area where there is significant/large areas of scrub and chaparral supporting large Alameda whipsnake populations. (Swaim, 2016)

There is moderate potential for Alameda whipsnake to occasionally disperse through the habitat associated with larger capacity watercourses in the project area. Specifically, the Work Areas in or near Arroyo Mocho (Work Areas 1, 2, 3), Arroyo Del Valle (Work Areas 16, 17, 17A), and Alameda Creek (Work Areas 41-44). The other Work Areas are too far from scrub, and located in grassland not associated with a feature (e.g. rocky creek corridor).

Burrowing Owl

Burrowing owl is a California Species of Special Concern. The burrowing owl's nesting habitat consists of open areas with mammal burrows. Habitats include dry open rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub with gullies, washes, arroyos, and edges of human-disturbed lands. They have been known to inhabit golf courses, airports, cemeteries, vacant lots, and road embankments, wherever there is sufficient friable soil for a nesting burrow. Favored nest burrow sites are those in relatively sandy sites (possibly for ease of modification and drainage), areas with low vegetation around the burrows (to facilitate the owl's view and hunting success), holes at the bottom of vertical cuts with a slight downward slope from the entrance, and slightly elevated locations to avoid flooding. In addition to burrows, the owls also require perching locations and frequently use fence posts or the top of mounds outside the burrow. Burrowing owls typically use burrows created by other animals such as prairie dogs, kangaroo rats, ground squirrels — especially burrows constructed by California ground squirrels and kit foxes. Primary threats across the North American range of the burrowing owl are habitat loss and fragmentation primarily due to intensive agricultural and urban development, and habitat degradation due to declines in populations of colonial burrowing mammals. Elimination of burrowing rodents through control programs has been identified as the primary factor in the recent and historical decline of burrowing owl populations (USFWS, 2003). Surveys in California between 1986 and 1991 found population decreases of 23 to 52% in the number of breeding groups and 12 to 27 percent in the number of breeding pairs of owls (Bates, 2006).

There is a high potential for burrowing owl to occur in the project area because of highly suitable breeding and foraging habitat with high densities of rodent burrows in many portions of the project area. The CNDDB has multiple documented occurrences within 5 miles of the project area.

3.4.4 Applicant-proposed Measures

The following APMs will be implemented to minimize the effects of the proposed action on biological resources within the project area. In the event that mitigation measures overlap with APMs, mitigation measures shall supersede.

APM BIO-1: Biological Monitoring. A qualified biologist, with approval from CDFW and USFWS ("approved biologist") will remain onsite during all construction activities in or adjacent to habitat for special-status species. The qualified biologist will observe construction activities and make sure all appropriate protections are in place and permit conditions are followed. The approved biologist shall have the authority to stop any work that may violate permit conditions. If the approved biologist exercises this authority, they shall contact the PG&E project biologist immediately, and PG&E project biologist shall notify the CDFW and USFWS (if appropriate) immediately thereafter. The approved qualified biologist will be the contact for any employee or contractor who might inadvertently kill or injure a special-status species or anyone who finds a dead, injured, or entrapped individual. The approved qualified biologist will possess a working wireless/mobile phone whose number, in addition to the PG&E project biologist's phone number, will be provided to the CDFW and USFWS. Communication between the agencies will be conducted by the PG&E project biologist or PG&E land planner.

APM BIO-2: Worker Education and Training. Prior to construction, a construction employee education program will be conducted in reference to all sensitive environmental resources potentially onsite (e.g., air quality, biological resources, cultural resources, hydrology and water quality, hazardous materials) and the measures associated with their protection (i.e., APMs, MMs, applicable laws and regulations). At a minimum, the program will consist of a brief presentation by persons knowledgeable in the sensitive environmental resources described in the PG&E Gas Line 107 Retirement

and Line 131 Valve Replacement Project IS/MND, and legislative protection to explain concerns to contractors, their employees, and agency personnel involved in the project. For biological resources, the program will include a description of local and special status species and their habitat needs, any reports of occurrences in the Work Area, an explanation of the status of each special-status species and their protection under FESA and CESA, and a list of measures being taken to reduce effects during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species in the Work Areas will be prepared for distribution to the above-mentioned people and anyone else who may enter the Work Area. For all environmental resources, a sign-in sheet for all employees who attend the training sessions will be maintained by PG&E and made available for review by CDFW and/or the USFWS or other agencies on request. Contractor training will be incorporated into construction contracts and will be a component of weekly project meetings.

APM BIO-3: Pre-construction Construction Surveys. Surveys for special-status species (except CTS and CRLF, covered by MM B-1 below) will be performed for one day within 14 days prior to commencing work at each Work Area that contains any wildlife habitat. Surveys will be conducted by CDFW- and USFWS approved biologists. If individuals are found, work will not begin until they are moved out of the Work Area to a CDFW- and USFWS-approved relocation site. If at any point construction activities cease at specific sites for more than 7 days, additional surveys will be conducted prior to the resumption of these actions.

APM BIO-4: Entrapment Avoidance. To prevent the accidental entrapment of wildlife during construction, all excavated holes or trenches deeper than 6 inches will be covered at the end of each work day with plywood or similar materials. Larger excavations that cannot easily be covered will be ramped at the end of the work day to allow trapped animals an escape method. Ramps for open excavations will be soil and/or rough plank ramps with a maximum 45-degree angle, and will be installed at intervals prescribed by a qualified biologist. Trenches will be backfilled as soon as possible. Construction personnel will inspect open holes and trenches in the morning and evening for trapped wildlife. In the event that an excavation would be left unattended for a period of more than 24 hours, metal or wooden covering shall be placed over the excavation prior to the departure of the biological monitor in order to completely seal the excavation and prevent longer-term wildlife entrapment, except for larger excavations that cannot easily be covered. Large excavations that cannot be covered must be checked at intervals of no less than 24 hours. Prior to the filling of such excavations, these areas will be thoroughly inspected for special-status species by CDFW- and USFWS-approved biologists. If a trapped animal is observed, construction will cease until the animal has been relocated to an appropriate location.

APM BIO-5: Pipe Storage and Inspection. Pipes, culverts and similar materials, will be stored so as to prevent special-status wildlife species from using these as temporary refuges (i.e., securely capped), and these materials will be inspected each morning for the presence of animals prior to being moved, buried or capped.

APM BIO-6: Prohibited Activities. The following will not be allowed in or near Work Areas for project activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets. When performing work on SFPUC land, PG&E must incorporate the required measures of the SFPUC's Certificate of Completion of the Project Review Process (dated 09/17/14) to ensure conformity with the SFPUC's Alameda Watershed Management Plan.

APM BIO-7: Debris Abatement. All trash and debris within the Work Area will be placed in containers with secure lids before the end of each work day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. Containers will be emptied as necessary to prevent trash overflow onto the site and all rubbish will be disposed of at an appropriate off-site location.

APM BIO-8: Vehicle Parking. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas or areas approved by the biological monitor after determining wildlife or habitat resources would not be adversely affected.

APM BIO-9: Off-road Travel. Off-road vehicle travel will be minimized. If off-road vehicle travel is necessary, it will be confined to the PG&E-designated overland access routes (Figures 2-1 through 2-13 of the PG&E Gas Line 107 Retirement and Line 131 Valve Replacement Project IS/MND).

APM BIO-10: Speed Limits. Vehicles will not exceed a speed limit of 15 mph in undeveloped portions of the workspaces (i.e., overland and dirt roads).

APM BIO-11: Vehicle Washing. Vehicles shall only be washed at designated car washes or contractor yards in established wash stations where wastewater will not enter any receiving waters of the state. The exception to this is washing of vehicles and equipment to remove potentially contaminated soil with soil pathogens, including *Phytophthora spp.* at designated wash stations within the project area (see MM B-5).

APM BIO-12: Night Work Restriction. All construction activities will cease 30 minutes before sunset and will not begin prior to 30 minutes after sunrise. If construction cannot be avoided because of safety or emergency reasons, it shall proceed only for the minimum time necessary to abate the risk to safety or emergency. If standard nighttime construction cannot be avoided, night work will be limited to a maximum of a total of 7 nights at each individual grassland or riparian Work Area. Night work will be limited in extent, duration, and brightness. Prior to commencing night work, PG&E will provide CDFW with notice of where and when work will occur and measures implemented to protect sensitive biological resources. If more than 7 total nights of work are necessary at any Work Area with habitats that support nesting birds or sensitive species, due to requirements in local permits or unforeseen circumstances, additional nights of work will only occur if approved by CDFW. Lighting will be faced downward and will only be used in the immediate workspace. A CDFW- and USFWS-approved biologist will be present during all construction activities in areas with sensitive species habitat including all night work, and will ensure that lighting is used to the minimum extent feasible.

APM BIO-13: Seasonal Work Restriction. Grading and construction will be conducted between April 15 and October 15 to the extent possible. Should work need to be extended beyond October 15, PG&E will request authorization from the USFWS and CDFW at least 30 days prior of the date of the proposed extension, for intervals of up to 1 week. Work will only be conducted in accordance with CDFW and USFWS approval.

APM BIO-14: Containment and Cleanup Materials. Containment and cleanup materials shall be maintained onsite while work is underway.

APM BIO-15: Dust Suppression. When appropriate, a water truck will be used to control dust from disturbed soils, stockpiles, and unpaved access roads. Watering will be done in such a manner that no puddles are formed and impacts to wetlands and waters are avoided. Chemical additives used for dust suppression must be reviewed and approved by CDFW and shall not cause harm to sensitive species or habitats.

APM BIO-16: Work Area Delineation. The Work Area will be delineated with high visibility, temporary fencing at least 3 feet in height, flagging, or other barriers to prevent encroachment of construction personnel and equipment outside of the Work Area. Materials used for delineation will be inspected and maintained daily until completion of the project. Materials will be removed only when all construction equipment is removed from the site.

APM BIO-17: Invasive Wildlife Abatement. A CDFW/USFWS-approved biologist will permanently remove, from within the Work Area, any individuals of exotic invasive wildlife species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible. PG&E will have the responsibility to ensure that its activities are in compliance with the CFGC.

APM BIO-18: Contracts. Contracts with contractors, construction management firms, and subcontractors will obligate all contractors to comply with these measures.

APM BIO-19: Vehicle and Equipment Inspections. All equipment and vehicles will be inspected at the beginning of every work day, prior to beginning work activities to avoid crushing wildlife. Prior to movement or use, the area beneath all vehicles and equipment that have remained stationary for ten minutes or longer will be inspected for the presence of wildlife. If a special-status species is discovered, equipment will not be moved until the animal has left voluntarily or is removed by a biologist authorized to do so. When equipment is being moved out of Work Areas, the biological monitor or trained representative shall check to ensure that no animals are inadvertently crushed.

APM BIO-20: Amphibian Capture Best Practices. CDFW/USFWS approved biologists will use their bare hands to capture California tiger salamander and California red-legged frog, CDFW/USFWS-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within 2 hours before and during periods when they are capturing and relocating individual California tiger salamander/California red-legged frog. To avoid transferring disease or pathogens from handling of the amphibians, CDFW/USFWS-approved biologists will follow the Declining Amphibian Populations Task Force's Code of Practice. Captured California tiger salamanders shall be placed individually into a dark, clean plastic container of suitable size with enough room so the animal can move freely and shall keep the container moist with damp paper towels, soft foam rubber, or natural or synthetic sponge free of soaps and antibac-

terial/antifungal treatments. Containers used for holding or transporting shall not contain any standing water. The lids of the containers shall have small air holes for ventilation. Sponges shall not be reused and all other housing materials shall be disinfected between occupants according to the Task Force's Code of Practice.

APM BIO-21: Restraint and Handling of Live Amphibians. California tiger salamander and California red-legged frog will be handled and assessed according to the Restraint and Handling of Live Amphibians USGS, National Wildlife Health Center (D. Earl Creene, ARMI SOP No. 100; 16 February 2001). CDFW/USFWS-approved biologist will move special-status species to appropriate locations within 300 feet of the project boundary pursuant to the Relocation Plan. If an injured California tiger salamander or California red-legged frog is found during the project term, the individual will be evaluated by the approved biologist who will then immediately contact the PG&E project biologist who will then contact the CDFW and USFWS, via email and telephone, to discuss the next steps. If the representatives cannot be contacted immediately, the injured amphibian will be placed in a shaded container and kept moist. If the representatives are not available or do not respond within 2 hours of initial attempts, then the following steps will be taken:

a. If the injury is minor or healing and the amphibian is likely to survive, the amphibian will be released immediately as follows. The approved biologist will relocate any California tiger salamander and California red-legged frog found within the Work Area to an active rodent burrow or burrow system located no more than 300 feet outside of the Work Area. California tiger salamander and California red-legged frog will be monitored until it is determined that it is not imperiled by predators or other dangers. Relocation areas will be identified by the approved biologist based on best suitable habitat available and approved by the agencies prior to the start of project activities. The approved biologist will document both locations by photographs and GPS positions. The California tiger salamander and California red-legged frog will be photographed and measured (snout-vent and total length) for identification purposes prior to relocation. All documentation will be provided by PG&E to CDFW and the USFWS within 24 hours of relocation.

b. If it is determined that the California tiger salamander or California red-legged frog has major or serious injuries as a result of project-related activities, the CDFW/USFWS-approved biologist will immediately take it to the Lindsay Wildlife Museum or another agency-approved facility. If taken into captivity, the individual will remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the agencies. The circumstances of the injury, procedure followed, and final disposition of the injured animal will be documented in a written incident report, as described above.

APM BIO-22: Conduct Preconstruction Surveys for Nesting Birds. If construction activities are scheduled to occur between February 1 and August 31, preconstruction nesting bird surveys will be conducted by a qualified biologist no more than 7 days prior to the start of construction, covering a radius of 0.5 mile for golden eagles, 500 feet for raptors and 250 feet for passerines at all Work Area locations. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the qualified biologist in accordance with PG&E's Avian Conservation Plan and nesting bird buffers and in coordination with CDFW. No project vehicles, or heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active and or the young have fledged.

APM BIO-23: Conduct Preconstruction Surveys for Burrowing Owl and Implement Impact Avoidance, Minimization and Mitigation. Prior to construction at any time of the year, a qualified biologist will conduct a survey consistent with CDFW's Staff Report on Burrowing Owl Mitigation (Mitigation Guidelines; CDFW, 2012) in areas with suitable habitat for WBO to determine the presence/absence of active burrowing owl nesting or wintering burrows within 250 feet of any ground disturbance. Results of nest surveys and planned no-disturbance set-backs will be submitted to CDFW.

- If burrowing owls are present within 250 feet of Work Areas, work will not commence or resume in this zone until one of the following occurs:

  1. An **Avoidance Plan** will be approved by CDFW and implemented by PG&E. The objective of the PG&E-prepared Avoidance Plan will be to identify what, if any, level of work can begin or resume without disruption of nesting activity or burrow occupancy. The Avoidance Plan will consider the type and extent of the proposed activity, the duration and timing of the activity, the nesting status of the owls, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities, significant aspects of site such as topography or prevailing wind direction etc. to minimize the potential to affect the reproductive success of the owls. Further steps will be coordinated with CDFW. The Plan will include monitoring to be conducted prior to, during, and after initiation or re-initiation of project activity sufficient to ensure take is avoided. The biologist

will monitor all work activities in these zones daily when construction is occurring and assess their effect on the nesting birds. If the biologist observes any indication that behaviors are changing relative to baseline behaviors observed prior to project activity (e.g. female flapping of wings in an agitated manner, extended concentrated staring at project activities, distress calls, continuous circling over the area of disturbance), or otherwise determines that particular activities pose a risk of disturbing an active nest, project activity shall cease immediately. Permittee efforts to minimize nest abandonment does not eliminate or reduce the risk of prosecution in case nest abandonment occurs. The biologist may then recommend additional measures to minimize the risk of nest disturbance and those measures will be implemented. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work will be halted or redirected to other areas until the nesting is completed.

2. A PG&E Biologist submits a **Burrowing Owl Exclusion Plan** (see Appendix E of the Staff Report on Burrowing Owl Mitigation, Department of Fish and Game, March 2012) and a Burrowing Owl Impact Mitigation Plan based on Appendix F of the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) to CDFW and the plans are approved by CDFW prior to project commencement or re-initiation. Exclusion of nesting burrowing owls is not allowed.

- **APM BIO-24: Permit Copies.** PG&E will ensure that readily available copies of any permits issued by CDFW, USFWS, and USACE for this project are maintained by the construction foreman/manager on the project site whenever earthmoving and/or construction is taking place. The name and telephone number of the construction foreman/manager will be provided to permitting agencies prior to groundbreaking.

3.4.5 Impacts

Potential impacts to vegetation, wildlife, and aquatic resources are discussed in the following sections. The Project Area will cover a total of 15.09 acres; this includes approximately 4.97 acres of previously disturbed areas and approximately 10.12 acres of temporary disturbance of suitable CTS and CRLF upland habitat. A total of 0.14 acres will be permanently disturbed, all of which is in suitable CTS and CRLF upland habitat.

(a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Habitat within the project area was determined to have a low potential to support seven special-status wildlife species (western spadefoot, coast horned lizard, northern harrier, Modesto song sparrow, western mastiff bat, Townsend's big-eared bat, and American badger). Implementation of APMs would avoid and minimize impacts to these species. Residual impacts may primarily include temporary disturbance and impacts to the abovementioned species would be less than significant. Mitigation measures presented below for other special-status species would also serve to further reduce impacts to the aforementioned species.

No rare plants were observed during reconnaissance field surveys or focused rare plant surveys conducted in April and July 2016.

