Final
Initial Study/Mitigated Negative Declaration (IS/MND)
Pacific Gas & Electric Company
Ravenswood - Cooley Landing 115 kV Reconductoring Project

(A. 17-12-010)

Lead Agency

California Public Utilities Commission

With Assistance From

November 2018

Final

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NOTICE OF FINAL INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

TO: All Interested Parties

Pursuant to the California Public Utilities Commission's (CPUC) General Order 131-D, Pacific Gas and Electric Company (PG&E) has filed an application with the CPUC for a Permit to Construct for the Ravenswood-Cooley Landing 115 Kilovolt (kV) Reconductoring Project (Application No. A.17-12-010).

Project Background: Pacific Gas and Electric Company (PG&E) proposes to reinforce a portion of the Southeastern Peninsula Area 115 kilovolt (kV) transmission system that provides electrical service to San Mateo and Santa Clara counties by replacing the conductors (a process referred to as reconductoring) on the approximately 1.6-mile Ravenswood-Cooley Landing 115 kV power line (Ravenswood-Cooley Landing Line). The Ravenswood-Cooley Landing Line is a double-circuit tower line (DCTL) design supported by nine lattice steel towers between PG&E's Ravenswood Substation and Cooley Landing Substation in the cities of Menlo Park and East Palo Alto on the southeastern portion of the San Francisco Peninsula. The Ravenswood-Cooley Landing 115 kV Reconductoring project (project) would replace the existing conductors with new steel-supported aluminum conductors, modify existing lattice steel towers, add a new optical fiber ground wire (OPGW) to the system, and reinforce select tower footings.

Depending on CPUC approval, construction is targeted to start in September 2020 following permitting and is estimated to be complete in December 2022 and the line reenergized on January 2021.

Information Available: The CPUC Energy Division has prepared a Final Mitigated Negative Declaration and supporting Initial Study (IS/MND) describing the project and its potential environmental effects. Based on this document, it has been determined that the proposed project, as modified, will not have any significant effects on the environment with incorporation of the mitigation identified in the IS/MND. The CPUC's environmental document may be reviewed at the following locations:

CPUC Energy Division
300 Capital Mall, 4th Floor
Sacramento, CA 95814

East Palo Alto Library
2415 University Avenue
East Palo Alto, CA 94303

City of Menlo Park Library
413 Ivy Drive
Menlo Park, CA 94205

PG&E Customer Center
275 Industrial Road
San Carlos, CA 94070

For electronic access to the MND and other project information/reports, check the CPUC's website at:

http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/

CPUC Actions After Final IS/MND Publication: There is no comment period following issuance of the Final IS/MND. The CPUC will determine the adequacy of the Final IS/MND, and, if adequate, will adopt the document as being compliant with CEQA. If adequate, the CPUC will issue a Proposed Decision on the Application, which will be announced and published concurrent with a scheduled Commission meeting. After the Commission makes the decision on the Application, a Notice of Determination will be mailed to the State Clearinghouse within 5 days of the Decision. The 30-day statute of limitations for court challenges begins after the Notice of Determination is filed.

To request additional information, ask a question, or request a hard copy of the MND, please contact:

Billie Blanchard
California Public Utilities Commission
c/o California Energy Commission
1516 Ninth Street, MS 40
Sacramento, CA 95814

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LIST OF ACRONYMS

Acronyms and Abbreviations

Symbols	
µg/m3	micrograms per cubic meter
A	
AB	Assembly Bill
AAC	all aluminum conductors
ACM	asbestos containing material
ACSS	aluminum conductor steel supported
ADA	Americans with Disabilities Act
ADT	average daily traffic
af	artificial fill
alf	artificial levee fill
amps	amperes
APM	Applicant Proposed Measure
ARB	Air Resources Board
ABAG	Association of Bay Area Governments
ATCM	airborne toxic control measure
B	
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Conservation and Development Commission
BDPL	Bay Division Pipelines
BMP	best management practice
BRTR	Biological Resource Survey Report
Baylands Nature Preserve	Palo Alto Baylands Nature Preserve
C	
CAAQS	California Ambient Air Quality Standards
Cal Fire	California Department of Forestry and Fire Protection
Cal IPC	California Invasive Plant Council
CalEEMod	California Emissions Estimator Model
California ISO	California Independent System Operator
Caltrans	California Department of Transportation
CAA	Clean Air Act

CAP	Bay Area 2017 Clean Air Plan
CBC	California Building Code
C/CAG	City/County Association of Governments
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH4	methane
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
CO2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRS	Cultural Resource Specialist
CWA	Clean Water Act
D	
dB	decibels
dBA	A-weighted decibels
DCTL	double-circuit tower line
DPM	Diesel Particulate Matter
DTSC	California Department of Toxic Substances Control
DWR	Department of Water Resources
E	
EMF	electromagnetic fields
EPASD	East Palo Also Sanitary District
ESA	Endangered Species Act
F	
F	Fahrenheit
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
fps	foot-per-second
FTA	Federal Transit Administration
G	
GHG	greenhouse gas
GO	CPUC General Order
GO 131-D	General Order 131-D Section III.B
GWP	global warming potential
H	

H2S	hydrogen sulfide
HAP	Hazardous Air Pollutant
HCP	Habitat Conservation Plan
HEAR	Historic American Engineering Record
HFC	hydrofluorocarbon
HRA	Health Risk Assessment
I	
IS	Initial Study
IPaC	Information for Planning and Conservation (USFWS)
K	
kcmil	1,000 circular mils
KOP	key observation point
kV	kilovolt
L	
Lbs/day	pounds per day
Ldn	Day/Night Average Sound Level
Leq	equivalent noise level
Lmax	maximum noise level
LOS	level of service
LRP	Legally Responsible Person
M	
MSA	Metropolitan Statistical Area
MBTA	Migratory Bird Treaty Act
mg/m3	milligrams per cubic meter
MM	mitigation measure
MMP	Mitigation Monitoring Plan
MMT	million metric tons
MND	Mitigated Negative Declaration
MPMWD	Menlo Park Municipal Water District
MRP	Minor Project Refinements
MRZ	mineral resource zone
MSL	mean sea level
MT/yr	metric tons per year
MVA	megavolt ampere
MW	megawatt
N	
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community and Conservation Plan
NERC	North American Reliability Corporation
NESHAP	National Emission Standards for Hazardous Air Pollutants
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration

NPPA	Native Plant Protection Act
N2O	nitrous oxide
NO2	nitrogen dioxide
NOX	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
NWR	National Wildlife Refuge
O	
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OPGW	Optical Fiber Ground Wire
OSP	[Ravenswood] Open Space Preserve
P	
Pb	Lead
PEA	Proponents Environmental Assessment
PFC	Perfluorocarbons
PFM	Petition for Modification
PGA	Peak ground acceleration
PFYC	Potential Fossil Yield Classification
PG&E	Pacific Gas and Electric Company
PM2.5	particulate matter less than 2.5 microns
PM10	particulate matter up to 10 microns
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PTC	Permit to Construct
Project	Ravenswood-Cooley Landing 115 kV Reconductoring project
R	
Ravenswood-Cooley Landing Line	Ravenswood-Cooley Landing 115 kV power line
ROG	Reactive Organic Gas
ROW	right-of-way
RPR	[California Native Plant Society] Rare Plant Rank
RWQCB	Regional Water Quality Control Board
S	
SF6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SIP	state implementation plan
SFPUC	San Francisco Public Utilities Commission
SMP	site management plan
SO2	sulfur dioxide
SO4	sulfate
SR	State Route
SRP	Stormwater Resource Plan
SUP	Special Use Permit
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
T	
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
TSP	tubular steel pole
U	
US 101	United States Highway 101
USACE	United States Army Corps of Engineers
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
V	
VMT	vehicle miles traveled
W	
WBSD	West Bay Sanitary District
WEAP	Worker Environmental Awareness Program

Section 1

Mitigated Negative Declaration

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

FINAL

Mitigated Negative Declaration
Pacific Gas & Electric Company's
Ravenswood-Cooley 115 kV Reconductoring Project
Application No. A-17-12-010

1 Mitigated Negative Declaration

1.1 Project Information

Project: Ravenswood-Cooley Landing 115 kV Reconductoring Project
Menlo Park and East Palo Alto, California

Project Sponsor: Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
(415) 973-3744

Pacific Gas and Electric Company (PG&E) proposes to reinforce a portion of the Southeastern Peninsula Area 115 kilovolt (kV) transmission system that provides electrical service to San Mateo and Santa Clara counties by replacing the conductors (a process referred to as reconductoring) on the approximately 1.6-mile Ravenswood-Cooley Landing 115 kV power line (Ravenswood-Cooley Landing Line). The Ravenswood-Cooley Landing Line is a double-circuit tower line (DCTL) design supported by nine lattice steel towers between PG&E's Ravenswood Substation and Cooley Landing Substation in the cities of Menlo Park and East Palo Alto on the southeastern portion of the San Francisco Peninsula. The Ravenswood-Cooley Landing 115 kV Reconductoring project (project) would replace the existing conductors with new steel-supported aluminum conductors, modify existing lattice steel towers, add a new optical fiber ground wire (OPGW) to the system, and reinforce select tower footings.

1.2 Introduction

Pursuant to the California Environmental Quality Act (CEQA), the California Public Utilities Commission (CPUC) must prepare an Initial Study (IS) for the project to determine if any significant adverse effects on the environment would result from project implementation. The IS utilizes the significance criteria outlined in Appendix G of the *CEQA Guidelines*. If the IS for the project indicates that a significant adverse impact may occur, the CPUC would be required to prepare an Environmental Impact Report.

According to Section 15070 (Decision to Prepare a Negative Declaration or Mitigated Negative Declaration) of the CEQA *Guidelines*, "*[a] public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:*

(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or

(b) The initial study identifies potentially significant effects, but:

(1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment."

Based on the analysis in the IS, it has been determined that all project-related environmental impacts would be reduced to a less than significant level with the incorporation of feasible mitigation measures. Therefore, adoption of a Mitigated Negative Declaration (MND) will satisfy the requirements of CEQA. The mitigation measures included in this MND are designed to reduce or eliminate the significant environmental impacts described in the IS. Where a measure described in this document has been previously incorporated into the project, either as a specific project design feature or as an Applicant Proposed Measure (APM), this is noted in the discussion.

1.3 Project Description / Required Approvals

The Southeastern Peninsula area includes the cities of Belmont, San Carlos, Redwood City, Atherton, Menlo Park, East Palo Alto and Palo Alto. PG&E's 60 kV and 115 kV transmission systems in the Southeastern Peninsula area provide power to six PG&E distribution substations (Belmont, San Carlos, Redwood City, Belle Haven, Glenwood and Menlo) that serve over 98,000 customers, to several customer-owned substations, and also to the City of Palo Alto's municipal utility. Power system studies by both the California Independent System Operator (California ISO) and PG&E have identified the need to improve and upgrade the Ravenswood-Cooley Landing Line to increase capacity in the area to address potential overloads and future load growth. The project would reconductor the Ravenswood-Cooley Landing Line with a conductor that has a higher capacity rating. This higher capacity conductor will mitigate potential overloads on the lines that could result from outages of other elements on the transmission system in the Southeastern Peninsula area.

The objectives of the project are to:

- Increase the capacity of the two Ravenswood-Cooley Landing Line circuits to address existing overload issues and accommodate future area load growth;
- Provide the Southeastern Peninsula area transmission system within San Mateo and Santa Clara counties with greater operational flexibility; and,
- Design and build the project in a safe, cost-effective manner that will also minimize environmental impacts.

PG&E would obtain permits for the project, as needed, from state and local agencies. **Table 1-1** lists those permits and approvals that may be required for project construction.

TABLE 1-1 ~~REQUIRED~~ PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Regulatory Authority	Agency	Jurisdiction/Purpose	Project Requirements
FEDERAL			
Section 404 Nationwide Permit	U.S. Army Corps of Engineers (USACE)	Work in "waters of the United States," including wetlands.	For access required across marshlands that result in placement of fill.
Bay Area Habitat Conservation Plan	U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Implementation of measures and recordation of habitat impacts for California Ridgeway's rail and salt marsh harvest mouse.
Section 7 Consultation	U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern.
Section 106 Consultation (National Historic Preservation Act [NHPA])	State Historic Preservation Officer (SHPO)	Requires federal agencies to take into account the effects of their undertakings on historic properties.	The USACE may consult with the SHPO due to the age of the existing line to be replaced along the project alignment.
Notice of Proposed Construction or Alteration under Federal Aviation Regulations Part 77	Federal Aviation Administration (FAA)	Regulations apply to poles and/or towers over 200 feet in height above ground level at its site, or within certain proximities to local Airports.	Alignment structures within 20,000 feet of Palo Alto Airport require filing with the FAA.
STATE			
McAteer-Petris Act and the San Francisco Bay Plan, Permit No. M87-74(A)	Bay Area Conservation and Development Commission (BCDC)	Maintenance activities for PG&E facilities within the 100-foot shoreline band	Comply with permit terms relating to ten-year maintenance activities.
Permit to Construct, PTC (GO-131-D)	California Public Utilities Commission (CPUC)	Construction, modification, or alteration of power line facilities.	A PTC is required under the CPUC's General Order No. 131-D, Section III.B.
Section 401 Water Quality Certification	San Francisco Bay Regional Water Quality Control Board (RWQCB)	Consistency with state water quality standards.	Water Quality Certification would be required prior to obtaining a Section 404 Permit from the USACE, if required.
Standard Encroachment Permit (discretionary or ministerial)	California Department of Transportation (Caltrans)	For use of the California state highways for other than normal transportation purposes, including construction activities completed within the right-of-way.	A standard encroachment permit may be obtained for reconductoring work across State Route 84.
National Pollution Discharge Elimination System Storm Water Permit (ministerial)	State Water Resources Control Board (SWRCB)	Construction activities disturbing 1 acre or more of soil must submit a Notice of Intent to comply with the terms of the general permit.	The project would develop and implement a State Water Pollution Prevention Plan (SWPPP).
LOCAL			
Encroachment Permit (ministerial)	City of East Palo Alto	For construction activities completed within city road rights-of-way.	Guard structures would be used when reconductoring across roads.
Revocable License Agreement (discretionary or ministerial)	San Francisco Public Utilities Commission (SFPUC)	Use of SFPUC lands outside of easements	The project may secure a revocable license agreement for use of SFPUC lands outside of easements.

1.4 Environmental Determination

The IS was prepared to identify the environmental effects resulting from project implementation, and to evaluate the level of significance of these effects. The IS relies on information in PG&E's Proponent's Environmental Assessment ("PEA") filed on December 15, 2017, project site reconnaissance by the CPUC environmental team on January 11 and February 6, 2018, and other environmental analyses.

PGE's PEA identified measures to ~~address significant~~ minimize project impacts — the APMs — and these APMs are considered to be part of the project. Based on the IS analysis, additional mitigation measures (MMs) are identified for adoption to ensure that impacts of the project would be less than significant. The additional mitigation measures either supplement, or supersede the APMs. PG&E has agreed to implement all of the additional recommended mitigation measures as part of the project.

Implementation of the following mitigation measures would avoid significant impacts identified in the IS or reduce them to less than significant levels.

1.5 Applicant Proposed Measures and Mitigation Measures

APPLICANT PROPOSED MEASURES
APM AIR-1: Minimize Fugitive Dust During Construction. Consistent with Table 8-2 of the CEQA Air Quality Guidelines (Bay Area Air Quality Management District [BAAQMD] 2017c), PG&E will minimize dust emissions during construction by implementing the following measures: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions; or apply non-toxic soil stabilizers such as soil binders, crushed rock or gravel • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour. Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
APM AIR-2: Exhaust Emissions. Per BAAQMD CEQA guidelines, PG&E will implement the following exhaust emissions control measures. • Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a commonsense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions. • All construction equipment will be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.

APM BIO-2: Avoid and Minimize Impacts on the California Ridgway's Rail and Salt Marsh Harvest Mouse. PG&E will implement the following measures to protect the California Ridgway's rail and salt marsh harvest mouse:

- To protect water quality and avoid the loss of individual California Ridgway's rails and salt marsh harvest mice, activities within or adjacent to California Ridgway's rail or salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Palo Alto Baylands), including helicopter work, will not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. This measure is necessary because protective cover for California Ridgway's rails and salt marsh harvest mice is limited during very high tides, and construction activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation.
- For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or smooth cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protection mats to minimize ground disturbance when working within pickleweed or smooth cordgrass.
- To avoid take of salt marsh harvest mouse, a biologist will assess the site to determine if: vegetation protection mats are appropriate, vegetation removal by hand is needed, and if an onsite biological monitor is needed. Prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas. Immediately following flushing, the field crew will place a mat or manually remove vegetation with nonmotorized tools (e.g., hoe, rake, trowel, or shovel) to the bare ground.
- Conduct work within 700 feet of wetlands suitable for the Ridgway's rail between September 1 and January 15.
- Compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio (3 acres compensated for every 1 acre permanently affected) and temporary impacts on habitat for these species at a 1:1 ratio.

APM BIO-3: Avoid and Minimize Impacts on the Western Snowy Plover. PG&E will implement the following measures to avoid and minimize impacts on the western snowy plover:

- All work on and within 600 feet of active snowy plover nests on Ravenswood Pond SF2 will be conducted outside of the snowy plover nesting season (defined as March 1 through September 1).
- Prior to conducting work at Ravenswood Pond SF2, a qualified biologist will conduct a pre-activity survey of the work areas and surrounding areas within 600 feet by standing on adjacent trails and levees and scanning the area with a spotting scope. If dependent chicks are present within 600 feet of the work areas, work will be postponed until the biologist determines that the chicks are independent (i.e., until they can fly) or have left the area. If no dependent chicks are present, work may proceed and any adult snowy plovers will be allowed to leave the area on their own.

APM BIO-5: Avoid and Minimize Impacts on Sensitive Natural Communities Including Jurisdictional Wetlands and Waters. PG&E will implement the following measures to minimize impacts on sensitive natural communities including open water, northern coastal salt marsh, and disturbed northern coastal salt marsh as well as other jurisdictional wetlands and waters of the U.S./State (e.g., salt pannes).

- Construction activities shall be designed to minimize disturbance of wetlands (including seasonal ponded areas) and regulated waters in the project area to the extent practicable. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction activities. Precautions shall be taken to avoid other damage to vegetation by people or equipment.
- For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protective matting (e.g., timber mats, crane pads) to minimize ground disturbance when working within pickleweed or cordgrass. If deemed necessary by the biologist, small areas of healthy vegetation will be cleared by hand prior to placement of protective mats.
- Erosion, sediment, and material stockpile BMPs will be installed between work areas and adjacent wetlands or waterways as required by APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP). See Section 3.9 [Section 5.9 in this document], Hydrology and Water Quality, for full description.

- Compensate for both permanent and temporary impacts through consultation with the USACE and San Francisco Bay RWQCB during the CWA [Clean Water Act] 404/401 permitting process.

APM CUL-1: Exclusion Fencing. Temporary exclusionary fencing will be installed along the southern edge of Staging Area 3 between the work area and the Hetch Hetchy Aqueduct to ensure that project construction does not impact the eligible resource.

APM CUL-2: Worker Environmental Training. Because there are areas of High or Highest sensitivity for buried cultural resources, all project field personnel should be given environmental training on cultural and paleontological resources protection resources identification and protection, and the laws and penalties governing such protection. This training may be administered by the project paleontologist/archaeologist as a stand-alone training or included as part of the overall environmental awareness training as required by the project. The training will include at minimum, the following:

- The types of cultural resources likely to be encountered.
- Procedures to be taken in the event of an inadvertent cultural resources discovery (see below).
- Penalties for disturbing or destroying cultural resources.
- The types of fossils that could occur at the project site.
- The types of lithologies in which the fossils could be preserved.
- The procedures that should be taken in the event of a fossil discovery.
- Penalties for disturbing paleontological resources.

APM CUL-3: Inadvertent Cultural Resource Discoveries. Because the project area is almost entirely built-over, there is high potential for inadvertent discoveries during project construction. If such discoveries take place, the following procedures will be initiated:

- All ground-disturbing construction activities within 100 feet of the discovery will halt immediately.
- The construction crew will protect the discovery from further disturbance until it has been assessed by a qualified archaeologist.
- The construction foreman will immediately contact the designated project inspector and the PG&E Cultural Resource Specialist (CRS).

The project cultural resources specialist will coordinate with the PG&E CRS and the state and federal lead officials, as appropriate. If the discovery can be avoided or protected and no further impacts will occur, then the resource will be documented on DPR 523 forms, and no further effort will be required. If the resource cannot be avoided and may be subjected to further impacts, qualified personnel will evaluate the significance of the discovery in accordance with the state and federal laws outlined above; personnel will implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist will complete an evaluation of historic-period resources, while evaluation of prehistoric resources will be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.

APM CR-4[1]: Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman will contact the designated cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology; the specialist will then call the San Mateo County Coroner, as appropriate. There will be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the county coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the medical county coroner determines the remains to be Native American, he/she shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).

APM PAL-1: Unanticipated Paleontological Resource Discoveries. If unanticipated paleontological resources are discovered during construction activities, the following procedures will be followed:

- Stop work immediately within 100 feet.

[1] For purposes of consistency with the PEA, **APM CR-4** has not been renamed to **APM CUL-4**.