Nesting Birds

Migratory birds and raptors with moderate or high potential to occur, including tricolored blackbird, white-tailed kite, golden eagle, burrowing owl, and American peregrine falcon, have the potential to forage and/or nest in the project vicinity, and project activities could disrupt nesting in or along the pipeline. Other species of nesting birds, including but not limited to special-status species, may be affected if construction activities occur nearby. Direct effects include nest destruction during tree trimming or vegetation removal or by equipment on the ground, nest abandonment, or early fledging due to disturbance related to pipeline retirement activities, including equipment noise and human presence. APMs BIO-22 and BIO-23 require identification of any nesting birds or burrowing owls and avoidance or minimization of any project related disturbance. Therefore, impacts to birds would be less than significant.

California Tiger Salamander and California Red-legged Frog

Impacts to California tiger salamander and California red-legged frog upland habitat could occur as a result of the project. Equipment could crush burrows or individuals. Excavating activities could unearth California tiger salamander and California red-legged frog taking refuge in burrows within the project area, thereby resulting in possible injury or mortality.

Temporary access routes, vehicle turnarounds, staging areas, and excavations in non-native grassland and other habitats would temporarily prevent small mammals from creating burrows and would remove existing burrows. Because California tiger salamander and California red-legged frog use burrows for upland refugia, elimination of burrows will temporarily reduce upland habitat. The proposed project would temporarily disturb a total of approximately 10.12 acres of suitable California tiger salamander and California red-legged frog upland habitat, including 0.64 acre of suitable upland and dispersal habitat within designated Critical Habitat Unit ALA-2 at Work Areas 24 through 29/29A. The project would also permanently disturb 0.14 acres of suitable habitat for these two species. No California tiger salamander or California red-legged frog breeding habitat would be disturbed by project activities.

The adjacent proposed Draft Alameda Watershed HCP (HCP) area, which encompasses the proposed project, contains 38,925 acres of suitable upland habitat for these species. The habitat temporarily disturbed by the proposed project would be 0.026 percent of the upland habitat identified in the proposed HCP area (Draft Alameda Watershed HCP, January 2010). Considering the expansive area of suitable upland habitat available, it is not likely to be a limiting factor in the viability of the California tiger salamander and California red-legged frog population. Nonetheless, temporary loss of upland habitat as well as injury or mortality of individuals would be considered a significant impact absent mitigation. Mitigation Measure B-1 would require pre-construction surveys to find California tiger salamander and California red-legged frog and mark potential burrows for avoidance by construction equipment and personnel. APMs BIO-20 and 21 and Mitigation Measure B-2 prescribe methods for handling or relocating any encountered California tiger salamander or California red-legged frog. Mitigation Measure B-3 would require installation of fencing to exclude wildlife, including California tiger salamander and California red-legged frog, from construction areas. Collectively, these measures would avoid and minimize impacts to California tiger salamander and California red-legged frog.

Mitigation Measure B-4 would require PG&E to prepare and implement a Vegetation Restoration Plan to restore temporary impact areas, including California tiger salamander and California red-legged frog upland habitat to as close to pre-project conditions as possible. Following restoration, small mammals are expected to recolonize the temporarily disturbed areas and resume excavation of burrows within 1 year; thereby continuing to provide upland habitat for California tiger salamander and California red-legged frog. Mitigation Measure B-5 would prevent habitat degradation due to the spread of plant pathogens. Pursuant to Mitigation Measures B-6 and B-7, PG&E would mitigate the temporary and permanent disturbance of suitable upland and riparian habitat for California tiger salamander and California red-legged frog through purchase of offsite mitigation credits at a CDFW/USFWS-approved mitigation bank with available California tiger salamander and California red-legged frog credits. For each acre temporarily disturbed by project activity, that acre will be restored onsite, and at least another acre of mitigation credits will be purchased. Implementation of these mitigation measures would reduce impacts to California tiger salamander and California red-legged frog to less than significant.

MM B-1 **Conduct Preconstruction Surveys for Special-Status Amphibians and Avoid Impacts to Burrows.** A CDFW- and USFWS-approved biologist will survey the Work Areas with potential habitat for California tiger salamander and California red-legged frog immediately prior to ground-disturbing activities. Surveys will include all potentially suitable upland habitat such as rodent burrows, cracks, ruts, holes near root structures, foundations, abutments, and leaf litter within the Work Areas that contain potential habitat for these species. If any California tiger salamander or California red-legged frog are found, the approved biologist will contact CDFW and the USFWS to determine if moving any of these life stages is appropriate. In making this determination, CDFW and USFWS will consider if an appropriate relocation site exists as provided in the Relocation Plan. If CDFW and the USFWS approve moving animals, the CDFW- and USFWS- approved biologist would be allowed sufficient time to move California tiger salamander and California red-legged frog from the Work Area before work activities begin. Only CDFW- and USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frog and California tiger salamander.

The qualified biologist shall mark all burrows within the project Work Areas no less than 7 days prior to earthmoving activities in those areas. All burrows shall be avoided to the maximum extent practicable during earthmoving activities. Areas with high concentrations of burrows shall be avoided by earthmoving activities to the maximum extent possible. In addition, when concentrations of burrows or large burrows are observed within the site, and if it is possible to avoid these burrows during construction activities, these areas shall be staked and/or flagged to ensure construction personnel are aware of their location and to facilitate avoidance of these areas when possible.

MM B-2 **Covered Species Relocation.** A Relocation Plan for California tiger salamander and California red-legged frog shall be submitted to and approved by CDFW prior to the start of construction. The Relocation Plan will include relocation site selection criteria. When California tiger salamander are observed within word areas, the qualified biologist shall relocate any individuals found to an active rodent burrow system located no more than 300 feet outside of the project area, or the nearest suitable burrow beyond that distance. California tiger salamander shall be released as soon as possible. A suitable burrow should be at least 3" in depth and have moist and cool conditions. If burrow density allows, the qualified biologist shall only release one animal per burrow. If the animal repeatedly walks away from the burrow, or partially enters it and then turns around, the qualified biologist shall remove it and find another burrow.

The qualified biologist shall document occurrence and relocation sites by photographs and GPS positions. When handled, California tiger salamander and California red-legged frog shall be photographed and measured (snout-vent and total length) for identification purposes prior to relocation. The individual shall be monitored until it is determined that it is not imperiled by predators or other dangers. The qualified biologist shall release individuals one at a time rather than as a group. All documentation shall be provided to CDFW and USFWS within 48 hours of relocation.

Only CDFW/USFWS-approved biologists will conduct surveys and move special-status species. A qualified biologist possessing a valid ESA Section 10(a)1(A) permit or CDFW/USFWS-approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside fenced area.

MM B-3 **Implement Wildlife Barriers.** At least 15 days prior to commencing any Project Activities, Permittee shall submit to CDFW a barrier proposal that will address the level of need for additional barriers at all project Work Areas within suitable CTS/CRLF habitat for CDFW approval. The Designated Biologist will evaluate site and planned work activities to determine the wildlife exclusion barrier proposal and consider season of work, special-status species occurrence to date, time duration of site activity, and implications for wildlife movement in the proposal. A recommendation not to install fencing may be made if the effects of fencing installation could be greater in extent or duration than those associated with planned work activities.

The barrier design shall include the elements that follow. To avoid potential entanglement of wildlife, PG&E shall not use plastic monofilament netting. The barrier shall include multiple escape funnels, ramp, or another method if approved by CDFW to allow wildlife to leave the project area. PG&E shall maintain and repair the barrier immediately to ensure that it is functional and without defects. Any California tiger salamander and California red-legged frog found along the barrier shall be relocated in accordance with the Relocation Plan. Location and design of the barriers shall be included within the proposal. The barrier will be installed under the supervision of a qualified biologist. The bottom six inches of the barrier shall be buried, if feasible, or otherwise adequately secured to prevent California tiger salamander and California red-legged frog movement into the Work Area. Following fence installation, the qualified biologist(s) shall block holes or burrows entrances within Work Areas, of burrows avoided by construction activities, if any, that appear to extend under the barrier to minimize California tiger salamander and California red-legged frog movement into the project area. The barrier will be checked regularly (not less than three times per week) to look for California tiger salamander and California red-legged frog and to ensure barrier integrity. Inspection intervals will be based upon the planned construction activities at each site, recent and forecasted weather events, and the results of pre-construction surveys and previous inspections. The barriers will be continuously maintained until all construction activities are completed, and then removed as soon as possible, but no later than 7 days after activities have ceased, unless required to remain longer to ensure SWPPP compliance. The barrier will continue to be checked regularly until it is removed.

MM B-4 **Prepare and Implement a Vegetation Restoration Plan.** PG&E shall restore on-site all of the native vegetation that will be temporarily disturbed during construction to as close to pre-project conditions as possible. The table below describes the proposed restoration success criteria for grassland habitat beginning in "Year 1," the first year upon completion of construction. Upon CDFW approval, the Vegetation Restoration Plan will be implemented to restore temporary impact areas to pre-project or better conditions.

Restoration Success Criteria and Reporting for Grassland Habitat

Overall Success Criteria	Year 1*	Year 2 and Year 3, if applicable
▪ A minimum of 70% vegetation cover relative to baseline conditions, and less than 5% absolute cover of invasive plants listed as high or moderate in the Cal-IPC database and mapped in the work area during the baseline conditions assessment.	Take photos from designated photo stations ▪ In Year 1, an annual restoration monitoring report will be submitted to CDFW with a qualitative assessment of vegetation cover and a comparison to the baseline conditions assessment for the Work Areas. Annual monitoring report will document restoration success and will be submitted to the permitting agencies by September 1. The first report will provide a species list of the seed mix used at each restoration area. If success criteria, are met in Year 1, no additional monitoring or reporting is required and restoration is considered complete.	Take photos from designated photo stations ▪ If success criteria are not met in Year 1, a Year 2 annual restoration monitoring report will be submitted to CDFW by September 1, containing the same information as the Year 1 report. ▪ If success criteria are not met in Year 2, a final report will be submitted to CDFW by September 1, containing the same information as the Year 1 and 2 reports.

* Year 1 is first year of post-construction operation.

The Vegetation Restoration Plan shall include detailed specifications for restoring all temporarily disturbed areas, such as seed mixes, timing, and application methods. Non-native invasive species shall not account for the absolute cover for restoration success. The California Invasive Plant Council (Cal-IPC) database (http://www.cal-ipc.org/paf/) shall be consulted when determining noxious and invasive plants. The Vegetation Restoration Plan shall contain the following components:

- PG&E shall remove and stockpile separately, the top six (6) to twelve (12) inches of soils within any Work Areas within CDFW and/or USACE jurisdictional drainages. This stockpiled top soil material shall be placed back so as to replicate the original soil stratigraphy at the end of construction.
- Baseline Conditions Assessment. Prior to initiating ground disturbance, PG&E shall identify baseline vegetation conditions of Work Areas within suitable habitat for CTS/CRLF. Documentation for each Work Area will identify: (1) the vegetation species; (2) an estimate of average ground cover density; (3) an overall estimate of the density of native and non-native species composition; and (4) weed mapping of all Cal-IPC's California Invasive Plants listed as high or moderate.
- Restoration of temporary impacts shall occur prior to the beginning of the rainy season (generally October 31) to the extent possible. Restoration work may occur year-round, but will be completed within the same season of project impact to the extent possible.
- A seed mix shall be identified considering species found in the baseline conditions assessment and include only native species, with an emphasis on native bunchgrasses and other grassland species.
- In the baseline conditions assessment PG&E will perform pre-construction weed mapping of all Cal-IPC's California Invasive Plants listed as high or moderate to document baseline Cal-IPC invasive plants present in the Work Areas prior to construction. Restored Work Areas shall consist of no more than 5% of the existing baseline Cal-IPC invasive plans observed in the same Work Area. If the presence of invasive species exceeds this threshold, PG&E is responsible for conducting appropriate control activities during monitoring, up to three years after implementation of restoration.
- To ensure that site restoration and erosion control measures are successful PG&E shall be required to monitor site conditions for up to three years following project completion or until success criteria are satisfied prior to the end of three years. Site visits will be conducted at least once after the first signifi-

cant rain event after project completion to evaluate site stability and during the spring and summer to evaluate revegetation efforts. If PG&E or CDFW determines there is an increase in erosion or bank instability, PG&E shall consult with CDFW on corrective actions.

- To discourage the introduction and establishment of invasive plant species, seed mixtures/used within natural vegetation will be either rice straw or weed-free straw.
- Prior to commencement of work, PG&E shall identify representative views of the project in Work Areas that are identified in the CDFW Streambed Alteration Agreement and Incidental Take Permit for this project or would impact California tiger salamander or California red-legged frog upland habitat. PG&E shall photograph the project area from each of the flagged points, noting the direction and magnification of each photo. Upon completion of construction, PG&E shall photograph post-project conditions from the flagged photo points using the same direction and magnification as pre-project photos. Labeled digital copies of pre- and post-project photographs shall be sent to CDFW within forty-five (45) days of completion of the project.

MM B-5 **Invasive Plant and Plant Pathogen Abatement.** A CDFW/USFWS-approved biologist will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the Work Areas will be removed. To minimize the unintended movement of host material, soil, and water from areas infested with *Phytophthora spp.* the following BMPs will be implemented:

- Prior to commencement of construction, Permittee shall evaluate the level of currently known *Phytophthora* infestations (e.g., viewable in SODmap) along the entirety of the project area, and subsequently take extra precautions when moving equipment out of contaminated areas.
- In the event that it appears that there is a risk of infestation at any Work Area establish a vehicle and equipment power wash station to remove potentially contaminated accumulations of soil, mud, and organic debris. The station should be located within the generally infested area, paved or rocked, well-drained so that vehicles exiting the station do not become contaminated by the wash water, and sited where wash water and displaced soil does not have the potential to carry fines to a watercourse
- Prior to entry to any project area for the first time, equipment must be free of soil and debris on tires, wheel wells, vehicle undercarriages, and other surfaces (a high pressure washer and/or compressed air may be used to ensure that soil and debris are completely removed).
- Compliance with the provision is achieved by demonstrating that the vehicle or equipment has been cleaned at a commercial vehicle or appropriate truck washing facility.
- The interior of equipment (cabs, etc.) must be free of mud, soil, gravel and other debris (interiors may be vacuumed or washed).
- Footwear and small tools must be thoroughly cleaned and sanitized before moving to a new job site. Shoe soles must be free of debris and soil. (Water, a stiff brush, screwdriver or similar tool can be used to remove soil from shoe treads). Once soil or debris have been removed, an appropriate sanitizing agent of ethyl or isopropyl alcohol (at least 70% concentration) must be used to kill pathogen spores which may be present on boot soles or tools (sanitizing agent may be applied by using spray bottles filled with alcohol to thoroughly wet the surface). Boot soles and hand tools must be sprayed with enough alcohol that surfaces are fully coated and wet. (Brushes and other implements used to help remove soil will be cleaned after use with alcohol.)

MM B-6 **Provide Habitat Compensation.** Prior to construction, or no later than 18 months from issuance of an Incidental Take Permit by CDFW, assuming financial assurance is provided to CDFW, PG&E will purchase credits at a USFWS/CDFW-approved Conservation Bank to compensate for unavoidable effects to California tiger salamander and California red-legged frog. PG&E will purchase 10.61 acres of California red-legged frog and California tiger salamander upland habitat credits as compensation for temporary and permanent impacts. CDFW or USFWS may require additional mitigation if reseeding is not completed by October 31 of the year in which impacts occurred as required in MM B-4 (Prepare and Implement a Vegetation Restoration Plan). If available, multi-species credits can be used. Proof of payment will be submitted to the USFWS and CDFW.

MM B-7 **Financial Security.** Prior to initiating project activities, and if proof of payment has not been submitted to CDFW and USFWS, PG&E will provide CDFW with a form of performance security, approved in advance in writing, in an amount comprised of funds necessary for: a) onsite restoration, and 2) offsite mitigation credits.

Alternatively, PG&E may provide, prior to initiating project activities, habitat compensation through the acquisition and commitment for management in perpetuity of 10.61 acres of suitable habitat, approved by CDFW. Such a purchase would then be subject to a Fee Title/Conservation Easement transfer to CDFW pursuant to terms approved in writing by CDFW.

Alameda Whipsnake

Alameda whipsnake may disperse through Work Areas 1, 2, 3, 16, 17, 17A, and 41-44. Implementation of APMs that require worker awareness training (APM BIO-2), pre-activity surveys to ensure there are no Alameda whipsnakes in the Work Area (APM BIO-3), covering excavations and pipes as well as providing wildlife escape ramps to prevent entrapment (APMs BIO-4 and BIO-5), and managing vehicles and equipment to avoid interactions with snakes (APMs BIO-8, BIO-9, BIO-10, BIO-19) would reduce the potential for snake injury or mortality to an extremely low level. Impacts to Alameda whipsnake would be less than significant and no mitigation is required.

MM B-3, which prohibits use of erosion control materials that could pose an entrapment hazard for wildlife, would also avoid impacts to snakes. If Alameda whipsnake are observed in the project area and have the potential to be impacted by construction, an amendment to the Incidental Take Permit for this project to include Alameda whipsnake would be warranted.

(b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The CNDDB identifies one Work Area and a portion of an overland access route within mapped Sycamore Alluvial Woodland, a sensitive natural community designated by CDFW. The project would result in temporary impacts to annual grassland within this mapped woodland area; however, no impacts to California sycamore or sycamore alluvial woodlands would occur.

The proposed project would result in a total of 0.064 acres of temporary impacts to CDFW-jurisdictional features, as described below.

- At Work Area 2, the project would temporarily disturb 0.002 acre of the bed and bank of a tributary to Arroyo Mocho, and would require removal of one small oak tree.
- At Work Area 3, the project would temporarily disturb 0.003 acre of the bed and bank of a tributary to Arroyo Mocho.
- At Work Area 6, the project would temporarily disturb 0.002 acre of the bank of a tributary to Arroyo Mocho.
- At Work Area 7, the project would temporarily disturb 0.002 acre of the bank of a tributary to Arroyo Mocho.
- At Work Areas 14-15, the project would temporarily disturb 0.004 acre of the bed and bank of a tributary to Arroyo Valle.
- At Work Area 21, the project would temporarily disturb 0.002 acre of the bank of a tributary to Arroyo Valle.
- At Work Area 22, the project would temporarily disturb 0.002 acre of the bank of a tributary to Arroyo Valle.
- At Work Area 24, the project would temporarily disturb 0.002 acre of the bank of a tributary to San Antonio Reservoir.
- At Work Area 25, the project would temporarily disturb 0.003 acre of the bank of a tributary to San Antonio Reservoir.
- At Work Area 26, the project would temporarily disturb 0.002 acre of the bank of a tributary to San Antonio Reservoir.
- At Work Area 27, the project would temporarily disturb 0.003 acre of the bank of a tributary to San Antonio Reservoir.
- At Work Area 28, the project would temporarily disturb 0.002 acre of the bed and bank of a tributary to San Antonio Reservoir.
- At Work Area 29, the project would temporarily disturb 0.002 acre of the bed and bank of a tributary to San Antonio Reservoir.

- At Work Area 31-32, the project would temporarily disturb 0.003 acre of the bank of a tributary system to Vallecitos Creek.
- At Work Area 37A, the project will result in temporary impacts to the bed, bank, and riparian habitat in an unnamed tributary to Vallecitos Creek. Removal of an aboveground pipe feature is expected to temporarily disturb approximately 0.02 acre of streambed below the ordinary high water mark in USACE jurisdiction and an additional 0.01 acre of adjacent riparian habitat.

Pursuant to Biological Resources and Water Quality APMs (APMs BIO-13 and HWQ-1), work would be conducted during the dry season when the streambeds are expected to be dry. Furthermore, most construction activities for span removals (all Work Areas listed above, except 37A) would avoid the streambed or only require work in the streambed for one to two days. If the streambeds are not dry, the Work Areas would be isolated from the stream using barriers and temporarily dewatered. Excavated soils will be stockpiled in an adjacent upland area beyond the top of the creek bank, and replaced following removal of the pipe. A SWPPP would be developed and implemented to avoid and minimize impacts to water quality. At pipeline span locations, existing pipe would be removed permanently and the channel banks and/or bed restored to natural conditions. Approximately 0.064 acres of riparian would be impacted. The majority of impacts would occur in non-native grassland. Implementation of APM BIO-13 and HWQ-2 (Restore Channel Contours) would reduce impacts to riparian areas to less than significant.

PG&E applied for a streambed alteration agreement (SAA) from CDFW for impacts at each of the aforementioned jurisdictional features. The final Applicant Proposed Measure (APMs) and mitigation measures in this Initial Study will be incorporated into the SAA process, as appropriate. The measures above may be refined or expanded during the SAA process.

(c) Would the project 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?

Approximately 995 square feet (0.02 acre) of the bed and bank of the unnamed tributary to Vallecitos Creek at Work Area 37A will be temporarily disturbed. This corresponds to 22 linear feet of ephemeral creek habitat. Within this area, an existing above-ground pipe feature would be permanently removed and the creek bed restored to natural conditions. Pursuant to Biological Resources and Water Quality APMs (APMs BIO-13 and WQ-1), work would be conducted during the dry season when the streambeds are expected to be dry. If the streambeds are not dry, the Work Area 37A would be isolated from the stream using barriers and temporarily dewatered. Excavated soils will be stockpiled in an adjacent upland area beyond the top of the creek bank, and replaced following removal of the above ground pipe feature at this location. A SWPPP would be developed and implemented to avoid and minimize impacts to water quality.

Mitigation Measure B-4 (Prepare and Implement a Vegetation Restoration Plan) would require that, following completion of the project, all temporary fill within jurisdictional features be removed and Work Areas restored to preconstruction contours. Implementation of this mitigation measure would reduce impacts to wetlands and waters of the US to less than significant.

PG&E received coverage under a Nationwide Permit 12 from USACE on April 26, 2016 for impacts to this jurisdictional feature.

(d) Would the project 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?

The project does not include any permanent features that would interfere with wildlife, including California tiger salamander and California red-legged frog, from moving from one area to another. Temporary wildlife barriers, pursuant to Mitigation Measure B-3, would be established as needed for intervals kept as short as possible at Work Areas during construction with consideration of any adverse implications for wildlife movement. Impacts would be less than significant.

(e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

General Plans associated with the County of Alameda (including the unincorporated town of Sunol) and the cities of Livermore and Fremont are the local planning documents that address biological resources in the project area. These are described in Section 3.4.2 and generally address protection of special-status species and conservation of natural areas, including preservation of riparian vegetation and wetlands. The project and mitigation measures are consistent and would not conflict with any local policies or ordinances protecting biological resources. No impact would occur.

(f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project area is located within the study area of the EACCS. The APMs and mitigation measures listed above are consistent with the EACCS to the extent appropriate and with several variances. USFWS issued a letter appending the project to the May 31, 2012 *Programmatic Biological Opinion for Corps Permitted Projects Utilizing the East Alameda County Conservation Strategy that May Affect Federally Listed Species in East Alameda County, California* (Corps File Number 2011-00230S). The USFWS letter states that the proposed project meets the suitability criteria and is within the geographic area analyzed in the Programmatic Biological Opinion. The letter is an agreement by the Service to append the proposed project to the Programmatic Biological Opinion and represents the Service's biological opinion on the effects of the proposed action on the California red-legged frog and the Alameda whipsnake. Therefore, the project is not anticipated to conflict with the EACCS. Impacts would be less than significant.

3.5 Cultural Resources, Tribal Cultural Resources, and Paleontological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☑	☐
(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?	☐	☐	☑	☐
e) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:	☐	☐	☑	☐
1), listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				
2) a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.				

3.5.1 Introduction

This section describes the existing cultural and paleontological resources in the project area and discusses potential impacts associated with the proposed project.

Cultural resources can reflect the history, diversity, and culture of the region and people who created them. They are unique in that they are often the only remaining evidence of activity that occurred in the past. Cultural resources can be natural or built, purposeful or accidental, physical or intangible. They encompass archaeological, traditional, and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Tribal cultural resources are sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. Cultural resource and tribal cultural resources identification efforts for the proposed project included a records search at the Northwest Information Center of the California Historical Resource Information System, Native American outreach, an archival records search, a buried site sensitivity analysis, and a pedestrian survey designed to satisfy both CEQA and Section 106 reporting standards.

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the geologic record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., track ways, imprints, burrows, etc.). In general, fossils are greater than 5,000 years old (middle Holocene) and are typically preserved in sedimentary rocks.

Information presented in this section was compiled from *Cultural Resources Study of the PG&E Line 107 (MP 13.08 to 26.01) Deactivation Project, Alameda County, California* (Thomas and Berg 2014) prepared by Far Western, the *PG&E Line 107 Deactivation Project Alameda County, California Finding of Effect for the Cut and Cap Portion Crossing the South Bay Aqueduct* (Bunse and Norby 2014) prepared by JRP Historical Consulting, and *Paleontological Inventory for the Line 107 (MP 13.08 to 26.01) Deactivation Project, Alameda County, California* (Clifford and DeBusk 2014) prepared by Applied Earthworks.

3.5.2 Regulatory Setting

Cultural and Historical Resources

The project would require both federal and state permits, necessitating compliance with CEQA and Section 106 (36 CFR Part 800) of the National Historic Preservation Act (NHPA). CEQA and Section 106 regulations require that effects to significant cultural resources be considered as part of the environmental analysis of a proposed project.

Section 106 of the National Historic Preservation Act (NHPA)

Under Section 106 of the 1966 NHPA (16 US Code [USC] 470 et seq., as amended 2006), a federal agency is required to take into consideration the effects of its proposed undertaking on historic properties. Per 36 Code of Federal Regulations (CFR) Part 800.16(l)(1)a historic property is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.

Eligibility for inclusion in the NRHP is determined by applying the following criteria:

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

A) That are associated with events that have made a significant contribution to the broad patterns of our history; or

B) That are associated with the lives of persons significant in our past; or

C) That embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) That have yielded, or may be likely to yield, information important in prehistory or history.

Any prehistoric or historic period district, site, building, structure, or object that meets one or more of the criteria above and possesses sufficient integrity may be eligible for inclusion in the NRHP as a historic property.

CEQA and the California Register of Historical Resources (CRHR)

Under Section 15064.5 of the CEQA Guidelines, 14 CCR 15000 et seq, an historical resource is an object, artifact, structure, or site that is listed on, or eligible for listing on, the CRHR. Historically significant resources are those that can be clearly shown to meet any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value;
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA's definition of a *unique archaeological resource*, even if it does not qualify as a historical resource (14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

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

Automatic listings include properties that are listed on the NRHP. In addition, Points of Historical Interest nominated from January 1998 onward are to be jointly listed as Points of Historical Interest and in the CRHR.

Resources listed in a local historical register or deemed significant in a historical resources survey, as provided under PRC Section 5024.1(g), are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates that they are not. A resource that is not listed on or determined to be ineligible for listing on the CRHR, not included in a local register of historical resources, or not deemed significant in a historical resources survey may nonetheless be historically significant, as determined by the lead agency (PRC Section 21084.1 and Section 21098.1).

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030).

Several provisions of the Public Resources Code also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment.

PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites, defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

Paleontological Resources

Paleontological resources, or fossils, are protected under CEQA for their educational and scientific value to the earth and life sciences. CEQA includes in its definition of historical resources "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" may constitute a significant impact under CEQA per State CEQA Guidelines Appendix G.

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project area; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring, combined with data recovery excavation and/or avoidance.

Tribal Cultural Resources

Tribal Cultural Resources (TCRs) are a newly defined class of resources under Assembly Bill 52 (AB 52) (Gatto, 2014). TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: 1) be listed on, or be eligible for, listing on the

California Register of Historical Resources or other local historic register; or 2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074). AB 52 also states that tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of TCRs within their traditional and cultural affiliated geographic areas, and therefore the identification and analysis of TCRs should involve government-to-government tribal consultation between the CEQA lead agency and interested tribal groups and/or tribal persons (PRC § 21080.3.1(a)).

State CEQA Guidelines Appendix G indicates that a significant impact to a TCP would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b. a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.5.3 Environmental Setting

Natural Setting

The project area traverses the Livermore Valley of north-central Alameda County, in central California. The southern portion of San Francisco Bay lies approximately 14 km to the west, while the San Joaquin Valley is situated about 20 km to the east. The Livermore Valley sits within the northern portion of the Diablo Range, a subset of the larger Central Coast Range that runs southeast to northwest in this area. Approximately 30 km to the north, Mt. Diablo peak dominates the Black Hills portion of the range. The valley is flanked by lower hills on the west and east, and a prominent feature is the Pleasanton Ridge that rises rapidly in elevation along the west edge of the valley.

Numerous drainages of the Diablo Range flow into Livermore Valley from all directions. Some of the most prominent are Arroyo Mocho, Arroyo Seco, and Arroyo Valle, while Arroyo Las Positas runs east to west along the north side of the valley. The western end of the valley floods today, and during historic-era times this area was termed Tulare Lake, or Willow Marsh, with associated wetlands and willow stands (Meyer and Dalldorf, 2004).

Geologically, the northern and southern hillsides of the valley margins are primarily Quaternary gravels, while Pleistocene alluvial fans and fluvial deposits of varied ages are dispersed within and along the margins of the drainages that lead into the valley (Helley and Graymer, 1997). In contrast, the surface of the valley floor is dominated by Holocene alluvial fan and fluvial deposits of varied ages, as well as basin-floor clays and silty clays.

Prehistoric Setting

The prehistory of the Project vicinity is divided into four time periods: Early (5000-2500 BP [before present]), Middle (2500-1250 BP), Middle to Late Transition (1250-1000 BP), and Late (1000-150 BP). Overall, the Livermore Valley sites demonstrate occupation within the valley from 3,500 years ago onward. Early Period artifacts in the valley include dart points, prominently Napa Valley obsidian, battered cobbles, bone beads, and few ground stone artifacts. Faunal assemblages are reflective of intensive collection and processing of local resources and a lack of resources from more distant ecological settings. The subsequent Middle Period features dart points, battered cobbles, awls, harpoons/fish-spear tips and bone tubes, bone beads, *Olivella* shell beads, and *Haliotis* pendants. Faunal collections include diverse mammalian remains, freshwater and littoral fish, and migratory waterfowl. Middle/Late Period Transition sites sees an increase in frequency of ground stone, most notable the mortar and pestle. Other materials associated with the assemblages include awls, serrated scapulas, *Olivella* shell beads and *Haliotis* pendants. Faunal collections are generally dominated by mammals, with particularly high frequencies of pronghorn, perhaps indicating a change in large-mammal procurement processes. Late Period assemblages are distinguished by the presence of smaller arrow-point-sized projectile points, ground stone (particularly hopper mortars and handstones), awls, bone beads in low frequencies, *Olivella* shell beads, and *Haliotis* pendants. Faunal collections show a drop in large game and freshwater resources during the Late Period, with most fish coming from terrestrial marsh or wetland settings, and terrestrial birds being more common.

Ethnographic Setting

The ethnographic populations living in and around the Livermore Valley were members of the Ohlone language family. This family occupied territories stretching from San Francisco and the Carquinez Straits south to the interior of Salinas Valley and to the Big Sur area on the coast. The reduced population and displacement of the native people caused by missionization and Anglo-American occupation of their land substantially altered their traditional way of life. As a result, the Ohlone are not well-known ethnographically.

Historical Setting

Sixteenth century sea-going explorers were the first Europeans to reach the coastline of the San Francisco area, but it was not until the late eighteenth century that they intruded into the hinterlands. Spanish military explorers entered the Livermore Valley in 1772. The first of seven Spanish missions was established within Ohlone territory in 1770. The last of these, Mission San Jose, was founded in 1797, and this marked the onset of active coercement and resettlement of local Native Americans into the mission feudal system, followed rapidly by a massive decline of native populations. Native American populations within the Livermore Valley area were brought into the mission system between 1801 and 1806, based on Mission San Jose baptismal records. Raids by Spanish soldiers played an important role in this process. Subsequently, the project region became an important grazing area for the mission's animal herds.

When Mexico took control of the region in 1822, a series of privately owned ranchos were established; the mission lands were officially secularized in 1833. The Livermore Valley contained four land-grant-based ranchos, including Rancho de las Positas, Rancho Valle de San Jose, Rancho Santa Rita, and Rancho San Ramon. These ranches primarily ran cattle, horses, and sheep and provided products to a growing non-native population. Notably, Jose Aria Amador built the Rancho San Ramon adobe in 1826. The ever-dwindling population of local Native Americans often worked on the ranches. The existing gas pipeline traverses the Valle de San Jose (Sunol and Bernal) land grant. During the succeeding decades, the Livermore Valley witnessed continued population influxes and a rise in beef-cattle ranching and wheat farming. This same year the Central Pacific Railroad was constructed through the valley, thus cementing its importance in the region.

The wine industry has also been important in Livermore Valley. In the 1870s, only about 40 acres in Livermore were devoted to grapes, but by 1892, more than 4,000 acres of vineyards had been established. One of the largest landowners in the L-107 survey corridor is Wente Vineyards. In 1883, Carl H. Wente, a first-generation immigrant from Germany, purchased 48 acres in the Livermore Valley. One hundred thirty years later, it is the longest continuously operating family-run winery in America. The current study area passes through the ruins of the Olivina Winery which was established in 1882. It was by far the largest in the Livermore area at 660 acres.

The Livermore Valley is also known as the route of the South Bay Aqueduct (SBA), a major component of the State Water Project (SWP). This aqueduct conveys water from Bethany Reservoir near Tracy to the San Jose area through both underground conduits and above-ground canals. SBA is one of the first components of the SWP that the state of California completed. It began delivering water from the Sacramento–San Joaquin Delta to Alameda County in 1962 and construction reached Santa Clara County in 1965. The SWP system, including the SBA, represents one of the boldest, complex and successful water development projects ever undertaken. Not only is the SWP the largest state-built, multi-purpose water project in the nation, it was the first of its kind.

Results

Records Search Results

An initial records search was conducted by staff at the Northwest Information Center (NWIC) of the California Historical Resources Information System on January 13, 2014, and a supplemental search covering access roads outside the original search extent was completed on March 24, 2014. NWIC base maps documenting previously recorded resources and archaeological studies within a quarter-mile radius of the project area were reviewed. The records search revealed that 59 prior cultural resources studies have been conducted in the search radius, 35 of which intersect portions of the Area of Potential Effect (APE). Fifteen previously recorded resources were identified in the search extent, five of which intersect the APE. The resources include four prehistoric sites, three historic-era sites, one multicomponent site, six historic-era buildings or structures, and one historic-era isolate. The resources that intersect the APE include two prehistoric shell middens recorded in 1950 (P-01-000048 and -000049), historic-era farm property (P-01-002174), South Bay Aqueduct (P-01-010629), and the Olivina Winery Point of Historic Interest (P-01-011360). Of these, the historic-era

farm has been formally evaluated for National Register of Historic Places (NRHP) eligibility and was determined ineligible for listing in the National Register.