- Contact the designated project inspector and PG&E CRS immediately.
- Protect the site from further impacts, including looting, erosion or other human or natural damage.
- The project CRS will arrange for a Principal Paleontologist to evaluate discovery. If the discovery is determined to be significant PG&E will implement measures to protect and document the paleontological resource.
- Work may not resume within 100 feet of the find until approval by the paleontologist and PG&E CRS.

In the event that significant paleontological resources are encountered during the project, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E and the lead agency. A Principal Paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency. A Paleontological Monitor or other qualified individual may conduct the recovery of fossil discoveries under the direction of the Principal Paleontologist.

APM GEO-1: Implement Appropriate Design Measures. Based on available references, potentially problematic subsurface conditions such as soft, loose, or liquefiable soils may exist in the project area. PG&E will perform design studies, onsite investigations, and implement appropriate design measures for foundation improvement work that will reduce potential effects of seismic ground failure, including liquefaction.

APM GHG-1 Minimize GHG Emissions

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
- Maintain construction equipment in proper working conditions in accordance with PG&E standards.

APM HAZ-1: Hazardous Substance Control and Emergency Response. PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. 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 through operation. 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 on-site. If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Safety Data Sheets will be maintained and kept available on-site, as applicable.

Potential soil and groundwater contamination was identified within the vicinity of project work areas. Soils or groundwater removed during drilling or other activities will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or 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 hazardous wastes 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 at that location and contacting the Fire Department and Environmental Health Division immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the agencies.

PG&E will complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.

APM HAZ-2: Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE). PG&E will provide this environmental awareness program to staff prior to construction. This program will include the following components related to hazards and hazardous materials:

- PG&E Health, Safety, and Environmental expectations and management structure.
- Applicable regulations.
- Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.
- Summary of the primary workplace hazards to which workers may be exposed.
- Overview of the measures identified in APM HAZ-1.
- Overview of the controls identified in the SWPPP under APM HYD-1.

APM HAZ-3: Adherence to Applicable Site-specific SMPs. In addition to following its own project-specific procedures during the construction phase, PG&E will adhere to any applicable site-specific plans such as the Site Management Plan (SMP) for the 1990 Bay Road Site (see Section 3.8.3.3[2]).

APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP). PG&E will prepare and implement a SWPPP to prevent construction-related erosion, sediment runoff, and discharge of other pollutants into adjacent waterways and onto neighboring properties. Because project activities will result in ground disturbance of more than one acre, PG&E will obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (and as amended by 2010-0014-DWQ and 2012-006-DWQ). To obtain coverage under the permit, PG&E will develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, construction drawings, certification by Legally Responsible Person (LRP), contractor contact information, and annual fee—to the State of California's Stormwater Multi-Application Report Tracking System (SMARTS) database and obtain a Waste Discharger Identification (WDID) number prior to initiating construction activities.

PG&E will implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP will outline implementation of BMPs for each activity that has the potential to impact neighboring properties or degrade surrounding water quality through erosion, sediment runoff, dewatering, and discharge of other pollutants.

APM REC-1: Coordination with Park Management and Signage. PG&E will coordinate closely with the Association of Bay Area Governments, the Midpeninsula Regional Open Space District, cities of Palo Alto and East Palo Alto, and the USFWS to communicate potential park and trail disruptions during project construction activities. Signs advising recreational facility users of construction activities will be posted at entrances and parking areas associated with open space areas (including Don Edwards San Francisco Bay National Wildlife Refuge [NWR], Ravenswood Open Space Preserve, and Palo Alto Baylands Nature Preserve), at the Cooley Landing Park education center, and at designated areas along the Bay Trail. During construction activities that could limit trail access, PG&E will provide a flagman at trail crossings to ensure public safety and safe passage through the project area.

MITIGATION MEASRURES

MM BIO-1: General Avoidance of Biological Resource Impacts. (Supersedes APM BIO-1).
PG&E will implement field protocols and avoidance and minimization measures to reduce impacts on covered species and sensitive natural communities. This MM consists of the following components:

- Worker Environmental Awareness Program (WEAP). PG&E will conduct environmental training for all construction and on-site personnel prior to the beginning of site work. The WEAP training will be presented by a CPUC-approved, qualified biologist. All construction crew members and contractors who attend the training will sign a form indicating that they attended the training and understood the information. Follow-up training will be conducted as needed; new workers will attend WEAP training prior to beginning at the work site.
  Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources, as well as the terms and conditions of permits that apply to the project. Training will

[2] Section 3.8.3.3 of the PEA.

include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to occur in the vicinity, with a focus on those species that could be affected within the project area. Training will also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project. Additionally, personnel will be trained for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources such as an active nest be found during construction). If sensitive resources are found, the qualified biologist will provide guidelines for the personnel to avoid impacts on them. All WEAP participants will receive a brochure that outlines all this information including contact information for the appropriate environmental personnel. A record of all trained personnel will be kept on site, and a sticker indicating training completion will be worn on all worker hard hats. A copy of the training and brochure will be provided to CPUC prior to the start of construction for project files.

- Conservation Landowner Notification. PG&E will notify conservation land owner at least two business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if required by other permits.
- Litter and trash management. All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed animal-proof trash containers and removed from the project site daily. Prohibit open fires (such as barbecues) at work sites.
- Parking and vehicle speed limit. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas. Off-road parking will only be permitted in previously identified and designated work areas. Vehicle speeds on unpaved roads will not exceed 15 miles per hour.
- Access route and work area limitations. Vehicles will be confined to established roadways and existing access roads, pre-approved temporary access routes, existing boardwalks, and designated matted work areas. Access routes and construction work areas will be limited to the minimum necessary to safely construct the project.
- Maintenance and refueling. All equipment will be maintained to minimize the potential for leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down-gradient aquatic habitat, unless otherwise isolated from habitat by secondary containment. Vehicles and equipment operated adjacent to marshlands and open water will be checked daily to prevent leaks of materials that, if introduced to the water, could be harmful to aquatic life. Proper spill prevention and cleanup materials will be maintained in all refueling areas and work areas.
- Pets and firearms. No pets, firearms, hunting or fishing will be permitted at the project site.
- Cover pipes and excavations. Minimize potential for covered species to seek refuge or shelter in pipes and excavations. Inspect pipes, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist will be notified and will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.

MM BIO-2: Avoid and Minimize Impacts on Special-status Plant Species. (Supersedes APM BIO-4). PG&E will implement the following measures to minimize impacts on marsh habitat potentially suitable for special-status plant species:

- As part of the WEAP, include information on the identification of noxious weeds and invasive plants, the importance of noxious-weed and invasive plant control, and measures to minimize their spread. Training will include the following BMPs [best management practices] to avoid or minimize the spread of invasive plants and noxious weeds: (1) avoid working in invasive plant or noxious weed infested areas or prioritize activities so that infested areas are worked in last; (2) keep records of road maintenance activities including location and source of grading material; (3) maintain gravel and soil spoil piles free of invasive plants or noxious weeds; use areas known to be weed-free for staging and laydown areas; (4) minimize soil disturbance to the extent possible; (5) materials used for erosion control will be certified weed free (i.e. straw wattles, gravel, fill material, etc.); when restoring a site after disturbance, use a native seed mix; (6) drive on and park on established roads as much as possible; (7) off-road equipment that is not local to the project area will arrive onsite clean and free of soil and plant parts; and (8) clean clothing, footwear, and gear before moving from an infested area to a non-infested area. In addition, WEAP training will include information on invasive weeds that are known to occur in the vicinity, including stinkwort (*Dittrichia graveolens*), non-native spartina (*Spartina* spp.), and Algerian sea lavender (*Limonium ramosissimum*).

The WEAP training program and brochure will include photographs, description, natural history information, and map showing the species' distribution in relation to project activities.

- Prior to commencement of activities located on or adjacent to non-paved surfaces a biologist will flag known populations of noxious weeds and invasive plants in the work areas.
- To minimize introduction and spread of noxious weeds and invasive plants, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition.
- PG&E will work in a direction from uninfested areas to infested areas as much as practical.
- PG&E will minimize soil disturbance and the removal of vegetation during construction, maintenance and other ground-disturbing activities to the extent practicable. Vehicles and equipment should remain on established roads as much as is practicable.
- PG&E will stage in areas not infested with weeds or treat for weed removal prior to using an infested area.
- If new noxious weed or invasive plant observations are detected within or adjacent to project area, including the Ravenswood OSP, during the course of the project construction and ongoing maintenance activities, the populations will be mapped and reported to the appropriate agency contact. PG&E will conduct post-construction monitoring of any disturbed soils in the spring following completion of construction for any invasive species that inadvertently have been introduced. PG&E will report findings of any invasive plants or noxious weeds detected during project construction and/or the spring after construction to the contact for the Ravenswood OSP, Coty Sifuentes-Winters, Senior Resource Management Specialist, csifuentes@openspace.org or agency-identified alternative.

MM NO-1: Notices, Noise-Reducing Practices, and Complaint Response Process. PG&E shall employ standard noise-reducing construction practices including, but not limited to, the following:

- Ensure that all equipment is equipped with mufflers that meet or exceed factory new- equipment standards.
- Locate stationary equipment as far as practical from noise-sensitive receptors.
- Limit unnecessary engine idling.
- Limit all land-based construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Limit all helicopter activity to daytime hours.
- Notification:
  - Residences and business owners affected by daytime helicopter activities within 1,500 feet of Staging (Landing) Areas 3 and 4 and flight paths shall be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.
  - Residences and business owners within 1,500 feet of active nighttime reconductoring sites and staging areas shall be notified at least 7 days in advance of nighttime work by mail, personal visit, or door hanger, and informed of the expected work schedule.
  - PG&E shall post notices in public areas, including recreational use areas, within 500 feet of the project alignment and construction work areas.
  - In this notice, PG&E shall state that it will perform this activity in a manner to ensure excessive noise is avoided as much as practicable. PG&E shall provide tips to homeowners and business owners on reducing noise intrusion, for example, moving indoors, closing windows and doors facing the construction and helicopter paths. PG&E shall note the efficacy of these tips in reducing noise.
- Temporary sound barriers shall be installed and maintained by the construction contractor for nighttime work conducted within 1,000 feet of sensitive receptors. Temporary sound barriers shall consist of either sound blankets at the noise source or other sound barriers/techniques such as acoustic padding or acoustic walls placed near the noise source. Barriers shall be placed such that the line-of-sight between the construction equipment and adjacent sensitive land uses is blocked. As needed, trucks used during nighttime construction work shall be equipped with either a white noise or variable volume back up alarm. If a low volume alarm cannot be installed, the alarm shall be disabled, and instead, a flagman shall be used for safe movement of trucks.
- PG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. PG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop

procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in the above notices and also posted conspicuously at the construction site(s). PG&E shall address any daytime-related noise complaint within one week of when the complaint is filed. If a complaint is related to nighttime construction work, PG&E shall address it within 24 hours of the filing of the complaint. PG&E shall provide monthly reports with records of complaints and responses to the CPUC. These reports shall be provided to CPUC within 15 days of the end of the month.

MM TRA-1: Traffic Management Implementation. (Supersedes APM TRA-1). PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices*, 2018 edition. A Caltrans-approved Transportation Management Plan will be prepared to address impacts to vehicular, bicycle, and pedestrian traffic caused by traffic restrictions or detours. The Plan must address the following:

- Pedestrian and bicycle access through the construction site (between staging areas 2a and 2b and other locations along the alignment) will be maintained at all times and will adhere to the Americans with Disabilities Act (ADA) regulations and comply with Caltrans' Temporary Pedestrian Facilities Handbook.
- Prior to construction PG&E will survey and photograph portions of the Bay Trail that will be used during construction. If project-related construction activities damage portions of the Bay Trail, PG&E will restore those facilities in compliance with current design standards and ADA regulations.
- Lane closures will occur during off-peak traffic hours (i.e. 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.)
- Advance public notification of lane closures will be provided if transit routes require temporary rerouting. Public notification will include lane closure schedule, location, and duration of public transit reroute.
- Project-related traffic will be required to use northbound University Avenue to enter and depart from the SFPUC service road, unless a flagger is present to direct traffic on University Avenue while the vehicles turn left into or out of the service road driveway.

PG&E will include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure construction activities and associated lane closures and detours will not significantly affect emergency response vehicles. Emergency service providers will be notified of the timing, location, and duration of construction activities. PG&E will submit verification of its consultation with emergency service providers to the CPUC. All roads will remain passable to emergency service vehicles at all times. of the location, date, time and duration of lane closures. PG&E will ensure emergency access is maintained at all times during lane closures.

MM TRA-2: Air Transit Coordination (Supersedes APM TRA-2). PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E's helicopter operator will comply with all applicable FAA regulations~~,~~ and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan at least 14 days prior to helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to comply with all requirements.

- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport Manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.

Section 2

Environmental Determination and Environmental Checklist

2 Environmental Determination

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" and requiring implementation of mitigation as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forestry Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Tribal Cultural Resources	☐ Utilities/Service Systems
☐ Mandatory Findings of Significance		

2.2 Environmental Determination

On the basis of this initial evaluation:

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

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

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

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

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Billie Blanchard

10/30/2018
Date

Billie Blanchard, Project Manager
Energy Division CEQA Unit
California Public Utilities Commission

Section 3

Introduction to the Initial Study

3 Introduction to the Initial Study

3.1 Project Overview

PG&E, a regulated California utility, filed an application with the CPUC on December 15, 2017, for a Permit to Construct (PTC) the project. The application was deemed complete by the CPUC on March 2, 2018.

PG&E is proposing to reconductor a 115 kV double circuit transmission line between Ravenswood Substation in Menlo Park, California to the Cooley Landing Substation in East Palo Alto, California. As proposed by PG&E, the project includes:

- Reconductoring the two 115 kV Ravenswood-Cooley Landing Line circuits with new 477 thousand circular mils[1] (kcmil) steel-supported aluminum conductors (ACSS);
- Reinforcing existing foundations at four towers to support the new conductors;
- Modifying four (of nine) lattice steel towers to support the new conductors and provide required minimum conductor clearance;
- Installing a new OPGW on each tower to increase communication reliability between the two substations; and,
- Installing new tubular steel poles (TSP) and modifying and replacing certain related equipment at Ravenswood Substation and Cooley Landing Substation.

The proposed project consists of modifications to existing facilities within an existing utility corridor. No material changes in maintenance and operations activities would occur with implementation of the project.

3.2 Environmental Analysis

3.2.1 CEQA Process

This IS has been prepared pursuant to CEQA, the amended State CEQA Guidelines (14 CCR 15000 et seq.), and the CPUC's Rules of Practice and Procedure (Rule 2.4). The purpose of the IS is to inform the decision-makers, responsible agencies, and the public of the project, the existing environment that would be affected by the project, the environmental effects that would occur if the project is approved, and proposed mitigation measures that would avoid or reduce environmental effects.

An MND has been prepared based on the assessment of potential environmental impacts identified in the IS. All potentially significant impacts associated with the project can be mitigated to a level below significance; therefore, an MND can be adopted by the CPUC in accordance with Section 21080 of the CEQA Public Resources Code.

[1] A mil is 1/1000 inch. Kcmil is one thousand circular mil. A unit of the conductor's cross-sectional area divided by 1,273 to obtain the area in square inches.

3.2.2 CEQA Lead Agency

The CPUC is the lead agency for review of the project under CEQA because it is the agency with the greatest responsibility for supervising and approving the project as a whole, including the decision whether to adopt the MND and to approve or deny the PTC.

3.2.3 Initial Study

The IS presents an analysis of potential effects of the project on the environment. The IS is based on information from PG&E's PEA and associated submittals, site visits, CPUC data requests, and additional research conducted by the CPUC.

Construction activities and project operation could have direct and indirect impacts on the environment. The following environmental parameters are addressed based on the potential effects of the project and potential growth-inducing or cumulative effects of the project in combination with other projects:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Paleontological Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Mandatory Findings of Significance

The IS has been organized into the following sections:

- Section 1: Mitigated Negative Declaration
- Section 2: Environmental Determination
- Section 3: Introduction. Provides an introduction and overview describing the project and the CEQA process, and identifies key areas of environmental concern.
- Section 4: Project Description. Presents the project objectives and provides an in-depth description of the project, including construction details and methods.
- Section 5: Environmental Analysis and Mitigation. Includes a description of the existing conditions and analysis of the project's potential environmental impacts, and identifies mitigation measures to reduce potentially significant impacts to less than significant levels.
- Section 6: Mitigation Monitoring Plan. Includes APMs and MMs that PG&E must implement as part of the project, actions required to implement these measures, monitoring requirements, and timing of implementation for each measure.
- Section 7: Response to Comments. Presents the comments received during the public comment period and associated responses to comments.

- Appendix A List of Preparers and Agency Contacts
- Appendix B Air Quality and Greenhouse Gas Emissions Calculations
- Appendix C California Native American Tribal Consultation Documentation
- Appendix D Notice of Intent and Legal Notice

Section 4

Project Description

4 Project Description

PG&E proposes to reinforce a portion of the Southeastern Peninsula Area 115 kV transmission system that provides electrical service to San Mateo and Santa Clara counties by reconductoring on the Ravenswood-Cooley Landing Line. The Ravenswood-Cooley Landing Line is a DCTL design supported by nine lattice steel towers between PG&E's Ravenswood Substation and Cooley Landing Substation in the cities of Menlo Park and East Palo Alto on the southeastern portion of the San Francisco Peninsula.

4.1 Project Title and Overview

The project would replace the existing conductors with new steel-supported aluminum conductors, modify existing lattice steel towers, add two new TSP at the Ravenswood and Cooley Landing Substations, add a new OPGW to the system, and reinforce select tower footings.

4.2 Lead Agency Name and Address

California Public Utilities Commission
Energy Division, CEQA Unit
~~505 Van Ness Avenue~~300 Capital Mall, Fourth Floor
~~San Francisco~~Sacramento, California ~~94102~~95814

4.3 Lead Agency Contact Person and Phone Number

Billie Blanchard, Project Manager
Energy Division, CEQA Unit
California Public Utilities Commission
~~505 Van Ness Avenue~~300 Capital Mall, Fourth Floor
~~San Francisco~~Sacramento, California ~~94102~~95814
(~~415~~916) ~~703-2068~~823-4799 or billie.blanchard@cpuc.ca.gov

4.4 Project Location

The project, which consists entirely of modifications to an existing power line, is in southeastern San Mateo County between Ravenswood Substation and Cooley Landing Substation in the cities of Menlo Park and East Palo Alto. **Figure 4-1** shows the overall project location as well as general existing land use.

4.5 Project Sponsor's Name and Address

Pacific Gas and Electric Company
245 Market Street
San Francisco, CA 94105

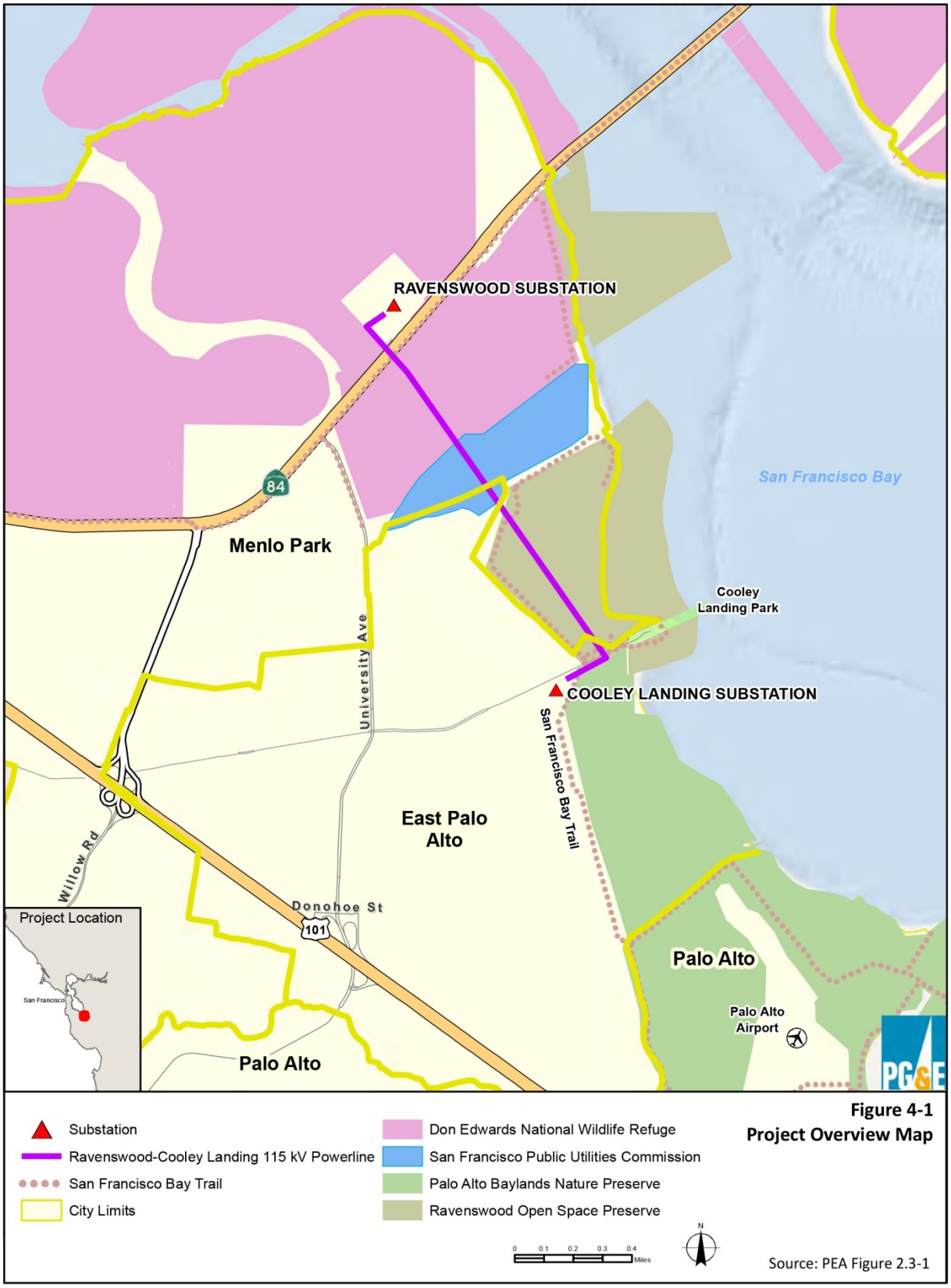

Figure 4-1
Project Overview Map

4.6 Existing System

The approximately 1.6-mile Ravenswood-Cooley Landing Line originates at an existing TSP located within the Ravenswood Substation at the north end of the project. From Ravenswood Substation to Tower 1, the line travels approximately 0.1 mile directly west from a TSP within Ravenswood Substation to Tower 1 within the Don Edwards San Francisco Bay National Wildlife Refuge (NWR). From Tower 1 to Tower 8, the line moves southeast approximately 1.3 miles, crossing over the Bayfront Expressway (State Route [SR] 84) and continuing through the Don Edwards San Francisco Bay NWR and into the Ravenswood Open Space Preserve (OSP), just east of single-family residential neighborhoods. At Tower 8 the line enters the Palo Alto Baylands Nature Preserve (Baylands Nature Preserve) then turns directly west for approximately 0.2 mile and terminates at a TSP within the Cooley Landing Substation.