Field Survey Results

The field survey for the retirement work areas was performed by a four-person crew from April 2 to 4, 2014. The survey area included the 13-mile pipeline corridor and a 250-foot buffer centered on the existing pipeline. Access routes for the retirement work areas would occur on paved, graveled, dirt, and overland areas. Some overland areas would require mowing and possibly blading but no grading, excavation, placement of gravel, or other ground disturbance would occur. The majority of overland access routes fall within the 250-foot-wide survey corridor. Access routes outside of this area did not include overland access and were not surveyed due to the lack of potential impacts from use of existing access roads. Despite good ground visibility, two previously recorded prehistoric shell middens were not located but the three historic-era resources were relocated. Three new resources were also identified during the survey, including a historic-era site and two isolated pieces of prehistoric ground stone. The newly identified site is a small historic-era ranching-related complex (P-01-011501/CA-ALA-674H). Associated features include: a concrete structural foundation; a camp cook wagon; a hewn-stone structural foundation; a possible privy, circular depression; and a small concrete footing; several scattered large wooden fence posts and a sparse scatter of glass, ceramics, and metal items. Given the features and items found here, it is possible that this was a livestock ranch line camp with perhaps a line shack, a storage shed and/or tack room, and a fenced enclosure for horses. This resource is not with the APE and therefore was not evaluated for either the California or Federal Register.

The field survey for the valve replacement work areas was performed on September 2, 2015. The work areas were surveyed using linear transects with spacing ranging between 5 and 10 meters due to poor visibility because of dense vegetation cover. Along steeper inclines, contoured transect spacing of approximately 5 meters apart was used. No cultural resources or materials were identified at either valve replacement work area.

Traditional Cultural Properties / Areas of Native American Concern

The Native American Heritage Commission (NAHC) maintains two databases to assist in the identification of cultural resources of concern to Native Americans, referred to by NAHC staff as tribal cultural resources. The NAHC Sacred Lands File (SLF) database has records for places and objects that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. The NAHC Contacts database has the names and contact information for individuals, representing a group or themselves, who have expressed an interest in being contacted about development projects in specified areas.

Far Western Anthropological Research Group (FWARG), on behalf of PG&E, contacted the NAHC by mail on February 21, 2014, to obtain information on known cultural resources and sacred sites, and to learn of any concerns Native Americans may have about the proposed project. In addition, FWARG requested a list of Native Americans who have heritage ties to the project area and who want to be informed about new development projects there. The NAHC responded on February 27, 2014, with the information that the SLF database failed to indicate the presence of sacred sites in the project vicinity. The NAHC also forwarded a list of ten Native American groups or individuals interested in development projects in the project area.

On April 8, 2014, FWARG sent letters to all ten Native American individuals and groups identified by the NAHC inviting comments or concerns regarding potential impacts to cultural resources or areas of traditional cultural importance within the vicinity of the proposed project. On April 25, 2015, FWARG followed up with phone calls to the 10 contact individuals or groups. In June 2015, DFW sent one Native American outreach letter to the Honorable Johnny R. Eddy Jr., Chairperson of the Xolon Salinan Tribe; and one Native American outreach letter to the Honorable Andrew Galvan, President of the Ohlone Indian Tribe. To date there has been no response to CDFW's letters.

Buried Site Sensitivity Analysis

A buried site sensitivity analysis was conducted in order to assess the likelihood of encountering archaeological materials. Based on the age of soils mapped at the surface and proximity to historic-era water sources, it is estimated that seven of the 58 retirement work areas and associated trenches have a high or very high potential for the presence of buried archaeological resources. They include Work Areas 1, 16, 17, 33, 36A, 43, 44 and the trench extending between Work Areas 43 and 44. The remaining retirement work areas and trenches are in very low to moderate sensitivity areas. The Vallecitos Road valve replacement work area was also identified as having high buried site sensitivity.

Paleontological Resources

A significant paleontological resource (or fossil) is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research.

Geologic mapping indicates that portions of the project area underlain by the Cretaceous age unnamed sandstone and shale of the Great Valley Sequence, Miocene age Monterey Group and Briones Formation, Pliocene to Pleistocene age Livermore Gravels, and Pleistocene to Holocene age Quaternary alluvium. At least 30 vertebrate localities from within the Mesozoic and late Cretaceous age deposits have been documented in Alameda County (University of California Museum of Paleontology [UCMP], 2014). These localities yielded fossilized specimens of large terrestrial and marine mammals, as well as rodents, birds, and fish.

Assessment of paleontological resources included results of a museum records search, review of available geologic and paleontologic literature and a pedestrian survey of the project area. The field survey was conducted during the period of July 1 to 3, 2014. The purpose of the field survey was to visually inspect the ground surface for exposed fossils and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. No fossils were observed during the course of the survey; however, there is low to high potential for fossils to be buried within the geologic units underlying the project area and they could potentially be affected by earth-moving activities. These Work Areas include 51, 53, 54, 55, and 59, and are located at the southwestern end of the pipeline.

3.5.4 Applicant-proposed Measures

The following APMs would be implemented:

- **APM CULT-1: Archaeological Monitoring During Construction.** Monitoring will be conducted by a qualified archaeologist during excavation activities at Work Areas 1, 16, 17, 33, 36A, 43, 44, and the Vallecitos Road valve replacement work area. In addition, monitoring will be conducted at Work Area 2 because it is located within the plotted boundary of prehistoric midden sites.
- **APM CULT-2: Prehistoric or Historic-Period Materials Discovered During Construction.** If concentrations of prehistoric or historic-period materials are encountered during ground-disturbing work, all work in the immediate vicinity of the discovery will be halted until a qualified archaeologist can evaluate the significance of the find and inform the Lead Agency. If the find is determined to be significant and the landowner consents, PG&E will determine the appropriate avoidance measures or other appropriate mitigation in consultation with a qualified archaeologist, landowner, and the Lead Agency. With the permission of the landowner, significant cultural materials will be curated according to current professional standards.
- **APM CULT-3: Human Remains Encountered During Construction.** Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered during any project-related activity, the following will be implemented:
  - Stop all work within 100 feet;
  - Immediately contact a PG&E Cultural Resource Specialist, who would then notify the County coroner;
  - Secure location, but do not touch or remove remains and associated artifacts;
  - Do not remove associated spoils or pick through them;
  - Record the location and keep notes of all calls and events;
  - Inform the Lead Agency and
  - Treat the find as confidential and do not publically disclose the location.

  If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of such identification. The NAHC must notify the Most Likely Descendant (MLD), once human remains are determined likely to be Native American by the Coroner, as required by California Health & Safety Code Section 7050.5. The MLD (i.e., the Native American Group the NAHC determines is the most likely descendent) will work with the PG&E Cultural Resource Specialist to develop a program for re-interment or other disposition of the human remains and any associ-

ated artifacts. No additional work will take place within the immediate vicinity of the find until the appropriate actions have been implemented.

- **APM PAL-1: Paleontological Monitoring During Construction**. During construction, a qualified paleontological monitor will monitor all ground disturbance in previously undisturbed geologic units that extends to a depth of 3 feet below ground surface (BGS) in areas identified to have high paleontological sensitivity. These Work Areas include 53, 54, 55, 59, and 60, and are located at the southwestern end of the L-107 pipeline to be retired.
- **APM PAL-2: Stop-Work and Unanticipated Discovery Procedures.** In the event that previously unidentified paleontological resources are uncovered during construction of the project, all ground-disturbing work will be temporarily halted or diverted away from the discovery to another location. PG&E's paleontological resources specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery is significant, but can be avoided, and no further impacts would occur, the resource will be documented in the appropriate paleontological resource records and no further effort would be required. If the resource is significant, but cannot be avoided and may be subject to further impact, PG&E will evaluate the significance of the resources, and implement data recovery excavation or other appropriate treatment measures, in coordination with the landowner, and as recommended by a qualified paleontologist.

3.5.5 Impacts

Significance Criteria

Section 106 of the National Historic Preservation Act defines an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable or may be more remote in time or distance (36 CFR 8010.5[a][1]).

Similarly, under CEQA, a project that may result in any of the following may have a potentially-significant effect on the environment:

(a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5

(b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §21083.2

(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 dedicated cemeteries

(e) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

   1) listed or eligible for listing on the CRHR, or on a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

   2) a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.

Cultural Impacts

The following sections address the responses to the CEQA checklist questions for cultural and paleontological resources. The CEQA Guidelines ask:

(a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Two previously identified prehistoric archaeological resources are within the APE. These include two prehistoric shell middens recorded in 1950 (P-01-000048 and -000049). These resources were not relocated during the pedestrian

survey and may be inaccurately mapped or may be buried. The possible presence of these resources and the results of the buried resource sensitivity study suggests that the project area has seven locations with high or very high potential for encountering subsurface archaeological deposits. Excavations in these locations (Work Areas 1, 2, 16, 17, 33, 43, 44, and the trench between 43 and 44) would be monitored by a qualified archaeologist during construction as described in APM CULT-1.

Three previously identified historic-era resources are within the APE: a historic-era farm property (P-01-002174), the South Bay Aqueduct (P-01-010629), and the Olivina Winery Point of Historic Interest (P-01-011360). The historic-era farm property was determined to be ineligible for the National and California Register, and is not considered a historical resource for the purposes of CEQA. The South Bay Aqueduct (P-01-010629) and the Olivina Winery Point of Historic Interest (P-01-011360), the other two historical-era resources, have not been formally evaluated for National Register or California Register eligibility, but are assumed eligible for the National and California Register for the purposes of this project. The pipeline retirement activities would not physically alter either the Olivina Winery or the South Bay Aqueduct. While the retirement activities would impact the setting of both of these resources, this impact would be temporary and short-term and therefore would not alter any of the character defining features of the winery nor diminish the integrity of the winery's location, design, setting, materials, workmanship, feeling, and association.

Three new resources were identified during the survey; however, only two – the bowl mortar and ground stone tool, are within the APE. The two newly identified isolates are, by definition, ineligible for listing in the National and California registers and require no further management consideration. Therefore, the project would not adversely affect the significance of any known historical resources.

However, there is a possibility that buried, as-yet-unidentified resources may be discovered during construction. Therefore, excavations in locations with high or very high potential for encountering subsurface archaeological deposits (Work Area 1, 2, 16, 17, 33, 43, 44, and the trench between 43 and 44) would be monitored by a qualified archaeologist during construction as described in APM CULT-1.

In the event of an unanticipated discovery, APM CULT-2 (which is incorporated into the project) would ensure that the project would not result in a substantial adverse change in the significance of a historical resource. Impacts would be less than significant.

(b) Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?

The project area for the retirement activities has seven cut and cap sites in locations with high or very high potential for encountering subsurface archaeological deposits. However, it is unknown if any unique archaeological resources are present within the APE. In order to ensure the identification and evaluation of any buried resources excavations in these locations (Work Areas 1, 16, 17, 33, 36A, 43, and 44) and at Work Area 2 would be monitored by a qualified archaeologist during construction as described in APM CULT-1. The Vallecitos Road valve replacement work area was also identified as having high buried site sensitivity and would also be monitored by a qualified archaeologist during construction as described in APM CULT-1.

APM CULT-2 would be incorporated into the project if any cultural resource that may be considered a unique archaeological resource is encountered during project implementation. Therefore, impacts would be less than significant.

(c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

A project has the potential to create impacts to paleontological resources if the work affects sensitive, previously undisturbed sediment or sedimentary rock. Any resources that may have been present in the project footprint have since been destroyed or lack provenience due to pipeline installation, given that all Work Areas are in locations that have been subject to previous disturbance with initial pipeline installation in and maintenance activities. APM PAL-1 and APM PAL-2 require paleontological monitoring during construction and a work stop and assessment if any paleontological resources are discovered. Impacts would be less than significant.

(d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

There is no indication that the project area has been used for burial purposes in the recent or distant past; it is, therefore, unlikely that human remains would be encountered during construction. However, archaeological, historical, and prehistoric materials may be present within the project area and the possibility of encountering human remains that

may be associated with these items cannot be discounted. Incorporation of APM CULT-3 into the project ensures compliance with Section 7050.5 of the California Health and Safety Code and Public Resources Code 5097.98. Impacts related to the discovery of human remains would be less than significant.

(e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074?

There is no indication that there are tribal cultural resources in the project area. However, tribal cultural resources may discovered during project related ground disturbance. APM CULT-1 and APM CUL-2 require monitoring during construction and a work stop and assessment. Impacts related to the discovery of tribal cultural resources would be less than significant.

3.6 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
(ii) Strong seismic ground shaking?	☐	☐	☑	☐
(iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
(iv) Landslides?	☐	☐	☑	☐
(b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or 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 (1994), creating substantial risks to life or property?	☐	☐	☑	☐
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑

3.6.1 Introduction

This section describes the existing geology and soils setting and potential impacts from the proposed project.

3.6.2 Regulatory Setting

Federal

Federal Earthquake Hazards Reduction Act

In 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes through the establishment and maintenance of an effective earthquake hazards and reduction program. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The agencies responsible for coordinating NEHRP are the Federal Emergency Management Agency (FEMA), National Institute of Standards and Technology (NIST), National Science Foundation (NSF), and USGS. In 1990, NEHRP was amended by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of the agency responsibilities, program goals, and objectives. The four goals of the NEHRP are as follows:

1. Develop effective practices and policies for earthquake loss-reduction and accelerate their implementation;
2. Improve techniques to reduce seismic vulnerability of facilities and systems;

3. Improve seismic hazards identification and risk-assessment methods and their use; and
4. Improve the understanding of earthquakes and their effects.

State

Alquist-Priolo Earthquake Fault Zoning Act

Alquist-Priolo Earthquake Fault Zoning Act is the state law that focuses on hazards from earthquake fault zones. The purpose of this law is to mitigate the hazard of surface fault rupture by regulating structures designated for human occupancy near active faults. As required by the Act, the California Geological Survey (CGS) has delineated Earthquake Fault Zones along known active faults in California.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1997 to protect the public from the effects of strong ground shaking, liquefaction, landslides or other ground failure, and from other hazards caused by earthquakes. This Act requires the State Geologist to map areas subject to seismic hazards. In cases where site-specific seismic hazard risks are present, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design before development permits will be granted. Additionally, the Act requires a Standardized Natural Hazards Disclosure Statement form be completed by real estate sellers if a property is within one of the designated natural hazards areas.

Local

County General Ordinance Code

Because the CPUC has jurisdiction over the design, construction and operation of gas pipelines and associated facilities, the project is not subject to local discretionary regulations. The project is not subject to the Grading, Erosion and Sediment Control Ordinance (County General Ordinance Code, Chapter 15.36) given that issuance of a grading permit is a discretionary action.

City of Livermore Municipal Code

Chapter 3-05-300 of the City of Livermore Municipal Code states that excavations by any public agency or public utility for the installation, operation, inspection, repair, or replacement of any of its facilities is permitted.

City of Fremont Municipal Code

Chapter 18.205.030 of the City of Fremont Municipal Code states that work by public utilities and local public agencies in areas where the slope of the natural terrain is less than 5 percent are exempt from obtaining a grading permit. Regardless, the project is not subject to Chapter 18.205.030 of the City of Fremont Municipal Code given that issuance of a grading permit is a discretionary action that is preempted by the CPUC's discretionary authority.

3.6.3 Environmental Setting

Geology

The project area is situated within the Coast Ranges geomorphic province of California. A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and diastrophic history. The Coast Ranges extend about 600 miles from the Oregon border south to the Santa Ynez River in Santa Barbara County.

The northern and southern hillsides of the valley margins are primarily Quaternary gravels, while Pleistocene alluvial fans and fluvial deposits of varied ages are dispersed within and along the margins of the drainages that lead into the valley (Helley and Graymer, 1997). In contrast, the surface of the valley floor is dominated by Holocene alluvial fan and fluvial deposits of varied ages, as well as basin-floor clays and silty clays.

In the Livermore Valley portion of the project area, geological units include Holocene (recent) gravels in stream washes with Holocene to Pleistocene alluvium in the valley floor (Dibblee, 2006). Between the Livermore Valley and Vallecitos/ Sunol Valleys the bedrock formations at the project Work Areas primarily include nonconformably adjacent Pleistocene age Livermore Gravels and Tertiary marine deposits, with locally overlain Quaternary landslide deposits (Dibble, 1980a). In the Vallecitos and Sunol Valleys, washes are dominated by Holocene gravels, with Holocene to Plio-Pleistocene alluvium in the valley margins. From the Sunol Valley to the southwest end of the project area bedrock geology includes a mix of Tertiary marine deposits and the sandstone and shale of the Cretaceous age Panoche Formation, with locally overlain Quaternary landslide deposits (Dibble, 1980a and b).

Soils

Soils along the pipelines vary at each Work Area as a function of underlying geological formations and terrain. At the Livermore Valley Work Area, soils mostly consist of gravelly loams (Pleasanton, Livermore, and Positas Gravelly Loams) and very minor amounts of loams and clay loams, with riverwash sands and gravels in arroyo beds. Between the Livermore Valley and Sunol Valley, soils consist of a diverse mix of gravelly loams, clay loams, and deep clays, with the high degree of variability along this section mostly a function of geomorphology at the specific excavation site. In the Sunol Valley, soils consist of riverwash sands and gravels in stream beds, and with gravelly and silty loams in the valley floor. From the Sunol Valley to the southwest end of the project area, soils vary widely as a function of geomorphology at specific excavation sites, ranging from silt loams and clay loams through deep clay soils and shallow, poorly developed soils over bedrock on steeper slopes (NRCS, 2014).