PG&E's 60 kV and 115 kV transmission systems in the Southeastern Peninsula area provide power to six distribution substations: Belmont, San Carlos, Redwood City, Belle Haven, Glenwood and Menlo. These substations serve over 98,000 distribution customers in the cities of Belmont, San Carlos, Redwood City, Atherton, Menlo Park and East Palo Alto. Several large customers are supplied with power directly from the local transmission system: CEMEX, Oracle, Stanford Research Institute, Northrop Grumman, and Facebook. The 115 kV system also delivers power to the municipal utility for the City of Palo Alto. The 60 kV system serves as a back-up source of power to other substations, such as Stanford University and PG&E's Los Altos and Loyola distribution substations. See **Figure 4-2** below for a map of the existing transmission system, and **Figure 4-3** for a single-line diagram of the transmission system in the Southeastern Peninsula Area.

The approximately 1.6-mile Ravenswood-Cooley Landing Line was placed into operation in 1970 to serve peak winter loads of the San Francisco Peninsula and part of a PG&E trend of increasing reliability and interconnectivity of the electrical grid. Composed of 0.974-inch-diameter 715.5 kcmil all aluminum conductor (AAC), the 115 kV DCTL is capable of carrying 703 amperes (amps) under normal conditions and 802 amps under emergency conditions.

4.7 General Plan Designation

The project is located within the city boundaries of Menlo Park and East Palo Alto. The Menlo Park General Plan designates the project area located within the city boundaries as Baylands. The Ravenswood Substation has no land use designation. The East Palo Alto General Plan designates the project area at Cooley Landing as Parks/Recreation/Conservation (PRC), the project area south of Cooley Landing as Resource Management (RM), and the Cooley Landing Substation is designated as Office (OC).

Within a half-mile of the project area, additional land designations include Low Density Residential (LDR), General Industrial (I-G), and Industrial Buffer (I-B) under the East Palo Alto General Plan.

Figure 4-2
Existing Systems Map

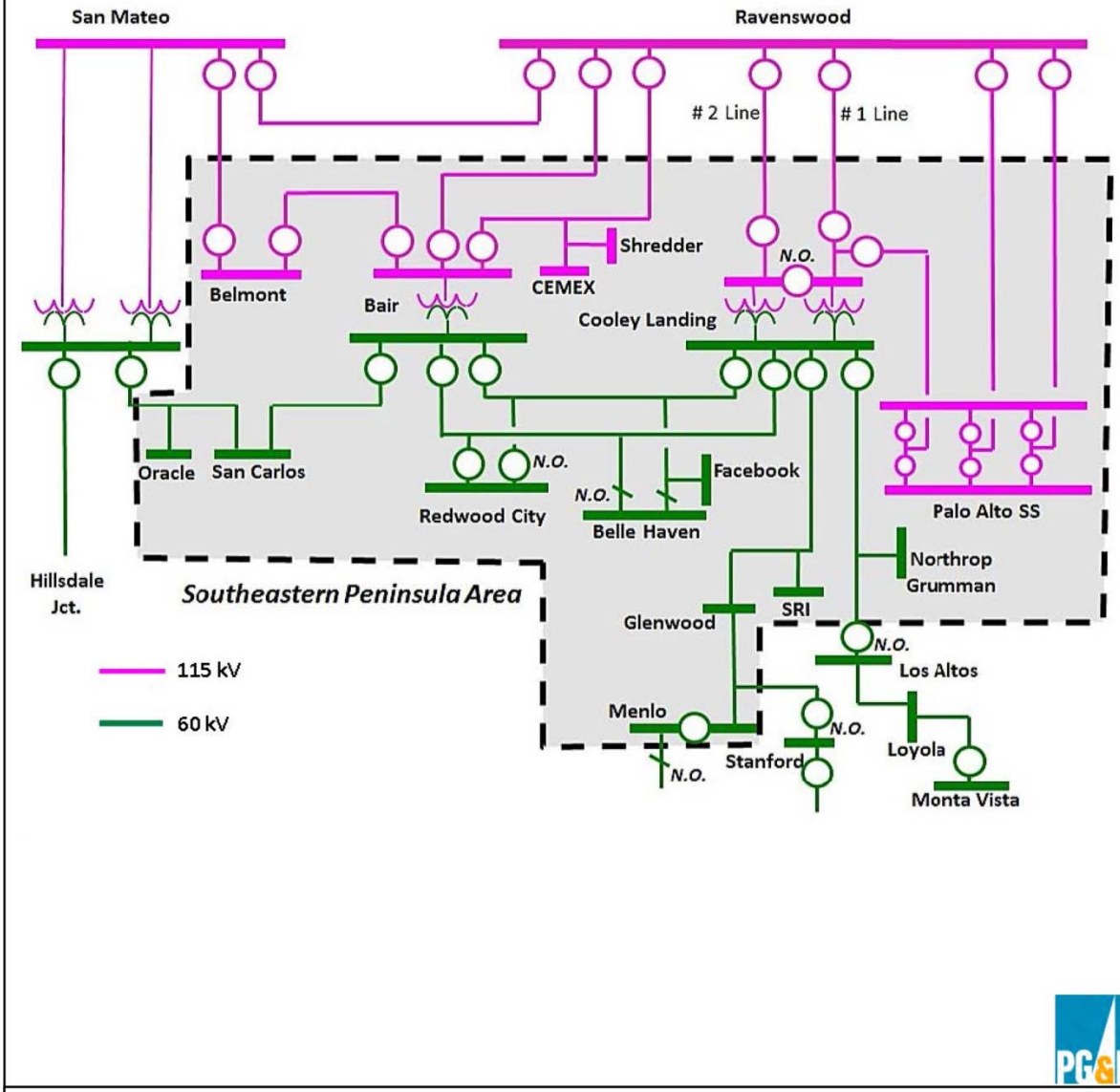

Figure 4-3
Single-Line Diagram of the Transmission System in the Southeastern Peninsula Area

Source: PEA Figure 2.4-2

4.8 Zoning

The project is located within the city boundaries of Menlo Park and East Palo Alto. Within the Menlo Park city boundaries, the Ravenswood Substation is zoned Unclassified (U) and the rest of the project area is zoned Flood Plain (FP) under the Menlo Park Zoning Ordinance. Within the East Palo Alto city boundaries, Cooley Landing is zoned Ravenswood Open Space (ROS) and the project area south is zoned Resource Management (RM) under the East Palo Alto Zoning Ordinance. The Cooley Landing Substation is zoned Waterfront Office (WO) and is covered in the Ravenswood/4 Corners transit-oriented development specific plan.

Within 0.5-mile of the project area, additional zoning descriptions include Single Family Residential (R-1), Ravenswood Flex Overlay (R-Flex), and Ravenswood Employment Center (REC) under the East Palo Alto Zoning Ordinance.

4.9 Surrounding Land Uses and Setting

The northwest-southeast oriented Ravenswood-Cooley Landing power line passes through the Don Edwards San Francisco Bay NWR, the Ravenswood OSP, and the Baylands Nature Preserve, with single-family residential neighborhoods and industrial uses to the west, and the San Francisco Bay to the east. **Figure 4-1** shows the overall project location as well as general existing land use.

4.10 Project Overview

The Southeastern Peninsula area includes the cities of Belmont, San Carlos, Redwood City, Atherton, Menlo Park, East Palo Alto and Palo Alto. PG&E's 60 kV and 115 kV transmission systems in the Southeastern Peninsula area provide power to six PG&E distribution substations (Belmont, San Carlos, Redwood City, Belle Haven, Glenwood and Menlo) that serve over 98,000 customers, to several customer-owned substations, and also to the City of Palo Alto's municipal utility. Power system studies by both the California ISO and PG&E have identified the need to improve and upgrade the Ravenswood-Cooley Landing Line to increase capacity in the area to address potential overloads and future load growth. The project would reconductor the Ravenswood-Cooley Landing Line with a conductor that has a higher capacity rating. This higher capacity conductor would mitigate potential overloads on the lines that could result from outages of other elements on the transmission system in the Southeastern Peninsula area.

4.10.1 Project Objectives

The objectives of the project are:

- Increase the capacity of the two Ravenswood-Cooley Landing Line circuits to address existing overload issues and accommodate future area load growth;
- Provide the Southeastern Peninsula area transmission system within San Mateo and Santa Clara counties with greater operational flexibility; and,
- Design and build the project in a safe, cost-effective manner that will also minimize environmental impacts.

Power demand in the Southeastern Peninsula area is generally more than 340 megawatts (MW) on most weekdays and can exceed 460 MW when local temperatures are more than 95 degrees Fahrenheit (^{o}F). During the heatwave in early September 2017, the area power demand exceeded 500 MW on September 1, 2017. Additionally, new hi-tech facilities and residential developments are being constructed in the

area, which would likely result in increased area power demands in the future. For example, Facebook has acquired the Tyco facility in Menlo Park, which is served from the 60 kV transmission system, and they are rebuilding the facility into a new, large campus for their employees.

The 60 kV system in the area is also a back-up source of power to other customers. For instance, Stanford University, which is normally served by a 60 kV line from the Jefferson Substation, can also be supplied from the Cooley Landing-Stanford 60 kV Line, although only up to 20 MW of campus load can be served from Cooley Landing. The Cooley Landing-Los Altos 60 kV Line is a back-up source of power to Los Altos and Loyola Substations. These substations serve over 14,000 customers and have a summer peak demand of over 35 MW.

The Cooley Landing Substation, located in East Palo Alto, is a critical source of power to the 60 kV transmission system in the Southeastern Peninsula area. On a typical day, approximately one third of the total power demand for the area comes through Cooley Landing Substation. Power into Cooley Landing is delivered through the two Ravenswood-Cooley Landing 115 kV Lines. Most of that power is then sent to the local 60 kV system through the two 115/60 kV transformers at Cooley Landing; the remaining power flows down to the City of Palo Alto's substation via the Cooley Landing-Palo Alto 115 kV Line. On a typical weekday, the power flow on the two 115 kV lines is more than 120 MW. On hot afternoons when the temperature is more than 95^{o}F, the flow on the two 115 kV lines can be more than 180 MW.

The Ravenswood-Cooley Landing 115 kV Line is a DCTL composed of 715.5 kcmil AACs. These lines were built in 1970, and the line conductors were given special 3 foot-per-second (fps) summer daytime ratings in 2005:

- 3 fps normal rating = 780 amps (155.4 megavolt ampere [MVA] at 115 kV)
- 3 fps emergency rating = 885 amps (176.3 MVA)

These ratings are only in effect from 10 a.m. to 7 p.m. during the summer months. After 7 p.m., the ratings revert back to PG&E's standard 2 fps ratings:

- 2 fps normal rating = 703 amps (140.0 MVA)
- 2 fps emergency rating = 802 amps (159.7 MVA)

4.10.2 Project Background

This capacity issue on the Ravenswood-Cooley Landing Line was first identified nine years ago in 2008. PG&E proposed a project to California ISO to reconductor the Ravenswood-Cooley Landing Line with a conductor that has a summer emergency rating of over 1,100 amps. This would increase the capacity of the two 115 kV lines by more than 24 percent, thus eliminating the overload issues and providing greater operational flexibility for the local transmission system. In 2009, the California ISO approved the project to improve and upgrade the Ravenswood-Cooley Landing Line to address thermal overloads in its 2009 Transmission Plan.

Since then, the need for the project has been reassessed several times by both California ISO and PG&E to evaluate whether other system reinforcement options address the potential overload and outage issues. The California ISO and PG&E recently completed reassessments in 2017 and determined that the project is still needed and provides the most cost-effective solution to the system issues.

The 2017 reassessment was evaluated against the California ISO's current Planning Standards, which require higher system reliability in "high density urban load areas." The Southeastern Peninsula area has been designated as part of a high urban density area by the California ISO. Section 2.6 of the current California ISO Planning Standards states, "For local area long-term planning, the California ISO does not allow non-consequential load dropping in high density urban load areas in lieu of expanding transmission or local resource capability to mitigate North American Electric Reliability Corporation (NERC) TPL-001-4 standard P1-P7 contingencies and impacts on the 115 kV or higher voltage systems."[1]

PG&E recently completed an updated power flow study for the Southeastern Peninsula area to determine the loadings on the two Ravenswood-Cooley Landing Line circuits for various outages on the local transmission system on a hot weekday in the next four years. Overloads on the circuits were seen for several P6 contingencies.[2] These contingencies had one of the Ravenswood-Cooley Landing Line circuits out of service combined with another element in the Southeastern Peninsula transmission system out of service. The remaining Ravenswood-Cooley Landing Line circuit was loaded to more than 102 percent of its 885-amp emergency rating for several contingencies during the afternoon peak demand period, and the line was loaded to more than 101 percent of its 802-amp emergency rating during evening hours.

Therefore, per the California ISO Planning Standards and provide PG&E customers in the area and the City of Palo Alto municipal utility with better reliability, PG&E has developed a long-term system upgrade to address these loading issues in this high density urban area. PG&E's project would reconductor the Ravenswood-Cooley Landing Line with a conductor that has a summer emergency rating of over 1,100 amps. This would increase the capacity of the two 115 kV circuits by more than 24 percent. As part of this project, the protection schemes at Ravenswood and Cooley Landing would be upgraded so that the Cooley Landing bus-sectionalizing circuit breaker number 122 can operate normally in the "closed" position.

Currently, circuit breaker 122 is normally operated in the "open" position, resulting in unbalanced loading on the two Ravenswood-Cooley Landing Line circuits in which the number 1 Line carries more than twice as much power as the number 2 Line. The protection upgrades would require additional communication between the two substations, hence the need for the OPGW that is being installed as part of the project. With circuit breaker 122 normally "closed," the loadings on the two circuits would be more balanced, providing more system capability and operational flexibility. Altogether, the project would eliminate the overload issues and would provide greater operational flexibility and reliability for the local transmission system.

4.11 Project Components

The components of the proposed project would include:

- Reconductoring the two 115 kV Ravenswood-Cooley Landing Line circuits with new 477 kcmil steel-supported aluminum conductors (ACSS);
- Reinforcing existing foundations at four towers to support the new conductors;
- Modifying four lattice steel towers to support the new conductors and provide required minimum conductor clearance;

[1] Section II.6.1 on Page 6 of the California ISO Planning Standards.

[2] A P6 contingency involves outages of two elements in the transmission system. The contingency involves taking one element out of service, readjusting the system, and then taking the second element out of service.

- Installing a new OPGW at each tower to increase communication reliability between the two substations;
- Installing new TSP's, and modifying or replacing certain related equipment at Ravenswood Substation and Cooley Landing Substation; and,
- Temporary guard structures and access roads, snub poles, pull sites, staging areas[3] and other temporary work areas.

The project consists of modifications to existing facilities within an existing utility corridor. No material changes in maintenance and operations activities are anticipated with implementation of the project. **Figures 4-4a** and **4b** present components of the project.

Power Line Reconductoring

To reduce the risk of overloading the Ravenswood-Cooley Landing Line during peak demand, the project would replace the existing conductors with 0.846-inch-diameter standard 477 kcmil ACSS, which is rated to handle 1,144 amps. The 115 kV conductors are arranged in a vertical configuration, with three conductors on each side of the tower. The new conductors would be replaced in the same configuration as the existing 115 kV conductors. Insulators would be replaced along the entire line. The span distances between structures vary from approximately 680 feet to 1,200 feet. The project would add an OPGW between Ravenswood and Cooley Landing substations. The OPGW would be used for communication between the two substations and would be attached to new OPGW peaks installed at the top of each tower. The OPGW would terminate at a new TSP installed at each substation, then would continue within new underground conduit to the existing control building. The OPGW proposed for the project would be a 0.675-inch diameter DNO-6580 AlumaCore-48/48/675 or equivalent type fiber. In accordance with CPUC General Order (GO) 95, the lowest conductor would be installed a minimum of 27 feet above the ground. The minimum ground-to-conductor clearance above SR 84 would be 27 feet. For open water areas considered suitable for sailing, a minimum conductor clearance of 47 feet would be established.

Tower Modifications

A summary of the proposed tower modifications is included in **Table 4-1**. Tower modifications would consist of installing OPGW peaks to support the new OPGW, cage-top extensions to increase conductor clearance over open water, and structural body modifications to support the additional load from the new conductor (see **Figure 4-5**). The OPGW peaks are typically 4.5-feet lattice extensions mounted to the top of each tower, and the cage-top extensions are 10-foot lattice extensions with cross arms bolted to the top of Towers 1, 2, 8 and 9. The tower body modifications would entail changing out and adding braces to the lower cage portion of Towers 1, 2, 8 and 9.

[3] Helicopters would use staging areas 1, 3, and 4 as landing sites.