In the Livermore Valley and portions of the Vallecitos Valley and Sunol Valley, soils are suitable for cultivated agriculture. Vineyards and orchards exist near some of the excavation sites. Because of slopes and the nature of the soils along the remainder of the alignment, soils are considered "marginal" for cultivated agriculture and most suited to rangeland grazing (NRCS, 2014).

Seismic Setting

The project area is located within a seismically active area of northern California, along the complex boundary margin between the North American and Pacific tectonic plates. Under the current tectonic regime, the Pacific Plate moves northwestward relative to the North American Plate at a rate of up to 2 inches per year. Although relative motion between these two plates is predominantly lateral (strike-slip), an increase in convergent motion along the plate boundary within the past few million years has resulted in the formation of mountain ranges and structural valleys of the Coast Ranges province.

At the latitude of the project area, the fault system that accommodates the plate movements comprises several major faults, including the San Andreas Fault, Hayward–Rodgers Creek Fault system, and Calaveras Fault. In addition, many other named and unnamed faults within the region accommodate the relative motion of these plates. The Hayward fault is mapped about 1.75 miles southwest of the southwest end of the project area, and the Calaveras fault crosses the project area at Calaveras Road in Sunol (Work Areas 41 and 42).

Since 1800, several earthquakes with magnitudes greater than 6.5 have occurred in the project region, including the 1868 magnitude 6.8 earthquake on the Hayward Fault, 1906 magnitude 7.9 San Francisco earthquake on the San Andreas Fault, and the more recent 1989 magnitude 6.9 Loma Prieta earthquake that occurred in the Santa Cruz Mountains. These earthquakes caused significant damage and ground failures in the San Francisco Bay region. The project area is not located within a State of California designated Alquist-Priolo Earthquake Fault Zone (CDMG, 1982a, 1982b).

Landslides and/or Liquefaction

The central and southern portion of the project area, excluding the Sunol Valley, is underlain by shallow bedrock and is not considered susceptible to liquefaction. Based on the Seismic Hazards Zone Map published by the CGS (2004 and 2008), the northeast low-lying portion of the project area approximately within 0.25 mile on either side of Arroyo Valle in the Livermore Valley and a thin swath straddling Calaveras Creek in Sunol have been mapped in a liquefaction zone. The steeper portions of the slopes along the pipeline route are in an earthquake-induced landslide zone mapped by the CGS (2004 and 2008). In addition, portions of the hillside upslope of the route have been identified as debris flow source areas. No existing deep-seated landslides have been mapped within or adjacent to the project area (Dibblee, 2005; Graymer, et al., 1996).

3.6.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project 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?

The project would not result in the net increase of permanent aboveground infrastructure. Three pipeline retirement work areas at the northeast side of Sunol Valley (Work Areas 40, 41, and 60) are located within or in the immediate vicinity of the Alquist-Priolo Earthquake Fault Zone associated with the Calaveras Fault (CDMG, 1982a). All other retirement and valve replacement work areas are outside Alquist-Priolo Earthquake Fault Zones (CDMG, 1980 and 1982b). If ground rupture should occur at retirement Work Areas 40, 41, or 60, it would not expose people or structures to adverse effects due to the distance from these sites to developed and populated areas. At locations outside the Alquist-Priolo Earthquake Fault Zones, the potential for fault-induced ground rupture is low. Therefore, impacts would be less than significant.

(ii) Strong seismic ground shaking?

The likeliest seismic source of a large earthquake in northern California is the Hayward fault. The proposed project consists of permanently removing an existing gas pipeline from service. There would be no net increase in aboveground infrastructure. New infrastructure installed as a part of the valve repair work would be underground. Strong seismic ground shaking would have a less-than-significant impact due to the scope of work and largely rural nature of the project area.

(iii) Seismic-related ground failure, including liquefaction?

The southwestern low-lying portion of the Livermore Valley (northeast end of the project area) and small portions of the Sunol Valley have been mapped in a liquefaction zone (CGS, 2004 and 2008). The proposed project consists of permanently removing an existing gas pipeline from service. There would be no net increase in aboveground infrastructure. New infrastructure installed as a part of the valve repair work would be underground. Seismic-related ground failure, including liquefaction, would have a less-than-significant impact due to the scope of work and largely rural nature of the project area.

(iv) Landslides

The proposed project consists of permanently removing an existing gas pipeline from service. There would be no net increase in aboveground infrastructure. New infrastructure installed as a part of the valve repair work would be underground. Impacts from a landslide in the area would not expose people or structures to potential substantial adverse effects; impacts would be less than significant.

(b) Would the project result in substantial soil erosion or the loss of topsoil?

APM WQ-1 (presented in Section 3.8 Hydrology and Water Quality) requires preparation and implementation of a SWPPP. As part of this SWPPP, BMPs would be implemented to protect against soil erosion and to maintain water quality during construction. BMPs may include installation of silt fences, straw wattles/temporary berms, and installation of hydroseed and straw mulch after work is completed. Top soil excavated during construction would be segregated from other earth material, and then placed onsite after the excavations are filled. As a result, the project would not cause erosion of exposed soils; potential erosion and associated impacts would be less than significant.

(c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

Much of the upland portions of the project work areas are susceptible to landslides; however, because of the minimal footprint of each excavation site and the fact that the sites would be restored, the potential of landslide associated with project activities is low.

Ground subsidence usually occurs in valleys and basins when underground fluids are extracted in large volumes. Due to shallow groundwater in the Sunol Valley, some minor dewatering of excavations may occur but, at other locations, the excavations are expected to be above the water table. Because little to no groundwater would be removed, there is minimal potential for subsidence due to project activities.

Although liquefaction potential exists in the Livermore Valley and Sunol Valley (CGS, 2004 and 2008), liquefaction or collapse is unlikely because there would be no net increase in aboveground infrastructure and because all work areas would be restored. Based on the scope of the project, the potential for ground subsidence, liquefaction, landslide, lateral spreading, and collapse is considered low and associated impacts would be less than significant.

(d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

In most of the Livermore Valley area, upland soils are sandy and gravelly or thin overlying bedrock, with very limited potential for expansivity. Some expansive soils are present in the Sunol Valley and in the area south of State Highway 84 between Livermore and Sunol (NRCS, 2014). However, because there would be no net increase in permanent aboveground structures, the project would not create risks to life or property; no impact would result.

(e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project does not include or require septic tanks or other wastewater disposal systems. Construction workers would use contractor-supplied portable toilets, the wastewater from which would be taken offsite to a wastewater treatment facility for processing. Therefore, no impacts would occur.

3.7 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑	☐

3.7.1 Introduction

This section describes the environmental setting and impacts related to hazards and hazardous materials. For the purposes of this analysis, the term "hazards" refers to risk associated with such issues as fires, explosions, exposure to hazardous materials, and interference with emergency response plans.

The term "hazardous material" is defined in different ways for different regulatory programs. For this analysis, "hazardous material" is defined by the California Health and Safety Code, Section 25501: "because of their quantity, concentration, or physical or chemical characteristics, (they) pose a significant present or potential hazard to human health and safety or to the environment if release into the workplace or the environment."

"Hazardous waste" is a subset of hazardous materials. For this analysis, "hazardous waste" is defined by the California Health and Safety Code Section 25517, and in 22 CCR Section 66261.2: "because of their quantity, concentration, or physical or chemical characteristics, may either cause, or significantly contribute to an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed."

3.7.2 Environmental Setting

In unincorporated Alameda County, several residences are located in the vicinity of work areas; the closest being approximately 65 feet from Work Area 48 and approximately 280 feet from the Vallecitos Road valve replacement work area. In Livermore, the closest residence is located approximately 80 feet south of Work Area 9, and the closest residential neighborhood is located approximately 155 feet north of Work Area 9. In Fremont, the closest residential neighborhood is located approximately 0.6 mile southwest of Work Area 59. A rural residence east of Fremont is located within 180 feet of Work Area 57.

No existing or proposed schools have been identified within one-quarter mile of the project area. The nearest schools to the work areas include Sunset Christian School located in Livermore (approximately 1 mile north of Work Area 12 and 13), Sunol Glen Elementary School in Sunol (approximately 0.9 mile northwest of Work Area 60 and 1.9 miles west of the Vallecitos Road valve replacement work area), and Mission San Jose High School located in Fremont (approximately 0.6 mile southwest of Work Area 59).

The project is not located within an airport land use plan, within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip.

The project area is not identified on a list of hazardous materials sites pursuant to Government Code Section 65962.5 (California Environmental Protection Agency [CalEPA], 2013). The only open remedial action in the vicinity of the project area is provided by Geotracker (SWRCB, 2014) and EnviroStor (Department of Toxic Substances Control [DTSC], 2014) and is a leaking underground storage tank (UST) cleanup site located at 3004 Andrade Road, Sunol; however, project excavation activities would not take place in this area.

Hazardous Materials

As described in the Project Description, the 13-mile-long pipeline segment to be removed from service would be tested for mercury. If contaminant levels are present in the pipeline that exceed state cleanup levels, the segment would be filled with a high pH cleaning solution and a PIGs would be pushed through the pipeline to clean the line. The cleaning liquids would be collected in designated storage tanks and sampled to determine appropriate disposal. Both the PIGs and cleaning liquids would be disposed of in accordance with all environmental regulations. After laboratory results are received, scrape samples and cleaning solution would be hauled to an approved disposal site in accordance with all applicable federal, state, and local regulations.

The valve replacement work includes a hydrotest of a new service pipeline to be installed at the Vallecitos Road work area. All hydrotest water would be tested and hauled to an approved disposal site in accordance with all applicable federal, state, and local regulations.

Fire Hazards

Fire protection in the project area is provided by the Alameda County Fire Department (ACFD). The California Department of Forestry and Fire Protection (CAL FIRE) has developed a Fire Hazard Severity Scale which uses three criteria to evaluate and designate potential fire hazards in wildland areas, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels, and fuel moisture contents), and topography (degree of slope). Based on these criteria, the project is located in moderate and high fire hazard severity zones as discussed in the Safety Element of the County's East County Area General Plan.

3.7.3 Applicant-proposed Measures

The following APMs would be implemented.

- **APM HAZ-1: Hazardous Substance Control and Emergency Response.** PG&E will implement its hazardous substance control and emergency response procedures. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored onsite. If it is necessary to store chemicals onsite, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available onsite, as applicable.

In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site excavation activities, the excavated soil will be tested and, if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

All hazardous materials and wastes, including pipeline cleaning solution and scrape samples, will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
- Stopping work and contacting the County's Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed after any necessary consultation and approval by the Hazardous Materials Unit.

PG&E will properly maintain all construction equipment to prevent leaks of fuels, lubricants, or other fluids into waterways. Emergency spill supplies and equipment will be kept adjacent to work areas and will be clearly marked. PG&E will take appropriate precautions when handling and/or storing chemicals (e.g., fuel and hydraulic fluid) near waterways and wetlands, and any and all applicable laws and regulations will be followed. Regular fueling and maintenance activities will be performed offsite; however, if service and refueling is necessary onsite, they will take place at least 100 feet from waterways or in an upland area at least 100 feet from wetland boundaries to prevent spills from entering waterways or wetlands unless appropriate spill control and containment areas are provided.

PG&E will complete its Emergency Action Plan Form as part of the Job Hazards Analysis preconstruction meetings on a daily basis. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and other relevant information which will be disseminated to all workers on the project.

- **APM HAZ-2: Fire Avoidance and Suppression.** CAL FIRE requires that PG&E select a welding site that is void of native combustible material and/or clearing such material for 10 feet around the area where the work is to be performed. PG&E will follow its standard practice for clearing in wildland areas. Project personnel will be directed to drive on areas that have been cleared of vegetation, park away from dry vegetation, and carry water, shovels, and fire extinguishers in all vehicles and equipment during times of high fire hazard. No trash will be burned on-site. Additionally, fire-suppression materials and equipment will be kept adjacent to work areas, and will be clearly marked as required by the Hot Work permit that will be obtained for the project.

3.7.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Pipeline cleaning included in retirement activities could generate contaminated water and cleaning fluids that would require transport and disposal. The solution used to clean retired pipe segments with high pH and/or mercury concentrations would be hauled offsite and disposed of at an approved facility. All hydrotest water generated from the valve repair work would be tested and hauled to an approved disposal site in accordance with all applicable federal, state, and local regulations. The excavation activities associated with this project, in general, do not pose a hazardous materials risk. However, construction equipment would require refueling and maintenance, and vehicles and equipment would not be refueled within 100 feet of a wetland or water body unless appropriate spill control and containment areas are provided as specified in APM WQ-2. Regular fueling and maintenance activities would be performed offsite, and appropriate materials would be onsite to prevent and manage spills. These procedures are detailed in APM HAZ-1 and would be outlined in the project-specific SWPPP, required pursuant to APM WQ-1. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; impacts would be less than significant.

(b) Would the project 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?

PG&E will properly maintain all construction equipment to prevent leaks of fuels, lubricants, or other fluids into waterways. Emergency spill supplies and equipment will be kept adjacent to work areas and will be clearly marked. PG&E will take appropriate precautions when handling and/or storing chemicals (e.g., fuel and hydraulic fluid) near waterways and wetlands, and any and all applicable laws and regulations will be followed. Regular fueling and maintenance activities will be performed offsite; however, if service and refueling is necessary onsite, they will take place at least 100 feet from waterways or in an upland area at least 100 feet from wetland boundaries to prevent spills from entering waterways or wetlands unless appropriate spill control and containment areas are provided as specified in APM WQ-2. Appropriate materials will be onsite to prevent and manage spills. These procedures are detailed in APM HAZ-1 and will be outlined in the project-specific SWPPP, required pursuant to APM WQ-1.

If hazardous substances are unexpectedly encountered, work would be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment, pursuant to APM HAZ-1. If excavation of hazardous materials is required, they will be handled, transported, and disposed of in accordance with all applicable federal, state, and local regulations. Therefore, 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; impacts would be less than significant.

(c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are no existing or proposed schools within one-quarter mile of the project area. Therefore, no impacts would occur.

(d) Would the project 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?

The project would not be located on a site that is included on the listing of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Excavation activities would not take place in the area of the leaking UST cleanup site on Andrade Road in Sunol. As such, no impact would occur.

(e) Would the project or 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?

The project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. As such, no impacts would occur.

(f) Would the project occur within the vicinity of a private airstrip, or would the project result in a safety hazard for people residing or working in the project area?

The project is not within the vicinity of a private airstrip. As such, no impacts would occur.

(g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would not impair implementation of, or physically interfere with, an emergency response plan or emergency evacuation plan. As a routine measure, emergency access and evacuation procedures would be developed and implemented as part of the onsite health and safety plan. If any road closures are necessary to conduct the work, PG&E would work with the local jurisdiction to implement traffic control. No impacts or interference with emergency plans or access would result from project implementation.

(h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Project activities at work areas would occur in areas primarily surrounded by annual grassland that is susceptible to wildland fires. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire.

CAL FIRE requires the use of spark arrestors on all internal combustion engines. In addition, work that involves flame, arcing, or sparking equipment (such as welding) during pipeline cutting could potentially result in the combustion of native materials located close to the site if insufficient controls are implemented. Open fires would not be allowed at or near Work Areas. Preventative measures would be implemented as described in APM HAZ-2. The potential for wildland fire attributable to the proposed project is low; impacts would be less than significant.

3.8 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 which would result in substantial erosion or siltation on- or offsite?	☐	☑	☐	☐
(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 which would result in flooding on- or offsite?	☐	☐	☑	☐
(e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
(f) Otherwise substantially degrade water quality?	☐	☑	☐	☐
(g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
(h) Place within a 100-year flood hazard area structures which 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) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

3.8.1 Introduction

This section documents the existing hydrological setting in the project area and evaluates the potential impacts of the project.

3.8.2 Regulatory Setting

Federal

The Clean Water Act (CWA) is the major federal legislation relating to water quality. Implementation of the CWA is the responsibility of both the EPA and the US Army Corps of Engineers; however, other agencies have been delegated primary regulatory responsibility for certain sections of the CWA.

Section 401 of the CWA requires a project that discharges a pollutant into waters of the U.S. to obtain certification that the project would not violate water quality standards. In California, the State Water Resources Control Board (SWRCB) and the nine RWQCBs have the primary responsibility for administering state and federal regulations related to water quality, including the Section 401 water quality certification.

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES), which requires any discharge of pollutants into waters of the U.S. be in compliance with an NPDES permit. In California, stormwater discharges associated with construction activities are covered by a statewide General Permit. This General Permit requires that a project with more than 1 acre of ground-disturbing activity:

- Develop and implement a SWPPP specifying BMPs that would prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving offsite into receiving waters.
- Eliminate or reduce nonstormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

Section 404 of the CWA prohibits discharge of fill or dredge material into waters of the U.S., including wetlands. Section 404 compliance is discussed further in Section 3.4, Biological Resources.

FEMA administers the National Flood Insurance Program, which subsidizes flood insurance to communities that limit development in floodplains. As part of this program, FEMA maps all U.S. areas that fall within a 100-year floodplain (i.e., areas with a greater than 1 percent annual probability of flooding). A majority of the project area is located within FEMA Zone X, which is an area determined to be outside of the 0.2 percent annual chance floodplain. Work Areas 1, 16, 43, and 44 are within a special flood hazard area subject to inundation by the 1 percent annual chance flood (100-year flood).

State

The Porter-Cologne Water Quality Act provides the basis for water quality regulation in California. The Act requires the nine RWQCBs adopt water quality control plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and existing water quality problems. The SWRCB and the RWQCBs have the authority under this act to regulate waste discharge to surface waters or land, and also to provide the certification required by Section 401 of the CWA as described above.