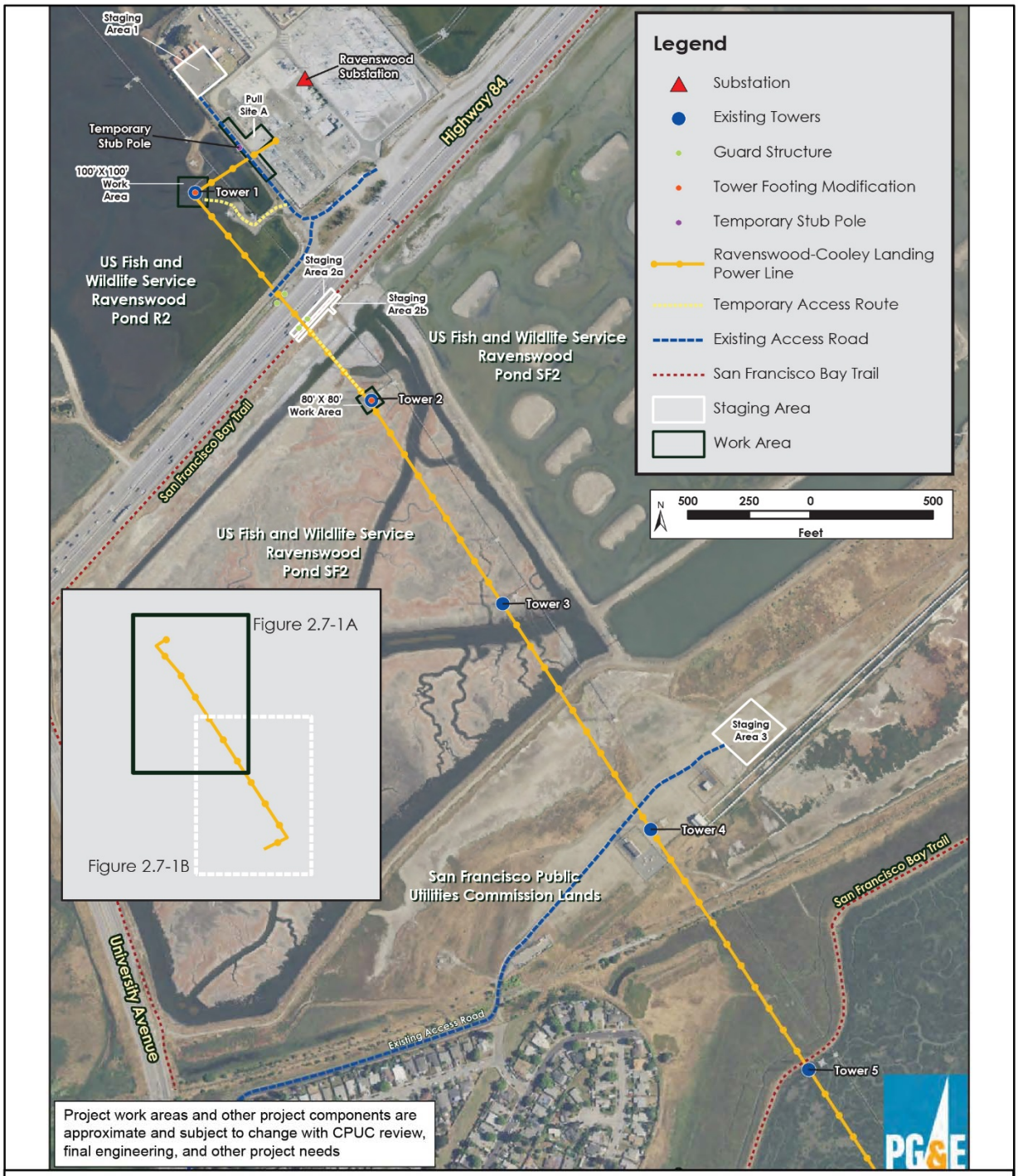

Figure 4-4a
Project Components and Preliminary Work Areas

Source: PEA Figure 2.3-1

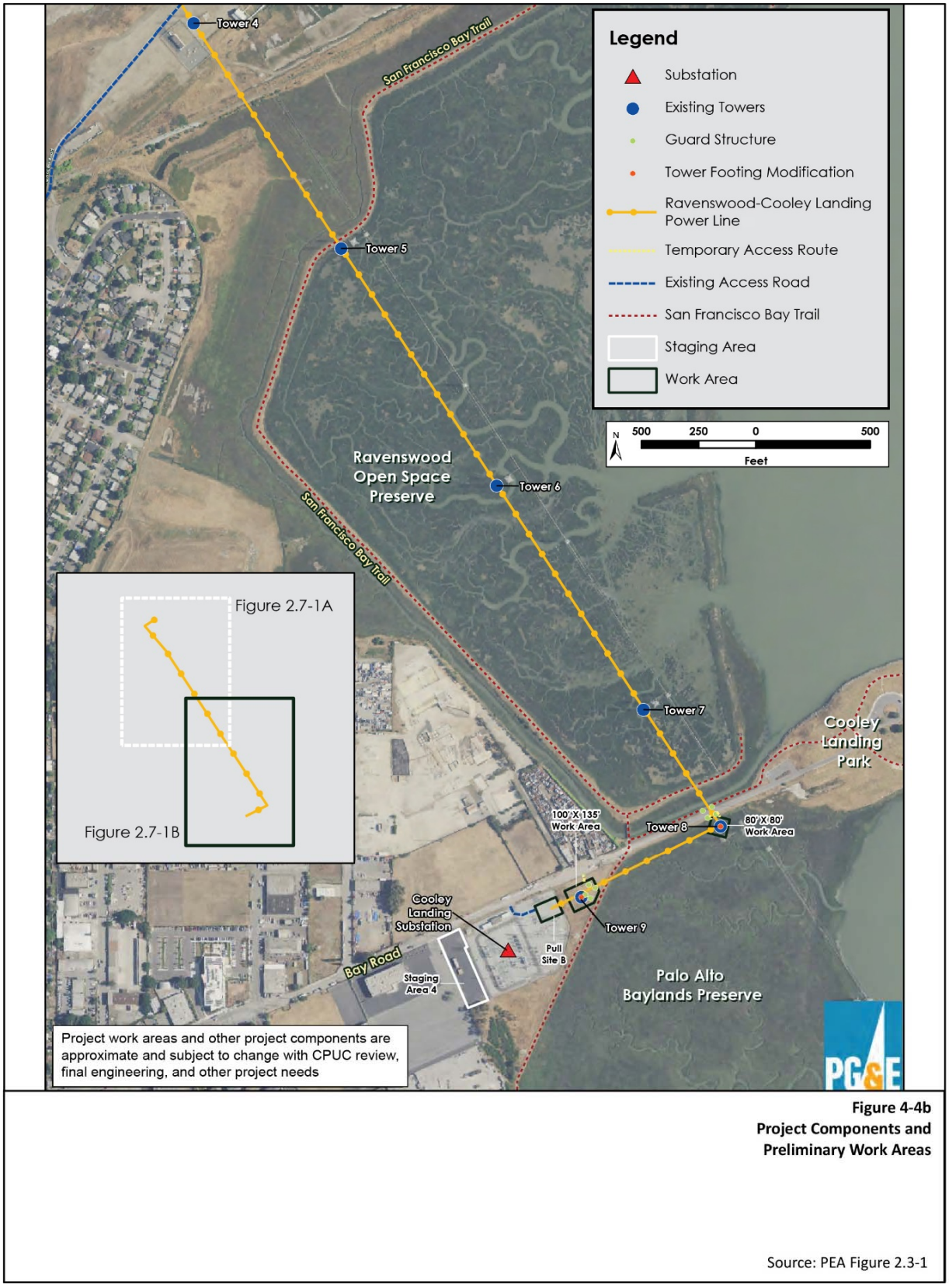

Figure 4-4b
Project Components and Preliminary Work Areas

Source: PEA Figure 2.3-1

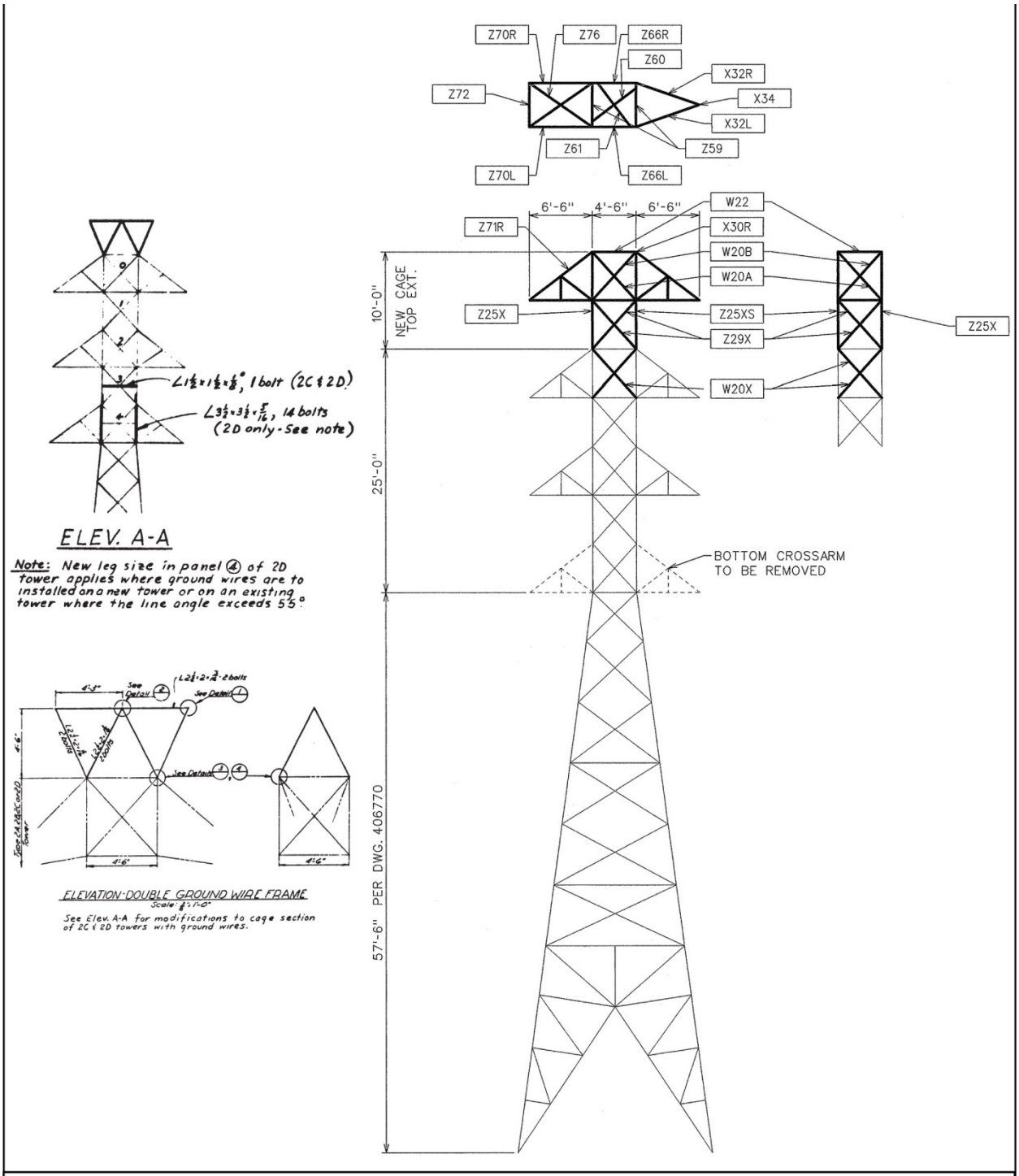

Figure 4-5
Proposed Tower Modifications

Source: PG&E Data Response Set 1

TABLE 4-1 SUMMARY OF PROPOSED TOWER MODIFICATIONS AND FOUNDATION IMPROVEMENTS

Tower	Tower Modifications	Foundation Improvements	Existing Height (feet)	Proposed Height (feet)
1	Cage-top Extension, Body Modification, OPGW Peak	Yes	116.8	132
2	Cage-top Extension, Body Modification, OPGW Peak	Yes	118.5	133
3	OPGW Peak	No	121	126
4	OPGW Peak	No	138.4	143
5	OPGW Peak	No	137.4	142
6	OPGW Peak	No	132.8	137
7	OPGW Peak	No	125.1	130
8	Body Modification, OPGW Peak	Yes	85.7	90
9	Body Modification, OPGW Peak	Yes	84.7	89
New	TSP, Ravenswood Substation	N/A	N/A	55
New	TSP, Cooley Landing Substation	N/A	N/A	80

Notes: This table is preliminary and subject to change based on CPUC requirements, final engineering, ground conditions at time of construction, and other factors. N/A- not applicable Sources: PGE 2017a, PGE 2018b, and PGE 2018e.

Foundation Improvements

During initial engineering work to evaluate the strength of the lattice steel towers that support the two 115 kV circuits, it was determined that four of the nine towers would require foundation reinforcement to support the new conductor (see **Table 4-1**). Grout-injected soil displacement piles called Tubex piles would be installed adjacent to the existing tower foundations and structurally tied to the existing tower footings.

Substation Modifications

A new TSP would be installed at both Ravenswood and Cooley Landing Substations to provide termination points for the overhead OPGW line. The TSP installed at Ravenswood Substation would be approximately 55-feet tall, and the TSP at Cooley Landing Substation would be approximately 80-feet tall. Each TSP would be approximately 2 feet in diameter at the base and would be set on a concrete pile cap installed over Tubex pile foundations. The OPGW line would be installed in new underground conduit from the TSP to the existing substation control building and interconnected with new telecom processing equipment to be installed within the existing control building. The installation of the OPGW line would reinforce the telecom infrastructure to minimize risks of over-tripping for communication failure between Ravenswood and Cooley Landing Substations. At Cooley Landing Substation, the project would reconfigure existing circuit breaker 122 to operate normally closed. At Cooley Landing Substation, line relays between the communication building and circuit breaker 122 would be replaced in existing conduit. This would allow for a balanced loading on both circuits and reduce potential overloads on either circuit. All work would occur within the existing fence lines of Cooley Landing and Ravenswood Substations.

4.12 Project Construction

The following discussion is preliminary and based on typical construction practices and anticipated construction needs. Final design may require modifications to the expected work areas described herein; however, impacts associated with potential refinements are not anticipated to differ.

4.12.1 Construction Methods

Power Line Reconductoring

During reconductoring activities, the existing power line would be taken out of service. To replace a conductor, the existing conductor would be detached from its support structure and temporarily lifted. Rollers then would be installed at the conductor's attachment point and the conductor would be placed onto the rollers. The rollers would allow the existing conductor to be pulled through each structure until the new conductor is ready to be pulled up to the final tension position. Installing rollers and detaching the existing conductor would be accomplished using a helicopter to transport workers and materials to each tower.

A sock line would then be attached to the existing conductor, and a line truck with a drum puller and empty conductor reel would pull the old conductor onto the reel where it would be collected for salvage. The pulling through each structure would be done under controlled tension to keep the conductor elevated and away from obstacles. As a safety precaution during conductor removal, guard structures would be placed where the conductor crosses public roads, recreation trails, or other utility lines to prevent injury or damage if the conductor were to inadvertently fall. The guard structures would vary in design depending on location, but may include installing temporary wood poles, or the use of boom trucks.

Reel stands mounted on a line truck would feed the new conductor along the rollers at each structure while maintaining tension in the line to prevent contact with the ground or other obstacles. After the conductor is pulled into place, conductor sags would be adjusted to required tensions. This sequence would occur three times per circuit. The conductor would then be clamped to the end of each new insulator as the rollers are removed, and new vibration dampers and other accessories would be installed.

Tower Modifications

Installing OPGW peaks and cage-top extensions would be accomplished using a medium-duty helicopter to transport crews and materials to tower locations. The existing towers would be prepared to accommodate the extensions by installing any necessary braces or additional plates at connection points. The OPGW peaks and cage-top extensions would be pre-assembled at staging areas and transported to the individual towers by helicopter where crews would bolt the peaks and extensions onto the existing towers. Most of the body modifications would entail changing out and adding braces to the lower cage portion of the tower.

Foundation Improvements

Foundation work at Towers 1, 2, 8, and 9 would consist of installing two Tubex soil displacement piles adjacent to each existing tower footing for a total of eight piles per tower. The installation starts with screwing in an approximately 16-inch-diameter pile, 80- to 100-feet-deep, using a track mounted drill rig. Steel casing is advanced by the drill rig and grout is injected into the void created by the pile casing as the drill progresses. Additional discussion of construction methods is provided in **Section 4.12.3** below.

Once the pile is installed to depth, a steel rebar cage is lowered into the casing and the casing is filled with concrete. Any groundwater that accumulates within the pile casing would be dewatered into a baker tank or equivalent for characterization, then disposed of in accordance with the project Storm Water Pollution Prevention Plan (SWPPP) and applicable state and federal regulations as described in **Section 3.8, Hazards and Hazardous Materials** and **Section 3.9, Hydrology and Water Quality**. With the Tubex pile system there are no spoils generated during installation; the soil is displaced laterally and compacted as the drill bit is advanced. No backfill would be needed for this work and any incidental drill spoils would be stockpiled on plastic for characterization then removed from the site for transport to an approved disposal facility in accordance with **Section 3.8, Hazards and Hazardous Materials**.

Once the Tubex piles are in place, a horizontal concrete pile cap would structurally tie the new piles to the existing tower footings. The new concrete pile cap would be formed above the ground surface; no excavation would be required to tie the new piles to the existing foundations.

Substation Improvements

A new TSP would be installed within each substation to provide a termination point for the overhead OPGW line. Each TSP would be installed using a Tubex pile foundation following the process described above for the tower foundation improvements. An aboveground concrete pile cap approximately 10-feet-long by 10-feet-wide would be installed on top of the Tubex pile foundation. A line truck would be used to place the pile cap forms, anchor bolts, and rebar. The TSPs would be delivered directly to the substations for assembly, and a crane would be used to set the TSP onto anchor bolts placed within the pile cap. At each substation, the OPGW line would be installed in new underground conduit trenched from the base of the TSP to the existing control building. The trench would be approximately 12 inches wide and 36 inches deep with the work being completed using a backhoe over approximately one half day at each substation (PGE 2018). The TSPs and anchor bolts would be galvanized, protecting them from excessive corrosion, should a flood event occur. The OPGW line would then connect with new telecom processing equipment to be installed within the control building. Electricians would use hand tools to install new line relays and reconfigure the wiring of circuit breaker 122 at Cooley Landing Substation.

Right-of-Way Requirements

PG&E currently has permanent existing easement rights along the entirety of the existing alignment to accommodate the project. PG&E's easement rights include ingress and egress to the power lines, vegetation removal, tower installation, and reconstruction. PG&E may update or clarify its existing easement rights, as needed, prior to construction. Temporary construction easements may be obtained to accommodate pull sites, staging areas, or other work areas located outside of permanent easements.

Land entitlement issues are not part of this regulatory proceeding in which the CPUC is considering whether to grant or deny PG&E's application for a permit to upgrade existing electrical facilities. Rather, any land rights issues would be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the CPUC on PG&E's application (see, for example, the Jefferson-Martin 230 kV Transmission Project, A.02-04-043, D.04-08-046, [CPUC 2004]).

4.12.2 Temporary Structures

Guard Structures

Temporary wood poles would be used as guard structures at locations where the Ravenswood-Cooley Landing Line crosses roads, recreational trails, or other utility lines (see **Figure 4-6**). Guard structures

typically consist of a pair of temporary vertical wood poles that are direct buried with a horizontal cross-arm or netting.

Guy wires may be installed to provide tension support for netting. Guard structures are installed as a safety precaution to prevent the conductor from falling to the ground should it be dropped or sag excessively during reconductoring. These structures would typically extend approximately 30 to 50 feet aboveground and approximately 5 to 7 feet belowground.

In lieu of installing temporary wood poles as guard structures, bucket or line trucks may be staged at crossings to minimize ground disturbance or to accommodate other construction-related needs.

The guard structures installed at the SR 84 crossing would include netting to provide additional protection against a falling or sagging conductor (see **Figure 4-6**). The poles used for netted guard structures would be guyed for stability. It is anticipated that a combination of temporary lane closures and rolling road blocks would be required to install the nets onto the guard structures.

Snub Poles

Snub poles are temporary wood poles used to facilitate pulling operations. Approximately two temporary snub poles may be required at each pull site where the conductor cannot be attached directly to the structure because of structure design. Snub poles typically extend approximately 30 to 50 feet aboveground and approximately 5 to 7 feet belowground. Snub poles would be removed upon completion of each wire pull.

4.12.3 Work Areas

The following discussion is preliminary and based on typical construction practices and anticipated construction needs. Final design may require modifications to the expected work areas described in the following paragraphs; however, impacts associated with potential project refinements are not anticipated to differ. **Table 4-2** provides a summary of proposed temporary work areas.

Example standard wood pole guard structure.

Example wood pole guyed guard structure with netting.

Figure 4-6
Typical Guard Structure and Netting

TABLE 4-2 SUMMARY OF PROPOSED TEMPORARY WORK AREAS

Work Area	Work Area Description	Access	Approximate Work Areas (acres)		
			Matted	Overland	Developed
Tower 1	Matted Tower Foundation Work Area	Matted Access Route	0.26	0	0
Tower 2	Matted Tower Foundation Work Area	Matted Access Route	0.22	0	0
Tower 3	None	Helicopter	0	0	0
Tower 4	None	Helicopter	0	0	0
Tower 5	None	Helicopter	0	0	0
Tower 6	None	Helicopter	0	0	0
Tower 7	None	Helicopter	0	0	0
Tower 8	Matted Tower Foundation Work Area	Matted Access Route	0.16	0	0
Tower 9	Overland Tower Foundation Work Area	Bay Road	0	0.30	0
Pull Site A	Pull Site	SR 84	0	0	0.56
Pull Site B	Pull Site	Bay Road	0	0	0.17
Guard Structures	Augured Area and Spoils Stockpile	SR 84, Bay Road	0	0.03	0.01
Ravenswood Substation	TSP and Conduit Installation	SR 84	0	0	0*
Cooley Landing Substation	TSP and Conduit Installation	Bay Road	0	0	0.25
Total Approximate Work Area			0.64	0.33	0.99

Notes: This table is preliminary and subject to change based on CPUC requirements, final engineering, ground conditions at time of construction, and other factors. *TSP installation would occur within the Pull Site A work area. Source: PGE 2017a

Tower Foundation Work Areas

To provide access and a stable work area around towers in marshlands (Towers 1, 2, and 8), access routes and tower work areas would be established by placing timber mats or equivalent protective matting over the ground surface. Towers within marshlands would require approximately 0.3 acre of matted work area around the base of the towers. Tower 9, which is in uplands, would require approximately 0.3-acre of overland work area established by mowing existing vegetation. It may be necessary to temporarily remove sections of the maintenance boardwalks to Towers 1, 2, and 8 to facilitate placement of matting. Any sections of boardwalk removed would be replaced following completion of foundation work. No grading would occur to establish project work areas.

If water is present when foundation work is planned, it may be necessary to construct a temporary cofferdam around the perimeter of the work area to isolate foundation work from open water. Cofferdams may consist of water-filled bladders (e.g., aqua dams), sandbags wrapped in plastic, or other similar means of controlling water from entering the work area. Once the cofferdam is in place, the work area would be dewatered in accordance with the project SWPPP and **Section 5.9, Hydrology and Water Quality**.

Guard Structure Work Areas

To prevent the conductor from sagging onto other utility lines or roads, approximately six temporary guard structures would be installed at crossings of electric lines, recreation trails, and roadways. Two 3-

pole guard structures with netting would be placed on each side of SR 84, two single-pole guard structures would be placed on each side of Bay Road, and two single-pole guard structures would be placed on either side of Tower 9 to protect an existing power line. When netting is used, temporary guy wires would be installed to support the additional load on the wood pole structures. Equipment needed to install the wood poles would likely operate from existing disturbed areas, such as road shoulders. It is estimated that installation of each guard structure pole would disturb approximately 100 square feet, accounting for the augured diameter plus stockpiled spoils. Guard structure poles would be installed in disturbed roadsides or developed areas where possible. K-rail would be placed along SR 84 shoulders to isolate the guard structures from vehicle traffic. Construction personnel would be stationed at trail crossings to temporarily hold or redirect recreationalists to prevent contact with conductor during pulling operations.

Pull Sites

When conductors are strung between towers, pull sites are used to raise the conductors to the proper ground clearance height and to the proper line tension. Two pull sites would be needed for pulling conductor onto the Ravenswood-Cooley Landing Line. One pull site would be located within the Ravenswood Substation and along the existing gravel road on the west side of the Ravenswood Substation, and the other would be located within the Cooley Landing Substation. Pull sites would have a footprint of approximately 0.2 to 0.6 acre within previously disturbed or developed areas. A temporary wood pole would be installed at each pull site to serve as a snub pole during reconductoring.

Pull sites would be used to stage conductor pulling trucks and conductor reel trucks. Construction vehicles and equipment needed at the pull sites are expected to be parked or staged within the substation footprints or along the gravel road adjacent to Ravenswood Substation.

Staging Areas

Temporary staging areas would be the main base of operations during project construction and would be used for a variety of purposes, including storage of construction materials and equipment as they arrive on site, at helicopter landing zones, for parking of vehicles and equipment, and as a meeting area for project management and work crews. Five staging areas are proposed, two within PG&E property adjacent to the Ravenswood and Cooley Landing substations, two adjacent to east-bound SR 84 on either side of the San Francisco Bay Trail, and one located on San Francisco Public Utilities Commission (SFPUC) property east of the SFPUC's Ravenswood Valve Lot (see **Figure 4-4a**).

Site preparation is not expected to be necessary for staging areas; however, within Staging Area 3, limited placement of matting may be necessary in the winter months. Based on PG&E's preliminary design and construction plan, a temporary construction easement may be required from the San Francisco Public Utilities Commission for Staging Area 3. Otherwise, PG&E appears to have adequate land rights for all other access roads, work areas, and staging areas. For areas without existing fencing, a temporary chain-link fence with secured gates would be installed. Portable generators would be used to provide power. PG&E plans to use portable, towable light towers for any necessary night time construction work at construction sites and staging yards. These lighting units come with four shielded directional bulbs on a telescoping tower that can be articulated to focus on the immediate work area for safe construction while minimizing incidental light impacts.

TABLE 4-3 SUMMARY OF PROPOSED TEMPORARY STAGING AREAS

Staging Area	Staging Area Description	Helicopter Landing Zone	Approximate Area (acres)	Existing Land Cover
1	Disturbed area northwest of Ravenswood Substation	Yes	1.06	Developed
2a	25-ft. x 250-ft. area south of SR 84	No	0.14	Developed/ Levee Slope
2b	15-ft. x 250-ft. area south of SR 84	No	0.10	Developed/ Levee Slope
3	Upland area east of SFPUC Ravenswood Valve Lot	Yes	0.95	Upland grassland/ Developed
4	Paved PG&E pole yard west of Cooley Landing Substation	Yes	0.70	Paved

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, ground conditions at time of construction, and other factors. Source: PGE 2017a.

Helicopter Use

Access to several of the towers is difficult due to marshland and open-water habitat; use of a helicopter would facilitate delivery of materials and crews without the need to access every tower from the ground. Helicopters would be used to remove and install the conductors, to set the cage-top extensions and OPGW peaks, and to transport laborers and materials to the towers. Two light-duty helicopters (Hughes 500 or similar) would be used to transport crew members and materials, and to remove and install conductors. A medium-duty helicopter (Bell Ranger UE205 or similar) would be used to install the OPGW peaks and to install the cage-top extensions. Helicopters would fly directly from the landing zone to the alignment, and would follow the alignment to each tower site. At the end of each day, helicopters would return to a local commercial airport or another appropriately equipped facility. Helicopters would not transport heavy loads over roads or habitable structures.

Temporary landing zones[4] with designated areas for helicopter take-offs and landings would be established within the staging areas identified in **Table 4-3**. Dust suppressants or water would be applied, as needed, to control dust at the landing zone. Helicopters are anticipated to primarily refuel at nearby commercial airports; however, a fuel truck may be available at staging areas to support refueling if needed. Spill prevention measures would be in place for any onsite helicopter refueling in compliance with the project SWPPP.

As detailed in **Sections 5.3, Air Quality**, **5.8, Hazards and Hazardous Materials**, and **5.12, Noise**, PG&E best management practices (BMPs) would be implemented at each landing zone to reduce impacts related to air quality, hazards and hazardous materials, and noise.

Construction workers using helicopters are required to be certified for helicopter safety, and must produce a certification card to the pilot before they can fly. Personnel and pilots would attend a daily tailboard meeting at the landing zone that covers safety topics for the day, including the route to be taken and work locations to be visited. ~~PG&E would file helicopter flight plans with the local Federal Aviation Administration (FAA) office regulating the local air traffic control plan within 14 days of helicopter activities.~~

[4] Helicopters would use staging areas 1, 3, and 4 as landing sites.

Access Roads

Project work areas would be accessed using a combination of public roads, existing paved and gravel roads, overland routes, and matted temporary access routes across marshlands. No new access roads would be established for the project, no grading is anticipated, and no permanent access roads are proposed. Equipment would access tower work areas within marshlands by placing protective matting (e.g., wooden timber mats, crane pads, swamp mats) onto the existing surface to create an approximately 10-foot-wide equipment access route. A combination of matting and steel plates would be utilized to provide equipment access at grade changes (such as when accessing mudflats or marshlands from upland areas).

Vegetation Clearance

Vegetation clearing would be limited to mowing the existing upland grassland around the base of Tower 9 and within Staging Area 3 to establish work areas, and hand removal of pickleweed prior to the placement of matting at Tower 8. For other matted work areas, matting would be placed directly over existing vegetation and no vegetation clearing is proposed.

Erosion and Sediment Control and Pollution Prevention during Construction

Construction of the project would require ground-disturbing activities associated with tower foundation work and establishment of work areas. Because these activities would result in disturbance of more than one acre, PG&E would obtain coverage under the State Water Resource Control Board (SWRCB) General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ[5]. To obtain coverage under the permit, PG&E would develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, certification, and annual fee to the SWRCB prior to initiating construction activities.

PG&E would implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP would outline implementation of BMPs for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, and discharge of other pollutants. PG&E does not obtain building permits for TSPs or their foundations, and would therefore not be subject to local ordinances regarding floodplain construction.

Cleanup and Post-Construction Restoration

Crews would be required to maintain clean work areas and would be instructed that no debris may be left behind at any stage of the project. Packing crates, spare bolts, and construction debris would be picked up and hauled away for recycling or disposal during construction. Conductors removed from the project would be taken to appropriate disposal facilities to be reused, recycled, or disposed of in accordance with applicable law. PG&E would conduct a final survey to ensure that cleanup activities have been successfully completed.

Because no grading is proposed, and work areas would be established by either matting over existing vegetation, or mowing, PG&E ~~would~~ does not anticipate needing to actively restore project work areas following construction but would as needed.

[5] Order No. 2009-0009-DWA-
https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_complete.pdf

4.12.4 Construction Workforce and Equipment

Project construction would require a foundation crew, helicopter crew, tower crew, line crew, environmental inspector, and biological monitor. Approximately 15 construction workers would be at the project site on a typical work day; however, because work activities may occur concurrently along the project, up to approximately 25 workers may be working somewhere on the project site at any time.

Construction would typically take place between 7 a.m. and 7 p.m., five days per week (Monday to Friday). One activity, a rolling stop, would occur during the early morning hours on a Sunday, in accordance with the California Department of Transportation (Caltrans) encroachment permit requirements. Because construction would progress quickly, construction activities are not expected to take place near any one structure location for more than a few days. Nighttime construction is not anticipated, except for certain construction procedures that cannot be interrupted because of safety considerations or to take advantage of line clearances during off-peak hours. Several rolling-stops, less than 15 minutes in duration, would occur during the nighttime hours, in accordance with the Caltrans encroachment permit requirements (PGE 2018b).

Equipment typically used during project construction is identified in **Table 4-4a** as well as a breakdown of estimated duration of use during construction, including hours or miles per day of operation, and the total duration of use (in days). **Table 4-4b** identifies the equipment that is planned for use. Not all equipment may be used during all stages of the activity.

TABLE 4-4a TYPICAL CONSTRUCTION EQUIPMENT AND DURATION OF USE

Activity	Estimated Quantity and Type of Equipment		Typical Crew Size	Typical Hours or Miles per Day of Operation	Estimated Duration of Use (days)
Staging Area – Receiving, Distribution	1	Boom truck	4	6 miles	20
	1	Rough terrain forklift		3 hours	20
	2	Generators		2 hours	20
	2	Light-duty pickup truck		6 miles	80
	1	Water tender w/ pickup truck		6 miles	20
Work Area Establishment and Removal	1	Rough terrain forklift	3	6 hours	26
	1	Tractor with mower		3 hours	1
	1	Boom truck		3 hours	26
	1	Light-duty pickup truck		6 miles	26
Foundation Work (Tower reinforcement and TSPs)	1	Drill rig	4	8 hours	26
	1	Rough terrain forklift		5 hours	30
	1	Skid steer		1 hours	26
	1	Concrete truck		20 miles	10
	2	Light-duty pickup truck		6 miles	30
	1	Grout injector (concrete pump)		4 hours	14
	1	Generators		4 hours	26
Tower Modifications (Top - cage Extensions, OPGW Peaks, Body Mods)	1	Helicopter (medium) Bell Twin Ranger	4	3 hours	10
	1	Light-duty pickup truck		6 miles	10
Guard Structures	1	Line Truck	3	6 miles	8
	1	Pickup		6 miles	8
	1	Bucket truck		6 miles	8

TABLE 4-4a TYPICAL CONSTRUCTION EQUIPMENT AND DURATION OF USE

Activity	Estimated Quantity and Type of Equipment		Typical Crew Size	Typical Hours or Miles per Day of Operation	Estimated Duration of Use (days)
Conductor Installation, OPGW Installation, TSP Installation, and CB 122 Reconfiguration (includes old conductor removal)	2	Helicopter (small) MD-500	15	3 hours	26
	1	Tensioner		8 hours	3
	1	Puller		8 hours	3
	1	Line truck w/ wire reel		4 hours	2
	1	Boom truck		1 hour	28
	2	Bucket truck		2 hours	30
	1	Man lift		2 hours	26
	3	Light-duty pickup truck		6 miles	30
	1	Dump Truck		20 miles	3
	1	Crane		4 hours	2
Right-of-Way Cleanup	1	Skid steer	2	4 hours	4
	1	Light-duty pickup truck		6 miles	4
Environmental Monitoring	2	Light-duty pickup truck	1	6 miles	80
Project Management/Inspection	1	Light-duty pickup truck	1	6 miles	80
Worker Commute	15	Light-duty auto/pickup truck	N/A	25 miles	80

TABLE 4-4b ANTICIPATED CONSTRUCTION EQUIPMENT

Type of Equipment	Use
Bucket truck	Lift and transport workers
Skid steer	Remove excavation spoils
Concrete truck	Mix and deliver concrete
Pickup truck	Transport personnel, tools, and materials
Compressor	Operate tools
Crawler dozer	Pulling lines and sagging conductors
Drill rig	Excavate foundation holes
Rough terrain forklift	Lift and transport heavy construction items; set crane mats
Generator	Provide temporary power
Light-duty helicopter	Use for pulling operations; also transport crew and materials
Medium-duty helicopter	Set cage-top extensions and OPGW peaks
Man lift	Lift crews to structures
Mobile offices	Use as supervision and clerical office
Line truck w/ puller	Pull line in stringing operation
Line truck w/ wire reel	Transport reels of conductor
Line truck w/ tensioner	Hold tension against a pulling line during the stringing phase
Tractor trailer (semi-truck)	Haul materials, equipment, tools, etc.
Boom truck	Lift materials
Water truck	Provide dust control
Crane	Lift TSPs onto foundations

Source: PGE 2017a

4.13 Construction Schedule

PG&E anticipates that construction of the project would take approximately four months to complete. Site development and preparation for construction is scheduled to begin in September 2020, after which construction would mobilize immediately. Staging area and access crews would prepare project work areas beginning in September, followed by the foundation installation crews, and tower modification and line crews. The project is currently scheduled to be completed in December 2020 and the line reenergized in January 2021.

4.14 Operation and Maintenance

No material changes in maintenance and operation activities are anticipated with implementation of the project. The existing line would continue to be inspected annually or as needed when driven by an event, such as an emergency. The current PG&E facility inspection process involves three types of inspections: (1) ground inspections; (2) aerial inspections; and (3) climbing, if ground inspections indicate such need.

Maintenance of the power line would continue to be generally conducted on an as-needed basis, when something is discovered in need of repair during inspections, or in response to an emergency. Moreover, replacement of the Ravenswood-Cooley Landing Line conductors should result in less conductor breakage due to corrosion, resulting in fewer events that require emergency response.

4.15 Other Permits and Approvals

The CPUC is the lead agency for CEQA review of this project. In accordance with CPUC GO 131-D Section III.B (GO-131-D), PG&E prepared and submitted a PEA as part of its application for a PTC. The CPUC has exclusive authority to approve or deny PG&E's application; however, various permits from other agencies may also need to be obtained by PG&E for the project. In addition to the PTC, **Table 4-5** summarizes the permits from other federal, State, and local agencies that may be needed for the project.

TABLE 4-5 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Agency	Jurisdiction	Requirements
FEDERAL/STATE AGENCIES		
U.S. Army Corps of Engineers (USACE)	Work in "waters of the United States," including wetlands.	Section 404 Nationwide Permit - For access required across marshlands that result in placement of fill.
U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Bay Area Habitat Conservation Plan - Implementation of measures and recordation of habitat impacts for California Ridgeway's rail and salt marsh harvest mouse
	Impacts on federally listed species or critical habitat.	Section 7 Consultation – Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern.
State Historic Preservation Officer (SHPO)	Requires federal agencies to take into account the effects of their undertakings on historic properties.	Section 106 Consultation (National Historic Preservation Act [NHPA]) – The USACE may consult with the SHPO due to the age of the existing line to be replaced along the project alignment.

TABLE 4-5 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Agency	Jurisdiction	Requirements
Federal Aviation Administration (FAA)	Regulations apply to poles and/or towers over 200 feet in height above ground level at its site, or within certain proximities to local Airports.	A Notice of Proposed Construction or Alteration under Federal Aviation Regulations Part 77 - Alignment structures within 20,000 feet of Palo Alto Airport require filing with the FAA.
Bay Area Conservation and Development Commission (BCDC)	Maintenance activities for PG&E facilities within the 100-foot shoreline band	McAteer-Petris Act and the San Francisco Bay Plan, Permit No. M87-74(A) - Comply with permit terms relating to ten-year maintenance activities.
California Public Utilities Commission (CPUC)	Construction, modification, or alteration of power line facilities.	PTC (GO-131-D) - A PTC is required under the CPUC's General Order No. 131-D, Section III.B.
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Consistency with state water quality standards.	Section 401 Water Quality Certification - Water Quality Certification would be required prior to obtaining a Section 404 Permit from the USACE, if required.
California Department of Transportation (Caltrans)	For use of the California state highways for other than normal transportation purposes, including construction activities completed within the right-of-way.	Standard Encroachment Permit (discretionary or ministerial) - A standard encroachment permit may be obtained for reconductoring work across SR 84.
State Water Resources Control Board (SWRCB)	Construction activities disturbing 1 acre or more of soil must submit a Notice of Intent to comply with the terms of the general permit.	National Pollution Discharge Elimination System Storm Water Permit (ministerial) - The project would develop and implement a State Water Pollution Prevention Plan (SWPPP).
LOCAL/REGIONAL AGENCIES		
City of East Palo Alto	For construction activities completed within city road rights-of-way.	Encroachment Permit (ministerial) -Guard structures would be used when reconductoring across roads.
San Francisco Public Utilities Commission (SFPUC)	Use of SFPUC lands outside of easements	Revocable License Agreement - The project may secure a revocable license agreement for use of SFPUC lands outside of easements.

4.16 Applicant Proposed Measures

PG&E proposes to implement measures to ensure the project would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. PG&E proposes to implement these measures during the design, construction, and operation of the project in order to avoid or minimize environmental impacts.

APMs listed in **Table 4-6** are considered part of the project and are considered in the evaluation of environmental impacts (see **Section 5, Environmental Analysis and Mitigation**). CPUC approval would be based upon PG&E adhering to the project as described in this document, including this project description and the APMs, as well as any adopted mitigation measures identified by this IS.

Table 4-6 details each APM by environmental issue area. In some cases, mitigation measures presented in **Section 5** either expand upon or add detail to the APMs presented in **Table 4-6** if necessary; to ensure that impacts would be reduced to less than significant levels. When there are no APMs proposed for a technical area (e.g., Aesthetics), the technical section is not listed in the table below. ~~The determination to keep or supersede an APM is identified in the table below for each APM.~~

TABLE 4-6: APPLICANT PROPOSED MEASURES	
APM Number	Issue Area
AIR QUALITY	
APM AIR-1:	Minimize Fugitive Dust During Construction. Consistent with Table 8-2 of the CEQA Air Quality Guidelines (Bay Area Air Quality Management District [BAAQMD] 2017c), PG&E would minimize dust emissions during construction by implementing the following measures: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions; or apply non-toxic soil stabilizers such as soil binders, crushed rock or gravel • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour. • Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
APM AIR-2:	Exhaust Emissions. Per BAAQMD CEQA guidelines, PG&E would implement the following exhaust emissions control measures. • Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time would depend 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 would apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen would include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions. • All construction equipment would be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.

BIOLOGICAL RESOURCES	
APM BIO-1:	General Avoidance of Biological Resource Impacts. PG&E would implement field protocols and avoidance and minimization measures to reduce impacts on covered species and sensitive natural communities. This APM consists of the following components: *Worker Environmental Awareness Program (WEAP)*. PG&E would conduct environmental training for all construction and on-site personnel prior to the beginning of site work. Training would include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources, as well as the terms and conditions of permits that apply to the project. Training would include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers shall be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to be affected within the project area. Training would also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project. *Conservation Landowner Notification*. PG&E would notify conservation land owner at least two business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice would be provided if required by other permits. *Litter and trash management*. All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers daily and removed from the project site according to the local sanitation service schedule. Prohibit open fires (such as barbecues) at work sites. *Parking and vehicle speed limit*. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed or developed areas or work areas. Off-road parking would only be permitted in previously identified and designated work areas. Vehicle speeds on unpaved roads would not exceed 15 miles per hour. *Access route and work area limitations*. Vehicles would be confined to established roadways and existing access roads, pre-approved temporary access routes, existing boardwalks, and designated matted work areas. Access routes and construction work areas would be limited to the minimum necessary to safely construct the project. *Maintenance and refueling*. All equipment would be maintained to minimize the potential for leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment would be restricted to designated staging areas located at least 100 feet from any down-gradient aquatic habitat, unless otherwise isolated from habitat by secondary containment. Vehicles and equipment operated adjacent to marshlands and open water would be checked daily to prevent leaks of materials that, if introduced to the water, could be harmful to aquatic life. Proper spill prevention and cleanup materials will be maintained in all refueling areas and work areas. *Pets and firearms*. No pets, firearms, hunting or fishing would be permitted at the project site. *Cover pipes and excavations*. Minimize potential for covered species to seek refuge or shelter in pipes and excavations. Inspect pipes, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews would search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist would be notified and would relocate the species to adjacent habitat or the species would be allowed to naturally disperse, as determined by a biologist.

APM BIO-2:	Avoid and Minimize Impacts on the California Ridgway's Rail and Salt Marsh Harvest Mouse. PG&E would implement the following measures to protect the California Ridgway's rail and salt marsh harvest mouse: • To protect water quality and avoid the loss of individual California Ridgway's rails and salt marsh harvest mice, activities within or adjacent to California Ridgway's rail or salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Palo Alto Baylands), including helicopter work, would not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. This measure is necessary because protective cover for California Ridgway's rails and salt marsh harvest mice is limited during very high tides, and construction activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation. • For activities that would result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist would flag access routes for crews when working in pickleweed or smooth cordgrass dominated habitats in order to minimize impacts on these species. Crews would use protection mats to minimize ground disturbance when working within pickleweed or smooth cordgrass. • To avoid take of salt marsh harvest mouse, a biologist will assess the site to determine if: vegetation protection mats are appropriate, vegetation removal by hand is needed, and if an onsite biological monitor is needed. Prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas. Immediately following flushing, the field crew would place a mat or manually remove vegetation with non-motorized tools (e.g., hoe, rake, trowel, or shovel) to the bare ground. • Conduct work within 700 feet of wetlands suitable for the Ridgway's rail between September 1 and January 15. • Compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio (3 acres compensated for every 1 acre permanently affected) and temporary impacts on habitat for these species at a 1:1 ratio.
APM BIO-3:	Avoid and Minimize Impacts on the Western Snowy Plover. PG&E would implement the following measures to avoid and minimize impacts on the western snowy plover: • All work on and within 600 feet of active snowy plover nests on Ravenswood Pond SF2 will be conducted outside of the snowy plover nesting season (defined as March 1 through September 1). • Prior to conducting work at Ravenswood Pond SF2, a qualified biologist would conduct a pre-activity survey of the work areas and surrounding areas within 600 feet by standing on adjacent trails and levees and scanning the area with a spotting scope. If dependent chicks are present within 600 feet of the work areas, work would be postponed until the biologist determines that the chicks are independent (i.e., until they can fly) or have left the area. If no dependent chicks are present, work may proceed and any adult snowy plovers will be allowed to leave the area on their own.