Under Sections 1600-1616 of the CFGC, CDFW regulates activities that substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material where it may pass into any river, stream or lake. Fish and Game Code Section 1602 requires an entity to notify CDFW prior to commencing any of the above activities

This is discussed further in Section 3.4, Biological Resources.

CEQA Guidelines Section 15065 specifies that a project may have a significant impact if it would substantially reduce the habitat of a fish or wildlife species. Such habitats may include riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by California Fish and Game Code Section 903. Impacts to species are discussed in Section 3.4, Biological Resources.

3.8.3 Environmental Setting

Climate

Alameda County has a Mediterranean climate characterized by warm, dry summers and cold, moist winters in the eastern portion of the County with a marine influence in the western portion of the County. In general, the amount of precipitation increases inland from the San Francisco Bay as the elevation increases (. The majority of annual precipitation in the County occurs as rain during the wet season that extends from November to April. The average annual precipitation for the County is 23 inches (USA.com, 2013). However, California has experienced drought conditions since 2011. Governor Edmund G. Brown Jr. declared a drought state of emergency in January 2014 and directed state agencies to take all necessary actions to respond to drought conditions. In April 2014, Governor Brown announced the first-ever 25 percent statewide mandatory water reductions and a series of actions to help save water,

increase enforcement to prevent wasteful water use, streamline the state's drought response, and invest in new technologies to make California more drought resilient.

Surface Water Resources

The project is located in the Alameda Creek Watershed. The watershed covers an area of about 633 square miles in the East Bay, 30 miles southeast of San Francisco. There are two major drainage basins within the greater watershed, including the Livermore Drainage and the southern Alameda Creek watershed (also referred to as the Sunol Drainage Unit). Significant tributaries of Alameda Creek are Arroyo de la Laguna, Arroyo Mocho, and South San Ramon Creek. The Arroyo Valle is regulated at Del Valle Dam and is a tributary to Arroyo de la Laguna. Surface water resources in the County include creeks, drainages, sloughs, swales and other wetlands. Water supply sources include local surface streams, imported surface water, desalination, groundwater, and a small amount of recycled wastewater. About 70 percent of the urban supplies are imported to the region.

Most water needs in the project area are provided by the Zone 7 Water Agency (officially known as the Alameda County Flood Control and Water Conservation District) which provides service through a number of small water retail companies. The Zone 7 Water Agency obtains water from storage in the Del Valle Reservoir, the Sacramento–San Joaquin Delta through the State Water Project, and groundwater resources in the Livermore Valley (Zone 7, 2014).

Water service to the small unincorporated town of Sunol is provided by the San Francisco Public Utilities Commission (SFPUC), which operates a water treatment plant in the area. Water for the SFPUC comes mainly from water storage at the Hetch Hetchy Reservoir that is then conveyed to SFPUC reservoirs and storage facilities in the Bay Area. Other water supply includes water storage from local sources at Calaveras Reservoir, as well as some local run-off into SFPUC Bay Area reservoirs. In remote portions of the project area, small isolated users may receive water service from domestic/agricultural wells.

Areas downstream of the project area are served by the Alameda County Water District (ACWD), which obtains a significant portion of its water supply from the aquifers within the Niles Cone Groundwater Basin.

Groundwater Resources

The two primary groundwater basins in the project area include the Livermore Valley Groundwater Basin (including Work Areas 1 through approximately 20) and the Sunol Valley Groundwater Basin (including Work Areas 42 through 49) (California Department of Water Resources [DWR], 2003). All other Work Areas are in upland areas typically in areas of shallow bedrock and outside recognized groundwater basins.

The Livermore Valley Groundwater Basin (Basin 2-10) encompasses most of the Livermore Valley, and is a major source of drinking, irrigation, and industrial water for the Zone 7 Water Agency that supplies the Livermore and Amador Valleys. In the north, central, and southeastern portions of this basin, the uppermost unit is Valley Fill, which consists of gravel, sand, slit, and clay units that are a few tens to 400 feet thick. The Livermore Formation (Livermore Gravels) that underlies the Valley Fill is up to 4,000 feet thick; consists of gravel, sands, silts, and clays; and is present at the surface in the southern and southeast portion of the basin, which encompasses the project area. The Livermore Groundwater Basin is underlain by the Tassajara Formation, which consists of consolidated sedimentary rocks and generally provides very limited groundwater yields. Groundwater recharge to this basin is through direct infiltration of precipitation and stream beds. The estimated total storage of the Livermore Valley Groundwater Basin is 500,000 acre-feet (DWR, 2003).

The Sunol Valley Groundwater Basin (Basin 2-11) encompasses the Sunol Valley. The description for this basin has not been completed (DWR, 2003); however, based on available information, it consists of sand and gravel aquifers with silt and clay units. Primary sources of recharge to this basin include direct precipitation and streambed infiltration from Sunol Creek and Alameda Creek.

The Niles Cone Groundwater Basin (Basin 2-9.01) is east of the project area; however, creeks within the Alameda Creek watershed provide it groundwater recharge once these creeks flow out of the East Bay Hills and into the East Bay Plain (DWR, 2003).

Groundwater is anticipated at 30 to 40 feet BGS at the L-131 valve replacement work areas. At the lower elevations along the L-107 retirement work areas groundwater is anticipated to range from 5 to 15 feet BGS.

3.8.4 Applicant-proposed Measures

The following APMs will be implemented.

- **APM WQ-1: SWPPP Development and Implementation.** Prior to project initiation, PG&E will prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize impacts on surface water and groundwater quality. Implementation of the SWPPP will stabilize areas cleared of vegetation and reduce erosion and sedimentation. The plan will designate BMPs that will be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, silt fences, and visqueen placed around the pipeline to minimize debris from entering drainages will be installed before the onset of winter rains or any anticipated storm events. Suitable stabilization measures will be used to protect exposed areas during excavation work, as necessary. During work activities at the excavation sites, measures will be in place to prevent contaminant discharge from vehicles and equipment.

  The project SWPPP will include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, will be designed by using specific criteria from recognized BMP design guidance manuals, including but not limited to the California Stormwater Quality Association's (CASQA) *Construction BMP Handbook* (CASQA, 2010). Erosion-minimizing efforts may include measures such as the following:

  - Defining ingress and egress within the project area.
  - Implementing a dust control program during construction.
  - Properly containing stockpiled soils.

- Project activities that could affect water quality [or within 250 feet of streams and river courses] would take place during the dry season between April 15 and October 15 when rain events and flowing water in drainages are not anticipated, unless otherwise approved by CDFW. Temporary measures, such as silt fences or wattles intended to minimize sediment transport from disturbed areas, will remain in place until the areas have stabilized. The SWPPP will be updated during the project, as required.

- **APM WQ-2: Vehicles and Equipment Fueling and Maintenance.** Vehicle and equipment fueling and maintenance operations will be conducted in designated areas only; these areas will be equipped with appropriate spill control materials and containment. Vehicles and equipment will not be refueled within 100 feet of a wetland or water body unless approved by CDFW and appropriate spill control and containment is provided.

3.8.5 Impacts

The analysis of potential impacts was based on the CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project violate any water quality standards or waste discharge requirements?

Cleaning of the pipeline as part of the retirements work could generate contaminated water and cleaning fluids that would need to be disposed of. All pipeline cleaning liquids and material would be tested and hauled to an approved disposal site in accordance with all applicable federal, state, and local regulations if contaminant levels are found to exceed cleanup levels. Solution used to clean the pipeline that has a high pH and any cleaning or rinse water with high concentrations of mercury would be hauled offsite and disposed of at an approved facility. All hydrotest water generated from the valve replacement work would be tested and hauled to an approved disposal site in accordance with all applicable federal, state, and local regulations.

The project involves ground-disturbing excavation activities that could potentially cause soil erosion and release of excess sediment into drainages. Implementation of APM WQ-1 and MM B-4,including BMPs outlined in the CASQA's *Construction BMP Handbook,* would avoid and minimize degradation of water quality. The project would not violate any water quality standards or waste discharge requirements; the impact would be less than significant.

(b) Would the project 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)?

The project does not require the use of groundwater and does not include any features that would deplete groundwater supplies. Groundwater in the project area is anticipated at 30 to 40 feet bgs at the L-131 valve replacement

work areas. At the lower elevations along the L-107 retirement work areas groundwater is anticipated to range from 5 to 15 feet bgs. Little to no groundwater would be removed as part of project activities. Implementation of the proposed project would not create an increase in impermeable surfaces such that there would be any interference with groundwater recharge. Therefore, the project would have a less than significant impact on groundwater supply.

(c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite?

Construction in and nearby swales and streams is scheduled to occur during the dry season when rain events and high water flows are not anticipated. Pursuant to APM WQ-1, BMPs described in the SWPPP would be implemented to control runoff and erosion during any unanticipated wet weather.

Most work associated with the valve replacement work is outside of streams and river courses and would not alter existing drainage patterns. Work to remove overhead pipeline spans as part of the retirement work would require a small amount of excavation into channel banks and removal of the pipe from outside the bank using an excavator or crane. The embankments would be excavated by hand at the pipe, if this approach is determined necessary to allow the span to be separated below grade, and then an excavator would be used where necessary to remove additional soil and expose the pipe. The proposed project requires excavation within 10 drainages to remove aboveground pipeline spans or appurtenances as part of the retirement work. Construction would occur in the dry season when it's expected the drainages will be dry. Furthermore, most construction activities for span removals (all Work Areas listed above, except 37A) would avoid the streambed or only require work in the streambed for one to two days and work could be avoided if water becomes present in the channels.

At Work Area 37A, there will be a bell hole excavation to remove aboveground drip appurtenances within stream channel and removal of aboveground pipe feature from wetland. This work will result in temporary impacts to the bed, bank, and riparian habitat in an unnamed tributary to Vallecitos Creek. Removal of an aboveground pipe feature is expected to temporarily disturb approximately 0.02 acre of streambed below the ordinary high water mark in USACE jurisdiction and an additional 0.01 acre of adjacent riparian habitat.

Pursuant to Biological Resources and Water Quality APMs (APMs BIO-13, BIO-14, WQ-1), work would be conducted during the dry season when the local streambeds are expected to be dry. If the streambeds are not dry in Work Area 37A or other sites, excavation zones would be isolated from the stream using barriers and temporarily dewatered. Excavated soils will be stockpiled in an adjacent upland area beyond the top of the creek bank, and replaced following removal of the above ground pipe features The topography would be recontoured. A SWPPP would be developed and implemented to avoid and minimize impacts to water quality.

If water is present in the drainage at Work Area 37A, construction would temporarily alter its drainage pattern; however, work would only be necessary at this location for a short period and this Work Area does not extend across the entire channel. Implementation of APM HWQ-1 would ensure water is diverted around the Work Area and no substantial alteration to the channel occurs. This is a less than significant impact and no mitigation is required.

Any affected drainage would be temporarily dewatered, if necessary, in accordance with Mitigation Measure HWQ-1, which requires that water be diverted to maintain natural flows to the greatest extent feasible and minimize erosion. Implementation of APM HWQ-1 and MM B-4 as part of the project would minimize erosion. After construction, all channel bank and bed contours would be restored as close to existing conditions as possible and revegetated if necessary. The potential to substantially alter the existing drainage patterns would be less than significant with implementation of Mitigation Measure WQ-1.

MM HWQ-1 Prepare and Implement a Water Diversion and Dewatering Plan. Although flowing water is not expected at work areas located near drainages, a Water Diversion and Dewatering Plan shall be prepared and provided to CDFW for review and approval 30 days prior to the start of construction. The Plan shall include specific provisions for each site where dewatering or diversion could possibly be necessary and measures to maintain natural flows to the greatest extent feasible and minimize erosion. Water diversions (e.g., coffer dam, sand bags) around channel bank work areas would be installed if there is a 30 percent or greater chance of precipitation forecasted as shown in the National Oceanic and Atmospheric Administration (NOAA) website at www.NOAA.gov

MM HWQ-2 Restore Swale and Channel Contours. Upon completion of excavation burial, and prior to October 15 in any construction year, swale and channel contours shall be restored to previous contours.

(d) Would the project 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 which would result in flooding on- or offsite?

For the retirement work, excavation of channel banks would be temporary and existing drainage patterns would be restored, as discussed above in Section 3.8.5 (c). Underground infrastructure installed during valve work would not affect existing drainage patterns, as all work areas would be restored to preproject conditions at the completion of construction. The only new aboveground infrastructure would result from the relocation of the distribution regulators associated with the valve work. However, the project would not result in a net increase in aboveground structures because the existing distribution regulators would be removed. The new distribution regulators would have a similar footprint to facilities they are replacing and the drainage pattern would be the same or similar to existing conditions.

The rate or amount of surface runoff in the area would be the same or similar to existing conditions and no changes in flooding would result. This impact would be less-than-significant.

(e) Would the project 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?

As discussed in Section 3.8.5 (c) above, the majority of the work would be conducted during the dry season and BMPs described in the SWPPP would be implemented to control runoff and erosion during any unanticipated wet weather. As discussed in Impact 3.8.5 (d), there would be no significant increases or change in impermeable surfaces or runoff as a result of the project. Implementation of APM WQ-1 and MM B-4, would allow the project to be conducted without generating runoff water that would exceed the capacity of existing or planned stormwater drainage systems. The project would not be a source of substantial polluted runoff. This impact would be less than significant.

(f) Would the project otherwise substantially degrade water quality?

As discussed in Impact 3.8.5 (c), the majority of the work would be conducted during the dry season and BMPs described in the SWPPP would be implemented to control runoff and erosion during any unanticipated wet weather. All temporarily disturbed work areas would be restored as close to pre-project conditions as possible prior to seasonal rains (October 31). Impacts on water quality would be less than significant.

(g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project does not involve the construction of housing.

(h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Work Areas 1, 16, 43, and 44 are within a special flood hazard area subject to inundation by the 1 percent annual chance flood (100-year flood). The retirement work consists of permanently removing an existing gas pipeline from service. There would be no net increase in aboveground infrastructure, and no new infrastructure would be installed within a 100-year flood hazard area. No impacts would occur.

(i) Would the project 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?

The project does not involve work near levees or dams; and, as a result, would not expose people or structures to risk involving failure of a levee or dam. Therefore, no impact would occur.

(j) Would the project be exposed to inundation by seiche, tsunami, or mudflow?

The project would not expose people to risk related to the failure of any dams or levees. The project work areas are inland and not in an area subject to seiche, tsunami, or mudflow. Therefore, no impact would occur.

3.9 Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?	☐	☐	☐	☑

3.9.1 Introduction

This section includes information on the regulatory and environmental setting and includes analysis of potential land use impacts resulting from the project. No impacts are anticipated to existing or planned land use.

3.9.2 Regulatory Setting

Because the CPUC has jurisdiction over the design, construction and operation of gas pipelines and associated facilities, the project is not subject to local discretionary regulations. This section includes a description of local plans and policies related to land use and planning issues generally, and is provided for informational purposes to assist CEQA review.

County's East County Area General Plan

The East County Area General Plan Open Space diagram designates most of the land in the project area as either Parklands, Resource Management, Large Parcel Agriculture, or Water Management (County of Alameda, 2000).

The East County Area General Plan contains the following general policies related to gas facilities:

- **Policy 285.** The County shall facilitate the provision of adequate gas and electric service and facilities to serve existing and future needs while minimizing noise, electromagnetic, and visual impacts on existing and future residents.
- **Policy 286**. The County shall work with PG&E to design and locate appropriate expansion of gas and electric systems.

City of Livermore General Plan

The City of Livermore General Plan designates land use in the project area as Open Space/Agriculture. Residential housing is located in close proximity to the project area, in Livermore. Access to the project area in the vicinity of Work Areas 9 and 10, would be through the residential housing area. Land use in this area is designated Developed Single Family Residential (City of Livermore, 2004).

The City of Livermore General Plan contains the following general policies related to gas facilities:

- **Goal INF-4.** Provide utilities in ways that are safe, environmentally acceptable, and financially sound.
- **Objective INF-4.1.** Facilitate the development and maintenance of all utilities at the appropriate levels of service to accommodate the City of Livermore's projected growth.
- **Policy P1.** The City of Livermore shall ensure that utilities, including electricity, natural gas, telecommunications, and cable, are available or can be provided to serve the projected population within the City in a manner which is fiscally and environmentally responsible, aesthetically acceptable to the community, and safe for residents. However, the ultimate responsibility for ensuring that the utilities are available to support new development rests on the sponsor(s) of proposed projects.

City of Fremont General Plan

The City of Fremont General Plan designates most of the land in the project area as Hill Area. Within the Hill Area, the General Plan further designates the project area as Hillside Open Space (Measure A), and Hill Area Open Space (Measure T) (City of Fremont, 2011). The project area is zoned by the City as Open Space (O-S). (City of Fremont, 2009).

The City of Fremont General Plan contains the following policies related to the project:

- **Policy 9-4.1 – Planning Consistency.** Work with PG&E to ensure that their long-range plans are consistent with the Fremont General Plan and that infrastructure is sufficient to support new development.
- **Policy 9-4.2 – Encourage PG&E to Upgrade Infrastructure.** Encourage PG&E to evaluate and upgrade aging infrastructure throughout Fremont.