APM BIO-4:	Avoid and Minimize Impacts on Special-status Plant Species. PG&E would implement the following measures to minimize impacts on marsh habitat potentially suitable for special-status plant species: • As part of the WEAP, include information on the identification of noxious weeds, the importance of noxious-weed control, and measures to minimize their spread. Training would include the following BMPs to avoid or minimize the spread of invasive weeds: (1) avoid working in invasive weed infested areas or prioritize activities so that infested areas are worked in last; (2) keep records of road maintenance activities including location and source of grading material; (3) maintain gravel and soil spoil piles free of invasive weeds; use areas known to be weed-free for staging and laydown areas; (4) minimize soil disturbance to the extent possible; (5) materials used for erosion control would be certified weed free (i.e. straw wattles, gravel, fill material, etc.); when restoring a site after disturbance, use a native seed mix; (6) drive on and park on established roads as much as possible; (7) off-road equipment that is not local to the project area would arrive onsite clean and free of soil and plant parts; and (8) clean clothing, footwear, and gear before moving from and infested area to a non-infested area. • To minimize introduction and spread of noxious weeds, PG&E would avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E would maintain stockpiled, uninfested material in a weed-free condition. • PG&E would work in a direction from uninfested areas to infested areas as much as practical. • PG&E would minimize soil disturbance and the removal of vegetation during construction, maintenance and other ground-disturbing activities to the extent practicable. Vehicles and equipment should remain on established roads as much as is practicable. • PG&E will stage in areas not infested with weeds or treat for weed removal prior to using an infested area.
APM BIO-5:	Avoid and Minimize Impacts on Sensitive Natural Communities Including Jurisdictional Wetlands and Waters. PG&E would implement the following measures to minimize impacts on sensitive natural communities including open water, northern coastal salt marsh, and disturbed northern coastal salt marsh as well as other jurisdictional wetlands and waters of the United States (U.S.)/State (e.g., salt pannes). • Construction activities shall be designed to minimize disturbance of wetlands (including seasonal ponded areas) and regulated waters in the project area to the extent practicable. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction activities. Precautions shall be taken to avoid other damage to vegetation by people or equipment. • For activities that would result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist would flag access routes for crews when working in pickleweed or cordgrass dominated habitats in order to minimize impacts on these species. Crews would use protective matting (e.g., timber mats, crane pads) to minimize ground disturbance when working within pickleweed or cordgrass. If deemed necessary by the biologist, small areas of healthy vegetation would be cleared by hand prior to placement of protective mats. Erosion, sediment, and material stockpile BMPs will be installed between work areas and adjacent wetlands or waterways as required by APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP) See Section 5.9, Hydrology and Water Quality, for full description. • Compensate for both permanent and temporary impacts through consultation with the USACE and San Francisco Bay RWCQB during the Clean Water Act (CWA) 404/401 permitting process.
CULTURAL AND PALENTOLOGICAL RESOURCES	
APM CUL-1:	Exclusion Fencing. Temporary exclusionary fencing would be installed along the southern edge of Staging Area 3 between the work area and the Hetch Hetchy Aqueduct to ensure that project construction does not impact the eligible resource.

APM CUL-2:	Worker Environmental Training. Because there are areas of High or Highest sensitivity for buried cultural resources, all project field personnel should be given environmental training on cultural and paleontological resources identification and protection, and the laws and penalties governing such protection. This training may be administered by the project paleontologist/archaeologist as a stand-alone training or included as part of the overall environmental awareness training as required by the project. The training would include at minimum, the following: • The types of cultural resources likely to be encountered. • Procedures to be taken in the event of an inadvertent cultural resources discovery (see below). • Penalties for disturbing or destroying cultural resources. • The types of fossils that could occur at the project site. • The types of lithologies in which the fossils could be preserved. • The procedures that should be taken in the event of a fossil discovery. • Penalties for disturbing paleontological resources.
APM CUL-3:	Inadvertent Cultural Resource Discoveries. Because the project area is almost entirely built-over, there is high potential for inadvertent discoveries during project construction. If such discoveries take place, the following procedures will be initiated: • All ground-disturbing construction activities within 100 feet of the discovery would halt immediately. • The construction crew would protect the discovery from further disturbance until it has been assessed by a qualified archaeologist. • The construction foreman would immediately contact the designated project inspector and the PG&E Cultural Resource Specialist (CRS). • The project cultural resources specialist would coordinate with the PG&E CRS and the state and federal lead officials, as appropriate. If the discovery can be avoided or protected and no further impacts would occur, then the resource would be documented on DPR 523 forms, and no further effort would be required. If the resource cannot be avoided and may be subjected to further impacts, qualified personnel would evaluate the significance of the discovery in accordance with the state and federal laws outlined above; personnel would implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist would complete an evaluation of historic-period resources, while evaluation of prehistoric resources would be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.
APM CR-4[6]:	Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman would contact the designated cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology; the specialist will then call the San Mateo County Coroner, as appropriate. There would be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the county coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the medical county coroner determines the remains to be Native American, he/she shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).
APM PAL-1:	Unanticipated Paleontological Resource Discoveries. If unanticipated paleontological resources are discovered during construction activities, the following procedures will be followed: • Stop work immediately within 100 feet. • Contact the designated project inspector and PG&E CRS immediately. • Protect the site from further impacts, including looting, erosion or other human or natural damage. • The project CRS will arrange for a Principal Paleontologist to evaluate discovery. If the discovery is determined to be significant PG&E will implement measures to protect and document the paleontological resource. • Work may not resume within 100 feet of the find until approval by the paleontologist and PG&E CRS. In the event that significant paleontological resources are encountered during the project, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in

[6] For purposes of consistency with the PEA, **APM CR-4** has not been renamed to **APM CUL-4**.

	consultation with the landowner, PG&E and the lead agency. A Principal Paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency. A Paleontological Monitor or other qualified individual may conduct the recovery of fossil discoveries under the direction of the Principal Paleontologist.
GEOLOGY AND SOILS	
APM GEO-1:	Implement Appropriate Design Measures. Based on available references, potentially problematic subsurface conditions such as soft, loose, or liquefiable soils may exist in the project area. PG&E would perform design studies, onsite investigations, and implement appropriate design measures for foundation improvement work that would reduce potential effects of seismic ground failure, including liquefaction.
GREENHOUSE GAS EMISSIONS	
APM GHG-1:	Minimize GHG Emissions. Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time would depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen would include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings would include discussion of a "common sense" approach to vehicle use. Maintain construction equipment in proper working conditions in accordance with PG&E standards.
HAZARDS AND HAZARDOUS MATERIALS	
APM HAZ-1:	Hazardous Substance Control and Emergency Response. PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. 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 through operation. 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 on-site. If it is necessary to store chemicals on-site, they would be managed in accordance with all applicable regulations. Safety Data Sheets would be maintained and kept available on-site, as applicable. Potential soil and groundwater contamination was identified within the vicinity of project work areas. Soils or groundwater removed during drilling or other activities would be tested, and if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes would 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 at that location and contacting the Fire Department and Environmental Health Division immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the agencies. PG&E would complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.

APM HAZ-2:	Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE). PG&E would provide this environmental awareness program to staff prior to construction. This program would include the following components related to hazards and hazardous materials: • PG&E Health, Safety, and Environmental expectations and management structure. • Applicable regulations. • Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed. • Summary of the primary workplace hazards to which workers may be exposed. • Overview of the measures identified in APM HAZ-1. • Overview of the controls identified in the SWPPP under APM HYD-1.
APM HAZ 3:	Adherence to Applicable Site-specific SMPs. In addition to following its own project-specific procedures during the construction phase, PG&E would adhere to any applicable site-specific plans such as the Site Management Plan (SMP) for the 1990 Bay Road Site (see Section 3.8.3.3 of the PEA).
HYDROLOGY AND WATER QUALITY	
APM HYD 1:	Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP). PG&E would prepare and implement a SWPPP to prevent construction-related erosion, sediment runoff, and discharge of other pollutants into adjacent waterways and onto neighboring properties. Because project activities will result in ground disturbance of more than one acre, PG&E would obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (and as amended by 2010-0014-DWQ and 2012-006-DWQ). To obtain coverage under the permit, PG&E would develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, construction drawings, certification by Legally Responsible Person (LRP), contractor contact information, and annual fee—to the State of California's Stormwater Multi-Application Report Tracking System (SMARTS) database and obtain a Waste Discharger Identification (WDID) number prior to initiating construction activities. PG&E would implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP would outline implementation of BMPs for each activity that has the potential to impact neighboring properties or degrade surrounding water quality through erosion, sediment runoff, dewatering, and discharge of other pollutants.
NOISE	
APM NO-1:	Employ Noise-Reducing Practices during Construction. PG&E would employ standard noise-reducing construction practices such as the following: • Ensure that all equipment is equipped with mufflers that meet or exceed factory new-equipment standards. • Locate stationary equipment as far as practical from noise-sensitive receptors. • Limit unnecessary engine idling. • Limit all construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime project construction be necessary because of planned clearance restrictions, affected residents would be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.
RECREATION	
APM REC-1:	Coordination with Park Management and Signage. PG&E would coordinate closely with the Association of Bay Area Governments, the Midpeninsula Regional Open Space District, cities of Palo Alto and East Palo Alto, and the USFWS to communicate potential park and trail disruptions during project construction activities. Signs advising recreational facility users of construction activities would be posted at entrances and parking areas associated with open space areas (including Don Edwards San Francisco Bay National Wildlife Refuge [NWR], Ravenswood Open Space Preserve, and Palo Alto Baylands Nature Preserve), at the Cooley Landing Park education center, and at designated areas along the Bay Trail. During construction activities that could limit trail access, PG&E would provide a flagman at trail crossings to ensure public safety and safe passage through the project area.

TRANSPORTATION AND TRAFFIC	
APM TRA-1:	Traffic Management Implementation. PG&E would obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways would follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E would follow traffic control guidelines outlined in the California Manual on Uniform Traffic Control Devices, 2017 edition.
APM TRA-2:	Air Transit Coordination. PG&E would implement the following protocols related to helicopter use during construction and air traffic: • PG&E's helicopter operator will comply with all applicable FAA regulations and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan within 14 days of helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to ensure compliance with all requirements. • PG&E's helicopter operator would coordinate all project helicopter operations with local airports before and during project construction.

4.17 Electric and Magnetic Fields Summary

Section X of GO 131-D requires applications for a PTC to describe measures taken to reduce exposure to electric and magnetic fields (EMF) generated by the proposed facilities. In 1993, the Commission issued Decision 93-11-013, which established EMF policy for California's regulated utilities. In 2006, the Commission updated its EMF policy in Decision 06-01-042. The Commission stated in Decision 06-01-042 that "Low-cost EMF mitigation is not necessary in agricultural and undeveloped land except for permanently occupied residences, schools or hospitals located on these lands."

PG&E's "EMF Design Guidelines for Electrical Facilities," which is based on the aforementioned Commission decisions, exempts projects that are located exclusively adjacent to undeveloped land from the requirement to consider no-cost and low-cost EMF reduction measures. In the case of the project, the adjacent land use next to the right-of-way for the Ravenswood-Cooley Landing Line is undeveloped land. Accordingly, no EMF reduction measures are proposed for the project.

For further information about EMFs and CPUC guidelines, refer to:
http://www.cpuc.ca.gov/PUC/energy/Environment/ElectroMagnetic+Fields.

4.18 References

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PGE 2018e – Pacific Gas & Electric Company (PGE). Project Description Refinement. May 11, 2018. http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/PDFs/Project%20Description%20Refinements_PGE_rev_051118.pdf

Section 5

Environmental Analysis and Mitigation

5. Environmental Setting and Environmental Impacts

5.1 Aesthetics

AESTHETICS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.1.1 Setting

The project site is located in San Mateo County, along the southwestern edge of San Francisco Bay and within lands under the jurisdiction of the cities of Menlo Park and East Palo Alto. **Figure 5.1-1** includes a map and an annotated aerial photograph that show the project location within the regional and local landscape context, which is described in greater detail below. In this analysis, the "project site" refers to the proposed reconductored power line extending from the Ravenswood Substation in Menlo Park to the Cooley Landing Substation in East Palo Alto and includes all staging and work areas. The "project area" refers to the portion of the surrounding landscape from which the existing facilities are visible including the entirety of the baylands and open space preserves traversed by the project and the nearby developed areas from which the project is visible in unobstructed views. The extent of the viewable project area varies based on where the viewer is standing. When standing in a location with unobstructed views, the project area would be more extensive and project more visible than if standing in a location with obstructed view (e.g., obstructed by trees or houses).

The project extends from PG&E's Ravenswood Substation approximately 1.6 miles south to PG&E's Cooley Landing Substation. The existing 115 kV power line crosses three designated open space preserves: Don Edwards San Francisco Bay NWR, which abuts Ravenswood Substation on the west, north and east; Ravenswood OSP, managed by MROSD; and Baylands Nature Preserve, the northern edge of which contains Tower 8. **Figure 5.1-1** shows the location of the features described above and elsewhere in this section.

The project area is characterized visually by the contrast between the mostly undeveloped open space baylands traversed by the project and urbanized areas to the west, and by the constant presence of existing transmission infrastructure in views from surrounding areas (see **Figures 5.1-2** through **5.1-7**). The project is part of a larger utility corridor, located alongside two other power lines (Ravenswood-Palo Alto and Ravenswood-Ames) less than 150 feet from each other, with towers of similar scale and design adjacent to or staggered with the project towers. These lines extend from Ravenswood Substation and extend past Cooley Landing Substation to the south. Collectively, they are the dominant or co-dominant element in all views toward the project area.

Tower 1, adjacent to the southwest of Ravenswood Substation, is within a tidally influenced portion of the Don Edwards San Francisco Bay NWR. The project crosses SR 84 south of Ravenswood Substation

along with other power lines. This segment of SR 84 is a major thoroughfare which connects the San Francisco Peninsula with the East Bay. The western landing of the Dumbarton Bridge, which extends from Menlo Park to Newark, is approximately 0.25-mile northeast of Ravenswood Substation. Views toward the northern extent of the project site from SR 84 include the expansive Don Edwards San Francisco Bay NWR wetlands as a backdrop.

Tower 2, just south of SR 84, and Tower 3, approximately 0.2 mile further south, are within a restored portion of the South Bay Salt Ponds complex now part of the Don Edwards San Francisco Bay NWR wetlands. Tower 4 is located within ruderal grasslands that contain the SFPUC Ravenswood Valve Lot facility associated with the Hetch Hetchy Water and Power aqueduct that crosses the Bay nearby. The SFPUC facility, while not conspicuous in views, includes structures visible in views toward the project area.

The project continues south crossing an abandoned rail spur and entering the Ravenswood OSP, a salt marsh that contains the longest segment of the San Francisco Bay Trail within the project area. In this area, the project is at its closest proximity to a residential neighborhood, passing within 0.1 mile of University Village located in northeast East Palo Alto. The portion of the project within the Ravenswood OSP, which includes Towers 5, 6, and 7, also crosses the Bay Trail at two separate locations. Tower 7 is located within approximately 0.1 mile of an auto salvage yard which, along with other industrial-appearing facilities, are the primary land uses in the area west of this portion of the project. Unobstructed views toward San Francisco Bay from within Ravenswood OSP are only available east of the transmission corridor; all other views toward the salt marshes include transmission towers and lines as a dominant feature or as a prominent backdrop.

South of Bay Road, the project enters the Baylands Nature Preserve at Tower 8 and then turns westward to connect with Tower 9 located east of the Cooley Landing Substation. Cooley Landing, a recreational area that includes a segment of the Bay Trail and walking trails as well as Cooley Landing Park and the Cooley Landing Educational Center, is approximately 0.2 mile east of where the project crosses Bay Road. Cooley Landing Substation is approximately 0.2 mile west of the Bay Road crossing. Views to the north and south from this portion of the project area are expansive and include salt marsh and transmission facilities. To the east, Cooley Landing is visible with the San Francisco Bay and East Bay hills as backdrop. Evident in views to the west, beyond Cooley Landing Substation and the auto salvage yard, are other industrial-appearing developments and uses typical of this part of East Palo Alto.

Visual Inventory Methodology

The US Department of Transportation, Federal Highway Administration's (FHWA) assessment methodology (FHWA 1988) was applied for the proposed project to establish a baseline environmental setting, identify and describe the project viewers, and select viewpoints from which to identify the level of contrast that the proposed project could create to the existing environment. Field observations were conducted in February 2018 to document existing visual conditions in the project area and to identify potentially affected sensitive viewing locations. This study also addresses the CEQA Guidelines for visual (aesthetics) impact analysis.

This aesthetic impact assessment process involves identification of:

- Aesthetic character and quality of the project region and the immediate project area;
- Important viewer locations (e.g., roads, trails, residential neighborhoods) and the general visibility of the project area and the site using descriptions and photographs;

- Viewer groups and their sensitivity (e.g., general viewer awareness and concern for views and changes to those views);
- Relevant federal, state, and local government policies and concerns for protection of aesthetic resources; and
- Aesthetic impacts of the proposed project and their levels of significance.

The criteria for describing aesthetic character and quality include vividness, intactness, and unity, as defined below.

- Vividness. The visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- Intactness. The visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity. The visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape. (FHWA 1988)

In addition to the criteria above, viewer sensitivity has been taken into account to assist with determining impacts of a visual change. Viewer sensitivity is described as a viewer's expectation or concern for a view based on the viewer's activity and awareness, any local or cultural significance of the project site or area, and/or any scenic designations associated with the viewing locations (e.g., scenic vista, scenic highway).

Views that form a representative set of publicly accessible locations are included here to convey a sense of existing visual conditions in the project area. These viewpoints are referred to as Key Observation Points (KOPs). The selection of KOPs are intended to reflect the range of views and viewers in the project area. Therefore, they include viewpoints from where there is likely to be a relatively high volume of viewers, and viewpoints where viewers may be sensitive to changes to the aesthetic environment. Viewers include those using nearby recreational facilities and open spaces, as well as motorists.

The KOPs selected are within the project area, which is defined as the general area from which a project is visible. For purposes of describing the project area visual setting and assessing potential visual impacts, the project area can be broken down into foreground, middleground, and background zones. The foreground is defined as the zone within 0.25 mile to 0.5 mile or less of the viewer; the middleground is defined as the zone that extends from the foreground to a maximum of 3 to 5 miles of the viewer; and the background zone extends from the middleground to infinity. Viewing distance is a key factor that affects the potential degree of project visibility. Visual details generally become apparent to the viewer when they are observed in the foreground, at a distance of 0.25 to 0.5 mile or less. The primary focus of the visual analysis included in this assessment is the foreground zone where visual details are most apparent, and up to approximately 1 mile from the project site where change could be noticeable.

In the analysis of a project's visual effects, construction-related impacts are assumed to be temporary and short-term. Therefore, while the temporary visual impacts of construction activities are identified and analyzed, this assessment focuses on permanent alterations to the visual environment.

Existing Landscape Setting and Viewer Characteristics

This section discusses the existing visual character of the region, existing visual quality in the project area; viewer concern, and viewer exposure to the proposed project, leading to a rating of overall visual sensitivity. The section also identifies existing sources of light and glare within the project area.

Regional Context. The project area is located in the southeastern portion of the San Francisco Peninsula as part of a network of baylands and open spaces which form the San Francisco Bay shoreline. The mostly salt marsh and grassy baylands are located at or a few feet above sea level. The project area is adjacent to the cities of Menlo Park and East Palo Alto, which are part of an area known as the Silicon Valley; a broadly urbanized area bounded by the Santa Cruz Mountains located nine miles to the west of the project area. While views within the developed portions of the region nearest the project area are limited by intervening structures, as part of urban development, and some topography at the western extents, views of and in the flat baylands are expansive and allow the project area to be seen within a larger geographic area. The Santa Cruz Mountains and East Bay hills, which serve as backdrop to the cities and bay that border the baylands areas, are readily viewable from the Bay Trail and other recreational facilities that provide access to the Don Edwards San Francisco Bay NWR, local and regional parks, and open space preserves. In addition, views within the baylands areas, such as the project area, are less obstructed than those in nearby developed areas. As a result, a greater portion of the surrounding area, including scenic features, are visible with limited obstructions from these areas.

Project Viewshed and Key Observation Points. A scenic vista is defined as a distant public view along or through an opening or corridor that can be easily identified, recognized, and/or valued for its scenic quality. Three scenic vistas have been identified for the project area and are described below as KOP 1, 2, and 3, respectively.

- KOP 1. The eastbound approach to the intersection of SR 84 and University Avenue is identified by the City of Menlo Park as a "View Corridor / Scenic Vista."

- KOP 2. Observation decks located along the Bay Trail within the Don Edwards San Francisco Bay NWR include interpretive signage identifying flora and fauna visible from specific locations. These areas established as observation decks are considered scenic vistas.

- KOP 3. The City of East Palo Alto identifies views looking down Bay Road toward Cooley Landing from the intersection of Clarke Avenue and Bay Road as an "existing viewshed to be preserved."

Six KOPs were identified to serve as locations for a representative set of views toward the project site from viewpoints throughout the project area. The evaluation of potential impacts to aesthetics is based on simulations produced for views from KOP 1, KOP 2, and KOP 3, which are considered to be scenic vistas for the reasons set forth above. Additional representative views from KOP 4, KOP 5, and KOP 6 are included to serve the purpose of further demonstrating project visibility and the existing visual character of the project area.