3.9.3 Environmental Setting

The County has designated the project area as Parklands, Resource Management, Large Parcel Agriculture, or Water Management in the East County Area General Plan. Descriptions of land use designations are provided below (County of Alameda, 2000):

- **Parklands.** This designation provides for existing and planned public parks, open space, and recreational uses including community, subregional, and regional facilities.
- **Resource Management.** This Land Use Designation requires a minimum parcel size of 100 acres. This designation permits agricultural uses, recreational uses, habitat protection, watershed management, public and quasipublic uses, areas typically unsuitable for human occupation due to public health and safety hazards such as earthquake faults, floodways, unstable soils, or areas containing wildlife habitat and other environmentally sensitive features, secondary residential units, active sand and gravel and other quarries, reclaimed quarry lakes, and similar and compatible uses.
- **Large Parcel Agriculture.** This Land Use Designation requires a minimum parcel size of 100 acres and allows public and quasipublic uses. The project area is located within the County's Agricultural Zoning District, which was established to promote implementation of agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare (County of Alameda, 2013).
- **Water Management.** This Land Use Designation requires a minimum parcel size of 100 acres. This designation provides for sand and gravel quarries, reclaimed quarry lakes, watershed lands, arroyos, and similar and compatible uses. The City of Livermore Community General Plan designates the portion of the project area within City boundaries as Open Space/Agriculture and Developed Single Family Residential. Open Space and Agriculture designations are applied primarily to outlying areas of the City, creating a "greenbelt" around the City and preserving Livermore's agriculture and scenic vistas. Single Family Residential is the predominant existing land use in Livermore. It refers to parcels which contain a single residence and related structures, such as garages and sheds (City of Livermore, 2004).

The City of Fremont General Plan designates Hillside Open Space (Measure A) as applicable to rural parcels generally lying east of Mission Boulevard and/or I-680, up to the toe of the hill. Compatible uses include passive outdoor recreation, agriculture, and rural residential development. Future residential development in this area may not exceed one unit per acre for unconstrained land and one unit per 4 acres for constrained lands (City of Fremont, 2011).

Hill Area Open Space (Measure T) applies to the City of Fremont's eastern Hill Area and includes all land above the toe of the hill. The toe of the hill is the line along the base of the hills where the natural grade first becomes 20 percent or greater. The area defined by Measure T is further identified as "Hill Face Open Space" and the "Hill Open Space." Within "Hill Face Open Space," very low-density uses may be allowed at a density of one unit per 20 acres for existing parcels, outdoor recreation and limited public and quasipublic uses, and grazing and other agricultural activities are also allowed. Within "Hill Open Space" very low density residential uses may be allowed at a density of one unit per 20 acres for existing parcels and one unit per 100 acres for any future annexed parcels. Limited outdoor recreation and other agricultural activities are also allowed (City of Fremont, 2011).

3.9.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project physically divide an established community?

The project area is located in rural locations and primarily in unincorporated Alameda County, including Sunol, with small portions in the Cities of Livermore and Fremont. Construction activities would be temporary at all project work areas. The only aboveground structures resulting from the project would be distribution regulator sets that would replace two existing distribution regulator sets with similar footprints. The project would not result in the physical division of an established community, and no impact would occur.

(b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

There are no local agencies with jurisdiction over the project activities. However, the project would be consistent with the policies of the East County Area General Plan and the Cities of Livermore and Fremont General Plans listed above. None of the state or federal agencies with jurisdiction over the project – those issuing permits – have any other plans or policies regulating the project work locations. Therefore, no impact would occur.

(c) Would the project conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?

The project is not located within an approved Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) permit area, and as such, would have no impact.

3.10 Minerals

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.10.1 Introduction

This section discusses potential minerals found in Alameda County and the potential for minerals to be present and recoverable in the project area.

3.10.2 Regulatory Setting

Federal

There are no specific federal regulations applicable to mineral resources.

State

Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act of 1975 (SMARA) was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA (Public Resources Code § 2710 et seq.; subsequently amended) is the primary regulation for onshore surface mining in the state. SMARA mandated that aggregate resources throughout the state be identified, mapped, and classified by the state geologist so that local governments could make land use decisions in light of the presence of aggregate resources and the need to preserve access to those resources. Local jurisdictions are required to enact specific plan procedures to guide mineral conservation and extraction at particular sites, and to incorporate mineral resource management policies into their general plans. The Division of Mines and Geology has prepared Mineral Land Classification Maps for aggregate resources. The Mineral Land Classification Maps designate four different types of resource sensitivities. The four sensitivity types are:

1. **Mineral Resource Zone 1 (MRZ-1).** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood for their presence exists.
2. **MRZ-2.** Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
3. **MRZ-3.** Areas containing mineral deposits the significance of which cannot be evaluated from available data.
4. **MRZ-4.** Areas where available information is inadequate for assignment of any other MRZ zone.

3.10.3 Environmental Setting

Major mineral resources within Alameda County include: sand and gravel, salt, stone, petroleum, and clays (County of Alameda, 1994). The following minerals are present in the County and extraction has been reported: asbestos, bromine, chromite, coal, copper, gold, lead, lime, magnesite, magnesium compounds, manganese, potash, pyrite, silica, silver, soapstone, and travertine (County of Alameda, 1994).

According to the Conservation Element of the City of Livermore General Plan, much of the valley floor south of Interstate 580 (I-580) is classified as an area of significant mineral resources, due to the high value of sand and gravel deposits. This portion of the valley floor includes areas classified as MRZ-2 and MRZ 3 (City of Livermore, 2004).

According to the Conservation Element of the City of Fremont General Plan, mineral resources within City limits include construction aggregate (sand, gravel, and crushed rock), salt, and other resources (clay, mineral springs, and limestone) (City of Fremont, 2011). These resources are designated by the state as regionally significant; however, there are currently no active mining operations in the work areas. A mining operation is located between Work Areas 44 and 46 immediately adjacent to both work areas. There are no known mineral resources within the project area.

3.10.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project 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?

Mineral resources exist within the County. A mining operation is located between Work Areas 44 and 46. No work locations are within this mining property. The pipeline segment that traverses it would be slurry filled via excavation sites on adjacent properties. These project activities would not result in the loss of availability of a known mineral resource. No impact would occur.

(b) Would the project 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?

As discussed above, mineral resources exist within the County though no mining operations exist within the project work areas. The project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

3.11 Noise

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) 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) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
(d) 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 or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

3.11.1 Introduction

This section analyses the potential noise sources associated with construction activities. The analysis concludes that noise impacts would be temporary and less than significant.

3.11.2 Regulatory Setting

Federal

There are no federal regulations that limit overall environmental noise levels for this type of project.

State

Although there is no statewide noise regulation or specific threshold for determining what constitutes a maximum allowable absolute noise level or a substantial increase in noise level, the CEQA Checklist identifies the general types of impacts that must be considered when analyzing a project's potential to result in temporary and permanent impacts on sensitive receptors as a result of noise.

Local

Although the project is not subject to local land use regulations, land use plans and ordinances in the area related to noise are discussed to assist in the CEQA evaluation.

County Noise Control Ordinance

The County has established noise limits in Chapter 6.60 (Noise) of Title 6 of its Code of Ordinances. Noise associated with construction is exempted from the provisions of the Noise Control chapter of the code as long as construction activities take place between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 5:00 p.m. on weekends.

City of Livermore Municipal and Development Code Noise Element

The City of Livermore regulates noise emissions through Chapter 9.36 of its Municipal and Development Code, which includes the following sections:

- **9.36.040 – Blowers, Fans, and Combustion Engines.** The operation of any noise-creating blower, power fan or internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, is prohibited, unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device to deaden such noise in such a manner so as not to be plainly audible at a distance of either 75 feet from the source of the noise, or between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday and Thursdays; 8:00 p.m. Friday to 9:00 a.m. on Saturday, or at all on City-observed holidays. (Ord. 1672 § 1, 2002; Ord. 1128 § 2, 1983; 1960 code § 13B.3(g)).
- **9.36.080 – Hammers, Pile Drivers, Pneumatic Tools, and Similar Equipment.** The operation between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday and Thursdays; 8:00 p.m. Friday to 9:00 a.m. on Saturday or at all on city-observed holidays of any pile driver, pneumatic tools, derrick, electric hoist, sandblaster or other equipment used in construction, demolition or other repair work, the use of which is attended by loud or unusual noise, is prohibited. (Ord. 1672 § 2, 2002; Ord. 1128 § 2, 1983; 1960 code § 13B.3(f)).

City of Fremont General Plan Safety Element

The 2011 Safety Element of the City of Fremont General Plan includes the following goals and policies related to noise:

- **Policy 10-8.5.** Control construction noise at its source to maintain existing noise levels, and in no case to exceed the acceptable noise levels.
- **Policy 10-8.6.** Protect schools, hospitals, libraries, places of religious worship, convalescent homes, and other noise-sensitive uses from noise levels exceeding those allowed in residential areas.

3.11.3 Environmental Setting

The project is primarily located in a relatively sparsely developed area of the County. Noise-sensitive receptors are facilities or areas (e.g., residences, hospitals, schools, churches, or public libraries) where excessive noise may cause annoyance. In unincorporated Alameda County, several residences are located in the vicinity of the work areas; the closest being approximately 65 feet from Work Area 48 and approximately 280 feet from the Vallecitos Road valve work area. In Livermore, the closest residence is located approximately 80 feet south of Work Area 9, and the closest residential neighborhood is located approximately 155 feet north of Work Area 9. In Fremont, the closest residential neighborhood is located approximately 0.6 mile southwest of Work Area 59. Rural residences east of Fremont are located within 180 feet of Work Area 57.

The nearest schools to the work areas include Sunset Christian School located in Livermore (approximately 1 mile north of Work Area 12 and 13), Sunol Glen Elementary School in Sunol (approximately 0.9 mile northwest of Work Area 60 and 1.9 miles west of the Vallecitos Road valve work area), and Mission San Jose High School located in Fremont (approximately 0.6 mile southwest of Work Area 59). The nearest medical facilities and hospitals include Kaiser Permanente Medical Center and Washington Hospital in Fremont (approximately 3 miles northwest of Work Area 59, and 4.4 miles west of the Sheridan Road valve replacement work area), VA Medical Center in Livermore (approximately 1.3 miles south of Work Areas 12 and 13, and 5.1 miles east of the Vallecitos Road valve replacement work area), and Hacienda Care Center (approximately 2.3 miles north of Work Areas 9 and 10).

Existing ambient noise levels in the project vicinity have not been measured. The project is primarily within sparsely developed areas, which are relatively quiet. Existing noise generated by I-580 would be heard from western portions of the project work areas.

3.11.4 Applicant-proposed Measures

PG&E would implement the following measure as part of project design to ensure that noise impacts are less than significant:

- **APM NO-1 – Noise Minimization with Quiet Equipment.** Quiet equipment (e.g., equipment that incorporates noise-control elements into the design) would be used during construction whenever feasible. Construction would be consistent with applicable work hour and noise conditions specified in city and County encroachment permits obtained prior to construction. Engine exhaust points will be equipped with a muffler, and quiet model air-compressors or generators will be required. Use of equipment such as hammers, pile drivers, pneumatic tools, or other impact device that may create loud or unusual noise will be avoided at night whenever feasible or will be shrouded or provided with barriers to achieve a 5-decibel (dB) reduction during any night work.

3.11.5 Impacts

Noise impacts are evaluated in accordance with the significance criteria contained in Appendix G of the CEQA Guidelines. The CEQA Guidelines ask, would the project result in:

(a) 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?

With the exception of a few locations such as Work Area 48 and the Vallecitos Road valve work area, a majority of construction work would occur in sparsely populated, rural areas. The closest residence in unincorporated Alameda County is approximately 65 feet from retirement Site 48. The County exempts noise from construction activities that take place between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 5:00 p.m. on weekends. Similarly, City of Livermore prohibits noises from construction equipment between 6:00pm and 7:00am. City of Fremont limits constructions hours between 7:00 a.m. to 7:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on Saturday. In addition, Policy 10-8.5. requires minimization of construction noise to acceptable levels. The nearest sensitive receptor in Fremont is located approximately 180 feet from Work Area 57. Typical construction equipment and the typical A-weighted noise levels associated with their use (as measured at 50 feet) are presented in Table 3.11-1.

Table 3.11-1. Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Pickup Truck	55
Pumps	77
Air Compressors	80
Backhoe	80
Front-End Loaders	80
Portable Generators	82
Dump Truck	84
Tractors	84
Auger Drill Rig	85
Concrete Mixer Truck	85
Cranes	85
Dozers	85
Excavators	85
Graders	85
Jackhammers	85
Man Lift	85
Scrapers	85

Source: FHWA, 2006.

As shown in the table, the maximum noise generated from construction activity range between 80dBA and 85dBA at 50 feet. At 180 feet, noise attenuation would further reduce the noise to approximately 72dBA to 77dBA. Implementation of project design measure APM NO-1 would further reduce the noise. The project would use equipment capable of creating noise levels typical for construction, and these types of construction activities during daytime hours would be consistent with applicable policies, plans, and ordinances regarding noise. Crews typically would work from approximately 7:00 a.m. to 5:30 p.m., Monday through Saturday. Noise-related effects would be temporary and short-term, as work will move from one location to the next. Nighttime work is not planned as part of project construction. If nighttime work is deemed necessary during construction (i.e., local permit requirements, clearance work), night work would be limited to a maximum of 7 nights and would be limited in extent, duration, and equipment used. Final work hours would be approved by the local jurisdiction(s), at locations where encroachment permits are required.

Implementation of APM AG-1 (Notify Property Owners of Construction Activities) would require notification of landowners regarding construction and this would further reduce the potential disruptions to nearby land uses. Because the construction work would not expose persons to or generate noise levels in excess of standards established in the local general plans or noise ordinances; this impact would be less than significant and no mitigation is recommended.

(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The proposed activities are not expected to result in groundborne vibration to the residences located near the project area. No pile driving or similar activities that would result in groundborne vibration or noise would occur, and no impact would result.

(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The project involves gas pipeline retirement and valve repair work. No permanent increases in ambient noise levels would occur as a result of the proposed project; therefore no impact would occur.

(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction activities associated with the proposed project would require earth-moving equipment, trucks, and other equipment that would result in temporary increases in noise levels that exceed normal background levels. Purging pipelines of natural gas would also create increased noise levels of approximately 110 dBA. However, L-107 has already been purged of natural gas, and purging activities at the two L 131 valve replacement work areas would last only a few minutes. Temporary project-related noise may be audible to those living in nearby residences. However, the noise impacts would be temporary and would occur between 7:00 a.m. and 5:30 p.m. Monday through Saturday, unless otherwise authorized by city or County encroachment permits or Lead Agency authorizations. Due to the temporary nature of construction, noise impacts would be less than significant.

(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 expose people residing or working in the project area to excessive noise levels?

The project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. As such, no impacts would occur.

(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project is not located within the vicinity of a private airstrip. As such, no impacts would occur.

3.12 Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
(c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

3.12.1 Introduction

This section describes the existing conditions and potential impacts to population and housing. The project would neither impact the regional or local population nor require the displacement of existing housing.

3.12.2 Environmental Setting

The majority of the project area is located in relatively sparsely developed areas within the County, including the unincorporated town of Sunol. Small portions of the project area are located near residential housing in the cities of Fremont and Livermore and unincorporated Alameda County. In unincorporated Alameda County, several residences are located in the vicinity of the work areas; the closest being approximately 65 feet from Work Area 48 and approximately 280 feet from the Vallecitos Road valve work area. In Livermore, the closest residence is located approximately 80 feet south of Work Area 9, and the closest residential neighborhood is located approximately 155 feet north of Work Area 9. In Fremont, the closest residential neighborhood is located approximately 0.6 mile southwest of Work Area 59. Rural residences east of Fremont are located within 180 feet of Work Area 57.

The majority of construction workers for the project are expected to come from the local area or commute from neighboring counties and cities. Over the course of the project, there will be approximately 84 workers. Because the local Bay Area workforce is anticipated to be sufficient, it is not expected that the construction workforce would relocate to the area and, therefore, would not cause a displacement of housing or people.

3.12.3 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project induce substantial population growth in an area, either directly or indirectly?

The retirements work would remove an existing pipeline facility from future use and there would be no increase in utility or infrastructure capacity. The valve replacement work would replace or repair existing infrastructure on L-131 to meet current gas utility standards and to meet the pipeline's designed MAOP. O&M of remaining gas infrastructure after construction is complete would not require any additional workers. The existing workforce is sufficient for the expected (up to) 84 workers required during the construction period and would not require workers to relocate to the area. The project would not alter the location, distribution, density, or growth rate of the population. No impact would occur.

(b) Would the project displace substantial existing numbers of existing housing units, necessitating the construction of replacement housing elsewhere?

The project involves the retirement of sections of L-107 and routine repair and replacement of existing infrastructure on L-131. Construction activities would not displace existing housing. No housing impacts would result from the project.

(c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing?

The majority of construction workers are expected to come from the local area or commute from neighboring counties and cities; no construction of replacement housing would be required. No population impacts would result from the project.

3.13 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 of the public services:				
(i) Fire protection?	☐	☐	☐	☑
(ii) Police protection?	☐	☐	☐	☑
(iii) Schools?	☐	☐	☐	☑
(iv) Parks?	☐	☐	☐	☑
(v) Other public facilities?	☐	☐	☐	☑

3.13.1 Introduction

This section describes the existing conditions and potential impacts to public services. Public services include fire and police protection and maintenance of public facilities, such as schools and hospitals. No impacts would occur to public services as a result of this project.

3.13.2 Environmental Setting

Fire Response and Protection

ACFD is responsible for providing emergency fire and medical response as well as fire prevention services to residents of the unincorporated areas of Alameda County, including portions of the project area. ACFD serves a daytime population of approximately 394,000 individuals and has 30 fire stations. The closest ACFD station near the southwestern end of project area is Station 9, located at 39609 Stevenson Place in Fremont, approximately 2 miles west of Work Area 59. The Livermore-Pleasanton Fire Department station nearest to the project area is Station 9, located at 1919 Cordoba Street in Livermore, approximately 1.6 miles north of Work Area 16.

CAL FIRE protects over 31 million acres of California's privately owned wildlands and provides varied emergency service in 36 counties via contracts with local governments. CAL FIRE station 14 is located at 11345 Pleasanton-Sunol Road in Sunol approximately 0.9 mile northwest of Work Area 60 and approximately 1.7 miles west of the Vallecitos Road valve work area.

The CAL FIRE Fire Resource and Assessment Program indicates that the project area is located within a moderate to high fire hazard severity zone (CAL FIRE, 2007). Severity is measured using three criteria, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents), and topography (degree of slope).

Law enforcement and emergency services in the project area are provided by the County Sheriff's Office, Fremont Police Department, and Livermore Police Department.

Schools and Medical Care

The nearest schools to the work areas include Sunset Christian School located in Livermore (approximately 1 mile north of Work Areas 12 and 13), Sunol Glen Elementary School in Sunol (approximately 0.9 mile northwest of Work Area 60

and 1.9 miles west of the Vallecitos Road valve work area), and Mission San Jose High School located in Fremont (approximately 0.6 mile southwest of Work Area 59). The nearest medical facilities and hospitals include Kaiser Permanente Medical Center and Washington Hospital in Fremont (approximately 3 miles northwest of Work Area 59, and 4.4 miles west of the Sheridan Road valve replacement work area), VA Medical Center in Livermore (approximately 1.3 miles south of Work Areas 12 and 13, and 5.1 miles east of the Vallecitos Road valve replacement work area), and Hacienda Care Center (approximately 2.3 miles north of Work Areas 9 and 10).Parks

The East Bay Regional Park District (EBRPD) and the Livermore Area Recreation and Park District (LARPD) administer the regional and local parks within the project vicinity. Nearby recreational uses include Del Valle Regional Park, which is located approximately 2 miles to the south of Work Areas 9 and 10 near Livermore; Sycamore Grove Park, which includes the Arroyo Del Valle Regional Trail that crosses the retirement pipeline between Work Areas 16, 17, 17A and 18 near Livermore; Independence Park and Ravenswood Park, located about 1 mile to the north of Work Areas 14 and 15 in Livermore; Mission San Jose Park, located about 1 mile to the southwest of Work Area 59 in Fremont; Buena Vista Park and Gomes Park, located about 1.4 miles to the west of Work Area 59 in Fremont; and Old Mission Park and Mission Field, located approximately 2 miles to the south of Work Area 59 in Fremont.

3.13.3 Applicant-proposed Measures

The following APM would be implemented:

- **APM PS-1 (Same as APM T&T-1) – Traffic Coordination.** Emergency service providers will be notified of the timing, location and duration of construction activities. Traffic control devices and signage will be used as needed.

3.13.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 of the public services:

(i) Fire protection?

and

(ii) Police protection?

The project activities are all construction oriented and located primarily in sparsely populated rural areas and would not adversely affect service ratios, response times, or other performance objectives for any of the public services or require new services. APM PS-1 would be implemented so that that emergency responders are aware of construction and can plan accordingly to avoid any potential delay in response times in the construction area. No impacts to fire and police protection would occur.

(iii) Schools?

The nearest school is located approximately 0.6 mile from the project area. No impacts to schools would occur as a result of the project.

(iv) Parks?

The proposed project would not result in an increase in population or visitors to the project area; therefore, there would be no increased demand on public services or need for governmental facilities, including parks. As a result, impacts related to the provision of or need for these facilities would not occur.

(v) Other public facilities?

The proposed project would not result in an increase in population or visitors to the project area. No impacts to other public facilities, including medical facilities, would occur as a result of the project.

3.14 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
(b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑
(c) Would the project conflict with established, designated, or planned recreation areas or activities?	☐	☐	☑	☐

3.14.1 Introduction

This section evaluates existing recreational opportunities in the project area and the project's potential to cause increases in use or the need for construction and expansion of recreational facilities. The project would not have impacts to recreational opportunities.

3.14.2 Environmental Setting

The EBRPD and the Livermore Area Recreation and Park District (LARPD) administer the regional and local parks within the project vicinity. Nearby recreational uses include Del Valle Regional Park, which is located approximately 2 miles to the south of Work Areas 9 and 10 near Livermore; Sycamore Grove Park, which includes the Arroyo Del Valle Regional Trail that crosses the retirement pipeline between Work Areas 16, 17, 17A and 18 near Livermore; Independence Park and Ravenswood Park, located about 1 mile to the north of Work Areas 14 and 15 in Livermore; Mission San Jose Park, located about 1 mile to the southwest of Work Area 59 in Fremont; Buena Vista Park and Gomes Park, located about 1.4 miles to the west of Work Area 59 in Fremont; and Old Mission Park and Mission Field, located approximately 2 miles to the south of Work Area 59 in Fremont.

There is also a private golf driving range, Country Drives, located at 3200 Andrade Road in Sunol. The property owners have requested that the pipelines be permanently removed from the property.

3.14.3 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The estimated peak workforce would be up to 84 people anticipated to come from the existing regional workforce. The project does not involve additional housing or population increases and would not create a new or increased demand for existing public parks or recreational facilities. No impact would occur.

(b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project does not include recreational facilities or involve the construction or expansion of existing recreational facilities. No impact would occur.

(c) Would the project conflict with established, designated, or planned recreation areas or activities?

The privately owned golf driving range, Country Drives, would be temporarily closed for up to six weeks during removal of L107 from the property. This closure would temporarily preclude use of the golf course. APM AG-1 requires advance notification of property owners, including the driving range, regarding the planned start of construction activities. This is intended to allow the driving range owners the opportunity to notify their customers in advance of the closure to avoid and minimize and disruptions. Impacts would be less than significant.

3.15 Traffic and Transportation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 or a change in location that results in substantial safety risks?	☐	☐	☐	☑
(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
(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?	☐	☐	☐	☑

3.15.1 Introduction

This section describes existing traffic and transportation conditions in the project area. Traffic would be generated by construction workers traveling to and from the work area, delivery of heavy equipment and construction materials, and travel between work areas. The project would not result in significant impacts to traffic and transportation.

3.15.2 Environmental Setting

Caltrans weight and load limitations for state highways apply to all California state and local roadways. The weight and load limitations are specified in the California Vehicle Code Sections 35550 to 35559. The provisions from the California Vehicle Code discussed below apply to all roadways and, therefore, are applicable to this project.

General Provisions

- The gross weight imposed on the highway by the wheels on any axle of a vehicle would not exceed 20,000 pounds (lb) and the gross weight on any one wheel, or wheels, supporting one end of an axle, and resting on the roadway, would not exceed 10,500 lbs.
- The maximum wheel load is the lesser of the following: a) the load limit established by the tire manufacturer; or b) a load of 620 lbs per lateral inch of tire width, as determined by the manufacturer's rated tire width.

Vehicles with Trailers or Semi-trailers

The gross weight imposed on the highway by the wheels on any one axle of a vehicle would not exceed 18,000 lbs and the gross weight on any one wheel, or wheels, supporting one end of an axle and resting on the roadway, would not exceed 9,500 lbs, except that the gross weight imposed on the highway by the wheels on any front-steering axle of a motor vehicle would not exceed 12,500 lbs.

Traffic service levels are expressed using a grade scale from A to F. A level of service (LOS) of A represents excellent operating conditions (no congestion) and an LOS of F represents failing conditions. Basic definitions are presented in Table 3.15-1, Level of Service Criteria for Roadways. It is possible that intersections currently operating at an LOS of E or F could become further congested if construction traffic is heavy. LOS measurements are generally calculated during the morning (7:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak hours, since these times typically represent the worst traffic conditions. LOS standards relate to average vehicle speed along roadways and volume to capacity ratios at intersections. These standards are used to determine where additional vehicle capacity is needed. The closest intersections to the project area that operate at an LOS of E or F in the City of Fremont are Auto Mall Parkway and Osgood Road approximately 2.8 miles south of the project area, and Mission Boulevard and Mowry Avenue approximately 2.9 miles southwest of the project area. The closest intersections to the project area that operate at an LOS of E or F in the City of Livermore are First Street and Las Positas Road/First Street and Southfront Road approximately 2.8 miles north of the project area, and Vasco Road and Industrial Drive approximately 3.2 miles northeast of the project area.

Table 3.15-1. Level of Service Criteria for Roadways

LOS	Traffic Flow Characteristics	Average Total Stopped Delay per Vehicle (in Seconds)
A	Free flow; insignificant delays	Less than or equal to 10
B	Stable operation; minimal delays	10–20
C	Stable operation; acceptable delays	20–35
D	Approaching unstable flow; queues develop rapidly but no excessive delays	35–55
E	Unstable operation; significant delays	55–80
F	Forced flow; jammed conditions	Greater than 80

WHEELS, operated by the Livermore Amador Valley Transit Authority (LAVTA), provides fixed-route bus and paratransit services near the project area.

The Bay Area Rapid Transit (BART) rail system station closest to the project area is the Fremont station approximately 2.5 miles from the southwestern end of Work Area 59 and the Dublin/Pleasanton Station approximately 8 miles north of the Sunol area portion of the work area.

3.15.3 Applicant-proposed Measures

The following APM would be implemented:

- **APM T&T-1 (Same as APM PS-1) – Traffic Coordination.** Emergency service providers will be notified of the timing, location, and duration of construction activities. Traffic control devices and signage will be used as needed.

3.15.4 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask:

(a) Would the project 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?

Over the course of the project there will be approximately 84 construction workers traveling to and from work areas in the 2017 construction period. Other construction-related travel such as the transportation of equipment and materials

would also be conducted during the 2017and 2018 construction windows. Construction of the proposed project would temporarily increase traffic on surrounding roadways. A majority of the work areas are in rural areas and the increase from 84 worker trips and construction vehicles will not substantially impact the existing Level of Service. In addition, PG&E will implement traffic control measures such as cones, barricades, warning signs, flaggers as required by encroachment permits. The project area is not served by any public transit service. The proposed project would not conflict with any applicable plans or policies regarding traffic or transportation and no impacts would result. This level of traffic would not conflict with any applicable plans or policies regarding traffic or transportation and no impacts would result.

(b) Would the project 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?

Existing intersections currently operating at an LOS of E or F are at least 2.8 miles from project construction sites. Temporary traffic generated by equipment and construction workers traveling to and from the primarily rural work areas would not be sufficient to lower the LOS on roadways or conflict with a congestion management plan. No impacts would result.

(c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The project involves gas pipeline retirement, repair, and replacement activities; it does not include air traffic. No impact would result from the project.

(d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The project does not include any design features that pose a hazard to others accessing the project area. No new access roads would be constructed, although overland access routes would be mowed or bladed as necessary to mitigate fire risk. No impacts would result.

(e) Result in inadequate emergency access?

Routes for emergency vehicles would be maintained throughout project construction, and impacts would be less than significant with implementation of APM T&T-1.

(f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

See response to (a). No impacts would result.

3.16 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
(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?	☐	☐	☐	☑

3.16.1 Introduction

This section evaluates the potential impacts of the project on utilities and service systems, including wastewater, solid waste, stormwater drainage facilities, and water supplies. The project would not result in impacts to utilities or service systems.

3.16.2 Environmental Setting

Water

Water is provided by several agencies in the project area. Zone 7 Water Agency is the water wholesaler for the City of Livermore and the County. California Water Service Company and Livermore Municipal Water provide retail service, and the City and County of San Francisco's Hetch Hetchy Regional Water System (operated by the SFPUC) provides water directly to Lawrence Livermore National Laboratory and Sandia National Laboratory. Water is provided to the City of Fremont by ACWD.

Water quality and drainage control measures are discussed in Section 3.8, Hydrology and Water Quality.

Wastewater

Within the City of Livermore, wastewater service is provided by the City of Livermore's Public Services Department. In the City of Fremont, wastewater service is provided by Union Sanitary District.

Landfills

According to the County website, there are three landfills, including Altamont Landfill and Resource Recovery Facility, Tri-Cities Landfill, and Vasco Road Landfill. Altamont Landfill, Resource Recovery Facility, and Tri-Cities Landfill are operated by Waste Management, while Vasco Road Landfill is operated by Republic Services, Inc.

3.16.3 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask, would the project:

(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

All water generated from the project would be analyzed and stored onsite until appropriate disposal methods are confirmed. If pipeline cleaning water is determined to exceed wastewater treatment requirements, it would be hauled offsite and disposed of in accordance with applicable state and federal law. No impacts would occur.

(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?

The project would not require or result in the construction of new or expansion of existing treatment facilities. Therefore, no impact would result.

(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?

The project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. Therefore, no impact would result.

(d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Water would be necessary for dust control, pipeline cleaning, and other minor uses. Water would primarily be trucked to the work sites from a municipal water source. Where practical, any accumulated groundwater would be beneficially reused under the SWPPP for construction purposes, including active dust control within the project work sites and overland access routes. It's estimated that up to approximately 30,000 gallons of water per day (gpd) would be needed. Existing municipal supplies are sufficient to provide water for the project. Construction of new or expansion of existing water facilities would not be required. Therefore, no impacts would result.

(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Portable toilets would be used at construction sites, and waste would be disposed of at a local wastewater treatment plant by the service provider. Pipeline cleaning water will be analyzed after use and stored onsite while suitability for discharge is confirmed. If pipeline cleaning water is determined to exceed wastewater treatment requirements, it would be hauled off site and disposed of in accordance with applicable state and federal law. No water would be discharged to land or to a wastewater treatment system unless it met the RWQCB requirements. There would be no additional operational needs for wastewater disposal. Therefore, no impact would result.

(f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Removed and replaced infrastructure on L-107 and L-131 would need to be disposed. The disposal method for the removed pipeline sections and features would be determined according to contamination test sample results. Decontaminated pipe and pipe with undetectable levels of contaminants might be recycled into scrap metal, disposed of as trash, or sold. Disposal of pipe deemed hazardous waste would be handled through the local PG&E environmental field specialist and in accordance with all applicable state and federal regulations. Trash and debris would be managed using dumpsters or roll-off bins. Debris would be hauled offsite for reuse or disposal as appropriate and would not affect permitted capacity at landfills. Therefore, no impact to landfill capacity would result.

(g) Comply with federal, state, and local statutes and regulations related to solid waste?

General types of solid nonhazardous waste produced during construction activities would include food, glass, paper, plastic, and materials that would be recycled and/or disposed of appropriately. Disposal of waste would comply with all applicable regulations and, therefore, no impacts would occur.

3.17 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Does the project have the potential to substantially 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, substantially 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) Does the project have impacts that are 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) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

3.17.1 Impacts

The analysis of potential impacts was based on CEQA Guidelines for the evaluation of impacts on the environment from a proposed project. The CEQA Guidelines ask, would the project:

(a) Have the potential to substantially 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, substantially 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?

Section 3.4, Biological Resources; Section 3.5, Cultural Resources; and Section 3.8 Hydrology and Water Quality discuss the existing resources in the project area and conclude that the project would result in less-than-significant impacts to all biological and cultural resources with implementation of mitigation measures. Based on the discussion in Sections 3.4, 3.5 and 3.8, the project does not have the potential to substantially 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, substantially 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 are 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)

Consistent with the CEQA Guidelines (Section 15065), a project could have a significant cumulative impact if the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, effects of present projects, and effects of probable future projects. Cumulative impacts can result from individually minor, but collectively significant, effects occurring over a period of time.

The project would result in less-than-significant impacts in all resource areas with implementation of mitigation measures. According to available online planning documents from the County, City of Livermore, and City of Fremont,

no development projects are proposed in the immediate vicinity of the project area, so that the project is unlikely to have any cumulative impacts.

(c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?

There are no significant environmental impacts resulting from the project and no adverse effects on human beings, directly or indirectly, would result from pipeline retirement activities or valve replacement activities.

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Appendix A

Project Area Photographs

Work Area 01

Work Areas 02-3, SAA Crossing, view southwest

Work Areas 04-5, view north

Work Areas 06 to 7-7A, SAA Crossing, view northeast

Work Areas 07-7A, view northwest

Work Area 08, view southwest

Work Area 09, view northeast

Work Area 10, view south

Work Area 12, view west-southwest

Work Area 13, view southwest

Work Areas 14-15, SAA Crossing, view southeast

Work Area 16, view west

Work Area 17, view northeast

Work Area 17A

Work Area 18, view west

Work Area 19, view northeast

Work Area 19A

Work Area 20A, view south-southeast

Work Areas 21-22, SAA Crossing, view southwest

Work Area 23, view northeast

Work Area 24, SAA Crossing, view northwest

Work Areas 25-27, SAA Crossing, view west

Work Area 28, SAA Crossing, view north-northeast

Work Areas 29-29A, view west-northwest

Work Area 30, view northeast

Work Areas 31-32, SAA Crossing, view south

Work Area 33, in background near truck

Work Area 35

Work Area 36, view east-northeast

Work Area 36A, view south

Work Area 37

Work Area 37A, SAA Crossing, view northeast

Work Area 38, view south

Work Area 39, view northwest

Work Area 40, view southeast

Work Area 41, view northeast-east

Work Areas 43-44, view northeast

Work Areas 43-44, view southwest-west

Work Areas 46-47, view northeast

Work Area 48, view southwest

Work Area 50, view north-northeast

Work Area 51, view west-northwest

Work Area 53, view northwest-west

Work Area 54, view north

Work Area 55, view north

Work Area 57, view southeast

Work Area 59

Work Area 60, view northwest-north

Work Area 61, staging yard, view west

Work Area 62, Sheridan Valve Replacement, view east

Work Area 63, Vallecitos Valve Replacement, view south