The location and view orientation of each KOP is shown in **Figure 5.1-1**. **Table 5.1-1** provides summary information for the KOPs, which are described in greater detail in **Table 5.1-2**.

Figure 5.1-1
Key Observation Points

TABLE 5.1-1 SUMMARY OF KEY OBSERVATION POINTS

Key Observation Point/View Orientation	Figure	Approximate Distance from Project (miles)	Rationale for Selection	Simulated?
1. SR 84 east of University Avenue, view to NE	5.1-2a	0.3	Identified as "View Corridor / Scenic Vista" in Menlo Park General Plan. High volume of viewers from highway traffic	Yes (Fig. 5.1-2b)
2. Bay Trail within Don Edwards San Francisco Bay NWR, view to WSW	5.1-3a	0.6	Unobstructed view from nearby recreational area; presumed visual sensitivity along Bay Trail	Yes (Fig. 5.1-3b)
3. Bay Trail segment at Cooley Landing, view to SW	5.1-4a	0.1	View from trail approximates views from Cooley Landing recreation area and Cooley Landing Education Center	Yes (Fig. 5.1-4b)
4. University Avenue Bike Path, view to NNE	5.1-5	0.5	Sustained views toward Ravenswood Substation from vehicles and bicycles; approximates views from future Bay Trail link	No
5. Bay Trail within Ravenswood OSP, view to S	5.1-6	<0.1	Relatively expansive views from within Ravenswood Open Space Preserve, adjacent to power line with longer view toward Cooley Landing Substation	No
6. Bay Trail within Baylands Nature Preserve, view to N	5.1-7	0.4	Bay Trail at Faber Laumeister Trail; approximates views from nearby residences and school	No

TABLE 5.1-2 KEY OBSERVATION POINT DESCRIPTIONS AND AESTHETIC QUALITIES

Key Observation Point and Figure Reference	Visual Character	Vividness	Intactness	Unity	Viewer Sensitivity
KOP 1 View northeast from SR 84 East of University Avenue (Figure 5.1-2a)	The visual character is dominated by the eastbound lanes of SR 84, the Ravenswood Substation, which is visible on the north side of SR 84, and Towers 1 and 2 of the project power line, which are visible along the left and right edges of the view, respectively. The restored South Bay Salt Ponds, which are part of the Don Edwards San Francisco Bay NWR, are visible in the right half of the view, south of SR 84. A power line extends from Ravenswood Substation to the east initially appearing alongside the Dumbarton Bridge in a northeasterly direction before turning to the southeast across the bay in the right side of the view. Despite the visual presence of natural features such as the East Bay hills and a portion of the Don Edwards San Francisco Bay NWR, transportation and electrical transmission infrastructure characterize the existing view.	*Low*	*Low*	*Low*	*Moderate*
KOP 2 Bay Trail within Don Edwards San Francisco Bay NWR (Figure 5.1-3a)	The visual character is dominated by the eastern extent of the Don Edwards San Francisco Bay NWR where birdwatching activities are common. The observation deck is oriented inward and away from the bay and toward the portion of the Don Edwards San Francisco Bay NWR that includes the project power line. Ravenswood Substation and associated towers are clearly visible and concentrated in the right side of the view. Towers 1 and 2 of the project power line are among the tallest towers in the area and are visible alongside or near other similarly-scaled towers to the right and left of the view's center, respectively.	*Moderately high*	*Moderately high*	*Moderate*	*Moderately high*
KOP 3 Bay Trail Segment at Cooley Landing (Figure 5.1-4a)	The visual character is dominated by views to the west toward the project by viewers using trails and other facilities in the Cooley Landing area, including Cooley Landing Park and the Cooley Landing Educational Center. It also characterized eastward views from points along Bay Road, which are identified as a "Key Viewshed" in the *Ravenswood / 4 Corners TOD Specific Plan*. Project Tower 8 is visible near the center of the view beyond the trailhead signs. Tower 9, to which conductors extend westward from Tower 8, is visible in the right half of the view in front of Cooley Landing Substation. This view is characterized by the intersection of transmission facilities with recreational and open space areas and by the intersection of individual power lines. The southern edge of the Ravenswood OSP is visible north of Bay Road and the northern extent of the Baylands Nature Preserve, which includes Tower 8, is visible on the southern side of Bay Road. The Ravenswood – Palo Alto power line passes through the view in the foreground and the Ravenswood – Ames power line is visible extending toward Cooley Landing Substation before turning southward where it is aligned with the Bay Trail in the portion of the Baylands Nature Preserve located south of the substation.	*High*	*Low*	*Low*	*High*

TABLE 5.1-2 KEY OBSERVATION POINT DESCRIPTIONS AND AESTHETIC QUALITIES

Key Observation Point and Figure Reference	Visual Character	Vividness	Intactness	Unity	Viewer Sensitivity
KOP 4 University Avenue Bike Path (Figure 5.1-5)	The visual character is dominated by views of the Don Edwards San Francisco Bay NWR in the foreground and middleground with the Ravenswood Substation in the center of the background along with the existing project power line crossing the background view southward. These structures are visible beyond the southwestern portion of the Don Edwards San Francisco Bay NWR which contains the restored salt ponds that characterize this view and reinforce the project's baylands setting.	*Moderate*	*Moderate*	*Moderate*	*Moderate*
KOP 5 Bay Trail within Ravenswood Open Space Preserve (Figure 5.1-6)	The visual character is dominated by views of a relatively undisturbed segment of salt marsh bounded to the east and south by transmission infrastructure and other uses that are indiscernible from this distance. Of the three power lines visible along the left side of the view, the Ravenswood-Cooley Landing Line is the one closest to the KOP. Tower 9, the last tower before the power line enters Cooley Landing Substation, is nearest the center of the view. The lattice-style towers appear uniformly in the left edge of the view although differences in scale and form are noticeable. Conductors are detectable from this distance and serve to reinforce the presence of linear corridors in this view. Additional transmission towers located within the western edge of Cooley Landing Substation are visible and appear clustered in the right portion of the view.	*Low*	*Moderate*	*Moderate*	*Moderate*
KOP 6 Bay Trail within Palo Alto Baylands Nature Preserve (Figure 5.1-7)	The visual character is dominated by views of a segment of the Bay Trail within Baylands Nature Preserve and to demonstrate potential visibility of the project in views to the north. This portion of the Bay Trail intersects with the Faber Laumeister Trail which extends eastward and is near a trail access point from an East Palo Alto residential neighborhood and an elementary school. The view is characterized by an undisturbed, open space salt marsh in the foreground against a somewhat symmetrical backdrop with the Cooley Landing Substation and the Cooley Landing Education Center bracketing the view and the more distant Dumbarton Bridge apparent in between. The East Bay hills, visible in views to the north from this part of the Bay Area, appear along the entirety of the background. This view is characterized by its expansiveness and the subordination of built structures to the natural-appearing open space in the foreground.	*Low*	*Moderate*	*Moderate*	*Moderate*

Regulatory Background

Federal

No federal regulations related to aesthetic resources apply to the project.

State

California Scenic Highway Program. California's Scenic Highway Program, a provision of the Streets and Highways Code, was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway Program includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose to add routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required for a highway to be officially designated.

There are no designated state scenic highways in the project area. A review of California Scenic Highway Program indicates that the nearest state scenic highway is a portion of Interstate 280, approximately six miles west of the project area. The project would not be visible from this distance.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

This section includes a summary of local standards or ordinances that describe the visual character of the project area for informational purposes and to assist with the CEQA review process.

City of Menlo Park. The City of Menlo Park General Plan includes goals, policies, and programs intended to guide development and conservation within Menlo Park, while retaining the existing community character. The General Plan is currently being updated. The Land Use and Circulation elements, referred to as "ConnectMenlo," were adopted by the Menlo Park City Council in 2016 (City of Menlo Park 2016a and City of Menlo Park 2016b). The Open Space / Conservation, Noise and Safety elements were updated in 2013 (City of Menlo Park 2013).

The Land Use Element identifies the intersection of SR 84 and University Avenue as a gateway, and the eastbound approach to this intersection – and the baylands and Dumbarton Bridge – as a "View Corridor/Scenic Vista." It also includes the following:

- Goal LU-6 – Preserve open-space lands for recreation; protect natural resources and air and water quality; and protect and enhance scenic qualities.
- Policy LU-6.6 – Public Bay Access. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes including restoration efforts, and completion of the Bay Trail.

The list of Open Space and Conservation goals, policies, and programs in the Open Space / Conservation, Noise, and Safety elements describes the city's approach to natural resource conservation as including preservation of the visual amenities of Menlo Park's baylands and shoreline, and protection of "lands that

have inherent qualities to provide visual amenity, including scenic water areas, creeks, and the San Francisco Bay" (City of Menlo Park 2013). These elements include the following:

- Goal OSC1 – Maintain, protect, and enhance open space and natural resources: Protect, conserve and enhance valuable natural resources, open areas and designated open space lands rich in scenic value, wildlife or of a fragile ecological nature through conservation and restoration efforts.
- Policy OSC 1.14 – Protection of Conservation and Scenic Area. Protect conservation and scenic areas from deterioration or destruction by vandalism, private actions or public actions.

City of East Palo Alto. The City of East Palo Alto General Plan (City of East Palo Alto 2017) includes a goal in the Parks, Open Space, and Conservation Element (Goal POC-4) targeting protection and preservation of the city's natural habitat and wildlife, with the intent of preserving the aesthetic and ecological quality of the city's nearby urban natural resources. The General Plan implements the Ravenswood / 4 Corners TOD (Transit-Oriented Development) Specific Plan (City of East Palo Alto 2013), which addresses the redevelopment area adjacent to the project area. The Specific Plan envisions new office uses in the easternmost portion of the redevelopment area, just west of the Ravenswood Open Space Preserve. Development guidelines include measures to ensure view corridors toward the open spaces to the west and the following "Key Viewsheds" are identified:

- "Northern Viewshed aligned with proposed alignment of Bay Trail" – Existing Viewshed to be preserved, at eastern end of Purdue Avenue.
- "Central Viewshed aligned with alignment of proposed new street" – Proposed Viewshed east of the current terminus of Notre Dame Avenue.
- "Viewshed aligned with Bay Road" – Existing Viewshed to be preserved, looking down Bay Road toward Cooley Landing from the intersection of Clarke Avenue and Bay Road.

The Specific Plan includes a number of potential new links, spurs, or segments associated with the Bay Trail, none of which currently exist. Potential connections could be added within the northeast corner of the Specific Plan area via a connection loop that would extend from the terminus at Purdue Avenue north of Bay Road and from the midpoint of Pulgas Avenue south of Bay Road, and from Weeks Street in the south to Bay Road.

5.1.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for aesthetics resources as part of the project.

Visual Impact Assessment Methodology

Accepted visual assessment methods, including those adopted by the FHWA, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria for evaluating visual impact significance, can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources while others tend to be distracting (US Department of Transportation 2015). The project viewshed includes several types of concerned viewer groups, primarily recreationists and motorists, but also includes residents and workers to the west of the project site.

Recreationists include all people using the Bay Trail and other trails in the baylands open spaces, including walkways within Cooley Landing Park and Bay Trail access points. Recreational activities assumed for these areas involve hiking, wildlife observation, and use of interpretive trails and the Cooley Landing Education Center. View duration for this group could range from several minutes to several hours depending on the activity. Viewer sensitivity of this group, presumed to be moderate in size, is considered moderate to high.

Motorists, the largest viewer group, include people traveling on SR 84 and local roads in Menlo Park and East Palo Alto. Travelers on SR 84 are by far the largest part of the motorist viewer group because the highway is a major commuter link between the San Francisco Peninsula and the East Bay. The project crosses SR 84 south of Ravenswood Substation. While the highway allows for relatively high rates of speed, commute-time traffic can become congested thereby increasing the duration of views toward the project where it crosses the highway potentially lasting up to a few minutes. Viewer sensitivity of motorists is considered low to moderate.

Bicyclists, who may be recreationists or commuters, would have similarly sustained views toward the crossing of SR 84 from the adjacent bike path. The University Avenue bike path allows for more distant, but also more sustained, views of the project. Viewer sensitivity of bicyclists is considered moderate to high.

Partial, limited views toward the project are visible from the residential neighborhoods just west of the project. While such views are long in duration, most homes in these neighborhoods are oriented away from the project, which is generally screened in views by vegetation, other structures, or fences. Residential viewer sensitivity is considered to be high. Workers in the area are generally considered to have a moderate degree of viewer sensitivity. In the project area there are several offices and work locations – notably Facebook, which is approximately 0.5 mile from Ravenswood Substation – from which portions of the project are visible in limited views.

Project Visual Description

Project impacts related to aesthetic resources were evaluated against the CEQA environmental checklist and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the permanent structural changes. The operation and maintenance phase are also analyzed; however, activities required for the upgraded power line would not change from those currently required for the existing system.

The project involves reconductoring the existing 115 kV power line between Ravenswood Substation and Cooley Landing Substation and installing one new TSP at both substations. Construction activities would include installing new conductor, installing the two new TSPs, performing minor tower modifications, and establishing required access and work areas as described in **Section 4, Project Description**. Operation and maintenance activities for the reconductored power line would not change from current practices.

Specific to aesthetics, the project would include the addition of cage-top extensions to two of the line's nine towers (Towers 1 and 2) and the addition of optical fiber ground wire (OPGW) peaks to the top of all towers. The cage-top extensions and OPGW peaks will be constructed of materials similar to those used for the existing towers. Cage-top extensions will add approximately 10 feet in height to ~~t~~Towers 1 and 2; OPGW peaks will be approximately 4.5 feet. In addition, a new TSP would be installed at both the Ravenswood Substation and Cooley Landing Substation and would be approximately 55 feet tall and 80 feet tall, respectively (PGE 2018e).

Lastly, Towers 1, 2, 8, and 9 would receive foundation improvements that would not substantially alter the appearance of these towers; as such, foundation improvements are not included in the proposed activities evaluated here.

Construction-related impacts to aesthetics would be temporary. Construction activities would include: matting of work areas around Towers 1, 2, and 8; installation of approximately six temporary guard structures at crossings of electric lines, recreation trails, and roadways; establishment of two pull sites; and preparation of up to five staging areas. Staging areas would include landing zones for the helicopters that will be used to transport crews and materials to towers where access by ground is difficult. Crews would be required to maintain clean work areas and PG&E would conduct a final survey to ensure that cleanup activities have been successfully completed.

The following CEQA analysis focuses on the permanent structural changes described above and the temporary effects to aesthetics during construction activities. The following analysis does not discuss operations and maintenance activities required for the upgraded power line because those activities would not change from those currently required for the existing system.

Aesthetics Impacts

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

Construction

LESS THAN SIGNIFICANT IMPACT. Construction equipment and activities would introduce new and additional elements in immediate and near foreground views that could result in adverse effects on scenic vistas. However, these activities would take place adjacent to the existing tower sites, which already include industrial visual components. Therefore, construction activities would result in minimal impacts to visual character in the area and, therefore, the project would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. As described previously, a scenic vista is defined as a distant public view along or through an opening or corridor that can be easily identified, recognized, and/or valued for its scenic quality. As identified under *Existing Landscape Setting and Viewer Characteristics*, views from KOPs 1 through 3 are considered scenic vistas that the proposed project has the potential to affect.

Potential impacts to a scenic vista were analyzed based on simulations produced by the applicant for views from KOP 1, KOP 2, and KOP 3. These specific KOPs, and the representative simulations, were selected because these viewpoints represent a relatively high volume of viewers and represent viewers who would be most sensitive to changes in the visual environment, particularly a scenic vista as identified by the City of Menlo Park, City of East Palo Alto, and the unique visual qualities in the Don Edwards San Francisco Bay NWR.

Views from KOP 4, KOP 5, and KOP 6 were not considered to supplement the analysis of potential impacts to a scenic vista beyond KOPs 1 through 3. KOPs 1 through 3 are specifically considered to provide views of a scenic vista based on definitions of the City of Menlo Park and City of East Palo Alto and based on the unique, close-up views provided from observation decks in the Don Edwards San Francisco Bay NWR. However, these three KOPs are considered to provide additional representative

views and portray project visibility in the extended visual environment surrounding the project area and are discussed in part (c) below.

KOP 1 View northeast from SR 84 East of University Avenue (Figure 5.1-2a)

Currently, the eastbound lanes of SR 84, Ravenswood Substation, and nearby transmission towers comprise the majority of the view from KOP 1 and its vicinity. The vividness is considered low at KOP 1 because the existing various transmission lines and lattice steel towers contrast with the blue sky and otherwise open landscape in the view. In addition, there is an absence of unique or striking landscape elements or patterns in the view. The intactness of the view at KOP 1 is considered low due to the dominance of encroaching elements with various forms, lines, and textures in the foreground and middleground views. Unity of the view at KOP 1 is considered low due to the absence of visual coherence and compositional harmony associated with the varied components of the existing towers in the foreground and middleground.

Although the proposed modifications to existing structures would slightly increase the apparent height of these two towers, which appear against an open sky backdrop, no distant feature(s) in the view would be obstructed by the proposed modifications. When comparing existing views to simulated views of the proposed project from KOP 1 (refer to **Figures 5.1-2a** and **5.1-2b**), it can be determined that the cage-top extensions and OPGW peaks at Towers 1 and 2 would not substantially alter existing visual conditions. In addition, numerous vertical extending industrial components currently characterize views of the Ravenswood Substation in which a new TSP would not be discernible and would not obstruct any views.

Overall, the installation of cage-top extensions and OPGW peaks, including raised conductors and an optical fiber, along with the new TSP, would not result in any substantial, adverse effect on views from KOP 1.

KOP 2 Bay Trail within Don Edwards San Francisco Bay NWR (Figure 5.1-3a)

Currently, Tower 1 appears to extend slightly above the distant mountain skyline but not higher than other nearby towers located and viewable to the north. The vividness at KOP 2 is considered to be moderately high because from this vantage point the Don Edwards San Francisco Bay NWR wetlands, and the wildlife inhabiting them, create the most vivid element in the view and the project area appears set back from the more natural-appearing portion of the nature refuge. The towers are the strongest vertical elements in the view and some towers nearest the substation appear to extend above the mountain skyline in the back of the view. However, such encroachment is minor and there is a moderately high degree of intactness in the view from KOP 2 because the project area appears distinct from the Don Edwards San Francisco Bay NWR to the east and urbanized areas to the west and all of these areas are backdropped by mountains that serve as a natural regional boundary. Unity of the view at KOP 2 is considered moderate because of the primary view of the Don Edwards San Francisco Bay NWR and distant mountains even with the absence of an overall visual coherence and compositional harmony of the varied components (e.g., existing towers, Don Edwards San Francisco Bay NWR, development in the foreground and middleground). In addition, numerous vertical extending industrial components currently characterize views of the Ravenswood Substation in which a new TSP would not be discernible and would not obstruct any views.

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View to northeast from KOP 1, along eastbound SR 84, just east of University Avenue. Ravenswood Substation is visible to the north of the highway, and Towers 1 and 2 are visible to the north and south of the highway, respectively.

Figure 5.1-2a
Key Observation Point 1-Existing View

Source: PEA Figure 3.1-2a

View from KOP 1 with project modifications. Cage-top extensions and OPGW peaks atop Towers 1 and 2 are visible.

Figure 5.1-2b
Key Observation Point 1-Simulated View

Source: PEA Figure 3.1-2a

View to the west-southwest from KOP 2, at an observation deck along the San Francisco Bay Trail within the Don Edwards San Francisco Bay National Wildlife Refuge. Ravenswood Substation is visible along the right edge of the view and Towers 1 and 2 are visible extending southward.

Figure 5.1-3a
Key Observation Point 2- Existing View

Sources: PEA Figure 3.1-11

View from KOP 2 with project modifications. Cage-top extensions and OPGW peaks atop Towers 1 and 2 are visible.

Figure 5.1-3b
Key Observation Point 2- Simulated View

Sources: PEA Figure 3.1-12

When comparing existing views to simulated views of the proposed project from KOP 2 (refer to **Figures 5.1-3a** and **5.1-3b**), the proposed modifications to Towers 1 and 2 would not substantially alter views from the viewpoint within the Don Edwards San Francisco Bay NWR. The installation of cage-top extensions and OPGW peaks, including raised conductors and an optical fiber, at the two towers, along with the new TSP, would be slightly noticeable but would not compromise or substantially affect the scenic aspects of the view from KOP 2.

KOP 3 Bay Trail Segment at Cooley Landing (Figure 5.1-4a)

KOP 3 provides current views to the east towards the project area of the "existing viewshed to be preserved," as identified by the City of East Palo Alto, along a portion of Bay Road. As can be seen from this viewpoint, transmission towers dominate the middleground portions of view and extend noticeably above the distant mountain skyline. The vividness at KOP 3 is considered high because from this viewpoint the existing towers and the Don Edwards San Francisco NWR wetlands are the most vivid element in the view and the project area appears set within the natural-appearing portion of the nature refuge. However, the towers, which are the strongest vertical elements in the view and extend above the mountain skyline in the back of the view, create a low degree of intactness in the view from KOP 3. Unity of the view at KOP 3 is considered low due to the absence of visual coherence and compositional harmony associated with the varied components of the existing towers and the Don Edwards San Francisco Bay NWR in the foreground and middleground. When comparing existing views to simulated views of the proposed project from KOP 3 (refer to **Figures 5.1-4a** and **5.1-4b**), the proposed modifications to Towers 8 and 9 would not substantially alter views along a portion of Bay Road. In addition, numerous vertical extending industrial components currently characterize views of the Cooley Landing Substation in which a new TSP would not be discernible and would not obstruct any views.

The installation of cage-top extensions and OPGW peaks on two towers, including raised conductors and an optical fiber, along with the new TSP, would be slightly noticeable but would not compromise or substantially affect the scenic aspects of the view from KOP 3.

Visual sensitivity for KOPs 1, 2, and 3 is considered high or moderately high due to the high volume of viewers with moderately high viewer sensitivity (**Table 5.1-2**); however, overall scenic quality for these views is generally low due to the existing infrastructure (e.g., transmission towers, substation components) that dominate these views.

The proposed project would not have a substantial adverse effect on scenic vistas and, therefore, impacts to scenic vistas would be less than significant.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. As documented in Section 5.1.1, there are no designated State Scenic Highways within the project viewshed; therefore, the project would not substantially damage scenic resources within a State Scenic Highway and there would be no impact.

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View to the southwest from KOP 3, along a Bay Trail segment near Cooley Landing.
Towers 8 and 9 are visible in front of Cooley Landing Substation.

Figure 5.1-4a
Key Observation Point 3- Existing View

Source: PEA Figure 3.1-13

View from KOP 3 with project modifications. OPGW peaks atop Towers 8 and 9 are visible.

Figure 5.1-4b
Key Observation Point 3 - Simulated View

Source: PEA Figure 3.1-14

The marshes and baylands in which the project area is located could be considered a scenic resource. The project's potential to degrade the visual character or quality of these scenic resources is analyzed under subsection (c) below.

Operation and Maintenance

NO IMPACT. There are no designated State Scenic Highways within the project viewshed; therefore, the project would not substantially damage scenic resources within a State Scenic Highway and there would be no impact.

The project's potential to degrade the visual character or quality of the marshes and baylands resources is analyzed under subsection (c) below.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Construction equipment and activities would temporarily introduce additional viewable elements to the immediate and near foreground views that could adversely affect views of scenic vistas. Construction activities would take place exclusively adjacent to existing tower sites, which already incorporate industrial visual qualities. Based on the existing physical conditions in the project area (industrial within open spaces) and the temporary nature of construction activities, changes in contrast as a result of the presence of construction equipment would be minimal and is not considered to substantially reduce the existing vividness, intactness, or unity in the project area. Overall, construction activities would not substantially degrade the existing visual character or quality of the project area and would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. The installation of cage-top extensions on Towers 1 and 2, and OPGW peaks on ~~four~~ all nine transmission towers in the project area, including raised conductors and an optical fiber, would be slightly noticeable to viewers in the project area, primarily to those in the Don Edwards San Francisco Bay NWR. However, these modifications would be the only noticeable permanent, physical change to the views when the project is complete. Specifically, cage-top extensions would add approximately 10 feet in height to ~~each tower~~ Towers 1 and 2, and OPGW peaks would ~~be~~ add approximately 4.5 feet ~~taller~~ to all nine towers. These added heights, as compared to the existing heights of the towers, and use of the same materials as the existing towers would not substantially degrade the existing visual character or quality of the site and its surroundings. In addition, numerous vertical extending industrial components currently characterize views of the Ravenswood Substation and Cooley Landing Substation in which two new TSPs (one at each substation) would not be discernible and would not substantially degrade the existing visual character or quality of the site and its surroundings.

Current views from each KOP are characterized by the presence of electric transmission infrastructure, primarily the individual towers. Although the proposed modifications would be visible in the existing transmission corridor, and on individual towers, the changes would only be noticeable in close proximity to such changes, such as in the Don Edwards San Francisco Bay NWR and/or on the

Bay Trail. The physical changes would be difficult to identify from distant views where the modifications would meld with the existing industrial infrastructure. In addition, people visiting or traveling through the project area (e.g., recreationists, motorists, nearby residents, hikers on the Bay Trail) would most likely focus on the surrounding landscape, wildlife, or other natural features and away from numerous towers and power line extensions. Existing aesthetic resources within current views would not be obscured with implementation of the proposed modifications and would most likely be detected, if at all, as an incremental, inconsequential change to the existing visual landscape.

Visual sensitivity for KOPs 1 through 6 is moderate to high given most viewers are commuters or residents engaged in recreational activities and commuting; however, overall existing visual quality from these views ranges from low to moderate due to an overall lack of vividness, intactness, and/or unity.

Discussions and conclusions specific to KOP 1, KOP 2, and KOP 3 as related to unity, vividness, and intactness are provided in part (a) above.

As for KOP 4, KOP 5, and KOP 6 (see **Figures 5.1-5** through **5.1-7**), vividness is considered low to moderate because land forms appear in an irregular pattern although they are visible within the Don Edwards San Francisco Bay NWR. The transmission facilities which form these distant vantage points contrast with the natural-appearing view. Intactness for KOPs 4 through 6 is considered to be moderate because both the power lines and towers crossing the bay are noticeable but other natural features in the baylands area are the primary views and not substantially diminished by encroaching elements in this setting (e.g., transmission infrastructure). Unity for KOPs 4 through 6 is considered to be moderate because though visible, the structures do not dominate the view from these representative KOPs. Overall, the changes brought about by the project would not substantially degrade the existing visual character or quality of the landscape setting. The project would result in modifications to existing transmission facilities and would not substantially degrade the existing visual character or quality of the project area. Therefore, impacts would be less than significant.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. PG&E submitted the required Notice of Proposed Construction and Alteration Application to the Federal Aviation Administration (FAA) for all nine project towers and the FAA confirmed the project would not cause any air navigation hazards and stated that marking and lighting are not required for any of the tower modifications.

Construction activities are anticipated to occur between 7 a.m. and 7 p.m., five days per week. The applicant further anticipates construction to progress quickly and anticipates construction activities to not occur near any one tower for more than a few days at a time.

View to the north-northeast from KOP 4, along the University Avenue Bike Path in Menlo Park. Ravenswood Substation is visible in the center of the view. Tower 2 is the southernmost project transmission tower visible.

Figure 5.1-5
Key Observation Point 4

Source: PEA Figure 3.1-5

View to the south from KOP 5, along the Bay Trail within the Ravenswood Open Space Preserve. The Ravenswood to Cooley Landing transmission line is the nearest line passing through the Preserve along the left side of the view, and Cooley Landing Substation is partially visible in the right half of the view.

Figure 5.1-6
Key Observation Point 5

Source: PEA Figure 3.1-16

View to the north from the Bay Trail within the Palo Alto Baylands Nature Preserve. Cooley Landing Substation is visible along the left edge of the view and the Cooley Landing Park Education Center is visible along the right side of the view.

Figure 5.1-7
Key Observation Point 6

Source: PEA Figure 3.1-17

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PG&E does not anticipate construction activities to occur during nighttime hours; however, limited construction line activities may occur during nighttime hours (after sunset and before sunrise) and may require the use of nighttime lighting. In addition, nighttime lighting may be needed in the early mornings and in the evenings during the winter months. If nighttime lighting is needed to be used during construction activities, the lighting would be temporary and would be directed upward and away from nearest residential neighborhoods (considered a sensitive receptor).

The limited use of nighttime lighting and directing the lighting upward and away from residential neighborhoods would substantially reduce the potential for creating adverse effects from nighttime lighting at the nearest residences. In addition, the closest residence to the project site is located approximately 700 feet away; this distance would substantially lessen the potential effects of nighttime lighting at a sensitive receptor. Construction activities, and associated construction equipment, are considered to not have the potential to create glare, a high degree of contrast between bright and dark areas in a field of view. Project impacts from glare are analyzed under operation and maintenance activities below.

Overall, project construction activities would not create a new source of substantial light that would have the potential to adversely affecting day or nighttime views in the area and impacts would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Implementation of the project would not result in a new, permanent source of nighttime lighting or daytime glare that would adversely affect day or nighttime views in the area.

Glare occurs with the creation of a high degree of contrast between bright and dark areas in a field of view, which is difficult for the human eye to adjust to the differences in brightness. When glare occurs at high levels, it makes it difficult to see. A well-known example of glare occurs when driving westward directly towards the setting sun. Proposed modifications to the towers would be made of the same material as the existing towers and have a galvanized finish that is similar to what has been applied to existing towers. The proposed modifications material (i.e., galvanized metal) would also weather to a dull, non-reflective patina as can currently be seen on the existing towers. Therefore, use of the same materials would result in no new source of substantial glare.

Overall, project operation would not create a new source of substantial light or glare adversely affecting day or nighttime views in the area and impacts would be less than significant.

Required Mitigation Measures: None.

5.1.3 References

Caltrans 2011 – California Department of Transportation (Caltrans). California Scenic Highway Program. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ Accessed April 9, 2018.

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City of Menlo Park 2013 – City of Menlo Park. City of Menlo Park General Plan Open Space / Conservation, Noise and Safety elements. Adopted May 21, 2013. Online: http://menlopark.org/DocumentCenter/View/234/ Accessed April 10, 2018.

City of Menlo Park 2016a – City of Menlo Park. City of Menlo Park Community Development Department, Planning Division**.** ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update for the City of Menlo Park. Accessed April 10, 2018. Online: https://www.menlopark.org/DocumentCenter/View/12063

City of Menlo Park 2016b – City of Menlo Park. City of Menlo Park Community Development Department, Planning Division. General Plan. Land Use Element, adopted November 29, 2016. Online: https://www.menlopark.org/DocumentCenter/View/12613 Accessed on April 10, 2018.

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USFWS 2012 – United States Fish and Wildlife Service (USFWS). Don Edwards San Francisco Bay National Wildlife Refuge Final Comprehensive Conservation Plan. Online: https://www.fws.gov/uploadedFiles/DESFBFinalCCP_sm.pdf Accessed April 10, 2018.

5.2 Agriculture and Forestry Resources

AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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 non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.2.1 Setting

The project is located in the cities of Menlo Park and East Palo Alto, in the Southeastern Peninsula area of San Mateo County. The project site is primarily within an open space area. There are no agricultural or forestry lands in the project area (CDOC 2016a, CDOC 2016b, City of Menlo Park 2016, and City of East Palo Alto 2017).

Regulatory Background

Federal

No federal regulations apply to the project with respect to agriculture and forestry resources.

State

Williamson Act. The Williamson Act, or California Land Conservation Act (California Government Code Section 51200 et seq.), is designed to preserve agricultural and open space land. It allows private landowners to enroll in contracts that voluntarily restrict land to agricultural and open space uses.

In return, Williamson Act parcels receive a lower property tax rate consistent with agricultural and open space use instead of their market rate value. The California Department of Conservation (CDOC) shows the project is not located on land under a Williamson Act contract (CDOC 2016a).

Farmland Mapping and Monitoring Program. The CDOC established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to assess the location, quantity, and quality of agricultural lands and conversion of these lands to other uses. Every even-numbered year, FMMP publishes a Farmland Conversion Report. FMMP data are used in elements of some county and city general plans, in regional studies on agricultural land conversion, and in environmental documents as a way of assessing project-specific impacts on farmland.

The FMMP identifies and maps agricultural lands as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

The FMMP shows land in the project area categorized as "Other Land" and "Urban and Built-Up Land". The "Other Land" categorization includes lands that are not farmland, grazing, urban, or water body. The "Urban and Built-Up Land" categorization is land "occupied by structures with a building of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel." There is no land in the project area designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland) (CDOC 2016b).

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

Menlo Park General Plan. The Menlo Park General Plan does not contain an agricultural or forestry element because there is no land designation as agricultural or forest within the city (City of Menlo Park 2016).

East Palo Alto General Plan. The East Palo Alto General Plan does not contain an agricultural or forestry element because there are no lands designated as agricultural or forest within the city. The city does allow some agricultural uses, such as nurseries and greenhouses, in the Weeks neighborhood located southwest of the project site (City of East Palo Alto 2017).

5.2.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for Agriculture and Forestry Resources as part of the project.

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?

Construction

NO IMPACT. The project site does not contain any mapped Farmland. The FMMP categorizes land in the project area as "Other Land" and "Urban and Built-Up Land." Construction of the project would

not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses and there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses, and there would be no impact.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. There are no existing agricultural uses on the project site/area. The project is not located on land zoned for agricultural use or located on land under a Williamson Act contract. Therefore, construction of the project would not conflict with existing zoning for agricultural use or with a Williamson Act contract, and there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project would not conflict with existing zoning for agricultural use or with a Williamson Act contract, and there would be no impact.

Required Mitigation Measures: None.

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))?

Construction

NO IMPACT. There is no land zoned for forestland or timberland in the project area. Therefore, construction of the project would not conflict with existing zoning or cause the rezoning of forestland or timberland and there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project would not conflict with existing zoning or cause the rezoning of forestland or timberland, and there would be no impact.

Required Mitigation Measures: None.

d. Would the project result in the loss of forestland or conversion of forestland to non-forest use?

Construction

NO IMPACT. There is no forestland in the project area. Therefore, construction of the project would not result in the loss or conversion of forestland to non-forest uses and there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. Therefore, the project would not result in the loss or conversion of forestland to non-forest uses, and there would be no impact.

Required Mitigation Measures: None.

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 non-agricultural use or conversion of forestland to non-forest use?

Construction

NO IMPACT. The project would replace the conductors on an approximately 1.6-mile power line within an existing utility corridor. Construction of the project would not result in the conversion of Farmland to non-agricultural uses or forestland to non-forest uses and there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project would not result in the conversion of Farmland to non-agricultural uses or forestland to non-forest uses, and there would be no impact.

Required Mitigation Measures: None.

5.2.3 References

CDOC 2016a – California Department of Conservation (CDOC). The California Land Conservation Act of 1965, 2016 Status Report, December 2016. http://www.conservation.ca.gov/dlrp/lca/stats_reports/Pages/Index.aspx

CDOC 2016b – California Department of Conservation (CDOC). Farmland Mapping and Monitoring Program, San Mateo County Important Farmland 2016. http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanMateo.aspx

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City of Menlo Park 2016 – City of East Palo Alto. Menlo Park General Plan, Adopted 2016. https://www.menlopark.org/146/General-Plan

PGE 2017a – Pacific Gas & Electric Company (PGE). Proponents Environmental Assessment. December 15, 2017.

http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/PDFs/Ravenswood_Cooley%20Landing_Final%20PEA.pdf

5.3 Air Quality

AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal 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?	☐	☐	☐	☒

Environmental checklist established CEQA Guidelines, Appendix G.

5.3.1 Setting

Environmental Setting

Air Basin

The project would be located within San Mateo County in the San Francisco Bay Area Air Basin (SFBAAB), under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB derives its name from the surrounding mountains that confine the movement of air and the pollutants it contains. This area includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, the western half of Solano, and the southern half of Sonoma counties.

Climate and Meteorology

The regional climate within the SFBAAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime on-shore breezes, and moderate humidity. In the immediate area, average summer temperatures peak in the high 70s F and drop to the low mid-50s F, while average winter temperatures peak in the high 50s F and drop to the upper 30s F. Approximately 80 percent of annual rainfall in the area occurs during the period of November through March.

The peninsula region extends from northwest of San Jose to the Golden Gate Bridge. The Santa Cruz Mountains run up the center of the peninsula, with elevations exceeding 2,000 feet at the southern end, decreasing to 500 feet in South San Francisco.

Annual average wind speeds range from 5 to 10 miles-per-hour (mph) throughout the peninsula, with higher wind speeds usually found along the coast. The prevailing winds along the peninsula's coast are from the west, although individual sites can show significant differences. On the east side of the mountains, winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features.

Ambient Air Quality

The US Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) have established ambient air quality standards for several pollutants based on their adverse health effects. The US EPA has set National Ambient Air Quality Standards (NAAQS) for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM10), fine particulate matter less than 2.5 microns (PM2.5), sulfur dioxide (SO_2), and lead (Pb). These pollutants are commonly referred to as "criteria pollutants." Primary standards were set to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops, vegetation, and buildings. In addition, ARB has established California Ambient Air Quality Standards (CAAQS) for these pollutants, as well as for sulfate (SO_4), visibility reducing particles, hydrogen sulfide (H_2S), and vinyl chloride. California standards are generally stricter than national standards. The standards currently in effect in California are shown in **Table 5.3-1**. The US EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. **Table 5.3-2** summarizes attainment status for the criteria pollutants in the BAAQMD with both the federal and state standards. The primary pollutants of concern in the SFBAAB include ozone, PM10, and PM2.5, because the air basin is designated as nonattainment for these pollutants by US EPA and/or ARB.

The air quality monitoring station nearest to the project area is the Redwood City station located at 897 Barron Avenue, which is approximately 4 miles west of the existing Ravenswood Substation. The next closest station that monitors for PM is the San Jose station located at 158 East Jackson Street, which is approximately 17 miles southeast of the existing Ravenswood Substation. **Table 5.3-3** presents the air quality monitoring data for ozone, PM10, and PM2.5 from the Redwood City and San Jose monitoring stations from 2014 to 2016, the most recent years for which data are available.

Toxic Air Contaminants

Toxic air contaminants (TACs), also referred to as hazardous air pollutants (HAPs) or air toxics, are different from criteria air pollutants such as ground-level ozone, particulate matter, CO, NO_2, SO_2 and Pb. Criteria air pollutants are regulated by national and state ambient air quality standards as noted above. However, there are no ambient standards for TACs and a health risk assessment (HRA) is conducted to evaluate whether risks of exposure to TACs create an adverse impact.

Health Effects of TACs

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs could cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches (BAAQMD 2017b). Numerous other health effects also have been linked to exposure to TACs, including heart disease, Sudden Infant Death Syndrome (SIDS), respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015).

The primary TAC of concern from construction activities is diesel particulate matter (DPM). Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the US EPA as hazardous air pollutants and by ARB as toxic air contaminants. DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious non-cancer effects and its status as a likely human carcinogen.

TABLE 5.3-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
			Primary	Secondary
O_3	1-hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
PM10	24-hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Mean	20 µg/m^3	—	
PM2.5	24-hour	—	35 µg/m^3	Same as Primary Standard
	Annual Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
CO	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
NO_2	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3) [c]	—
	Annual Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
SO_2 [d]	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	Annual Mean	—	0.030 ppm (for certain areas)	—
Pb	30-Day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/m^3 (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m^3	
Visibility Reducing Particulates	8-Hour	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.	No National Standards	
Sulfates	24-Hour	25 µg/m^3		
H_2S	1-Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride (chloroethene)	24-Hour	0.01 ppm (26 µg/m^3)		

Notes: ppm=parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; "—" = no standard

[a] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

[c] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

[d] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Source: ARB (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), dated 5/4/2016.

TABLE 5.3-2 ATTAINMENT STATUS FOR BAAQMD

Pollutant	Federal Designation	State Designation
O_3 (1-hour)	No Federal Standard	Nonattainment
O_3 (8-hour)	Nonattainment	Nonattainment
PM10	Unclassified	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment/Unclassifiable	Attainment

Sources: BAAQMD (http://www.baaqmd.gov/research-and-data/air-quality-standards-and attainment-status) and ARB (https://www.arb.ca.gov/desig/desig.htm). Accessed March 2018.

TABLE 5.3-3 AMBIENT AIR QUALITY MONITORING DATA

Pollutants	2014	2015	2016
O_3 (Redwood City – Barron Avenue)			
State maximum 1-hour concentration (ppm)	0.086	0.086	0.075
State maximum 8-hour concentration (ppm)	0.066	0.071	0.061
National maximum 8-hour concentration (ppm)	0.065	0.071	0.060
Number of Days Above the Standards			
CAAQS 1-hour (>0.09 ppm)	0	0	0
CAAQS 8-hour (>0.07 ppm)	0	1	0
NAAQS 8-hour (>0.07 ppm)	0	1	0
PM10 (San Jose – Jackson Street)			
National maximum 24-hour concentration (µg/m^3)	56.4	58.8	40.0
State maximum 24-hour concentration (µg/m^3)	54.7	58.0	41.0
State annual average concentration (µg/m^3)	20.0	21.9	18.3
Number of Days Above the Standards			
NAAQS 24-hour (>150 µg/m^3)	0	0	0
CAAQS 24-hour (>50 µg/m^3)	3.1	3	0
PM2.5 (Redwood City – Barron Avenue)			
National maximum 24-hour concentration (µg/m^3)	35.0	34.6	19.5
National annual average concentration (µg/m^3)	7.2	6.0	8.4
State annual average concentration (µg/m^3)	7.2	6.0	*
Number of Days Above the Standards			
NAAQS 24-hour (>35 µg/m^3)	0	0	0

Source: ARB (http://www.arb.ca.gov/adam/topfour/topfour1.php), Accessed March 2018

Notes: * = insufficient data available to determine the value. National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods. State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

Diesel exhaust is also characterized by ARB as "particulate matter from diesel-fueled engines." The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the EPA as "likely to be carcinogenic to humans" (US EPA 2003).

Helicopter fuel, including aviation turbine fuel or aviation gasoline, contains air toxics such as formaldehyde. Helicopter fuel has the potential to cause long-term health effects, including neurological damage. But the full extent of long-term health effects from helicopter fuel have not been fully studied (Agency for Toxic Substances and Disease Registry 2016). Helicopter landings would also generate dust (PGE 2017a).

Sensitive Receptors

Sensitive receptors, such as infants, the aged, and people with specific illnesses or diseases, are the subpopulations which are more sensitive to the effects of toxic substance exposure (ARB 2005). Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities. Residences could include houses, apartments, and senior living complexes. Medical facilities could include hospitals, convalescent homes, and health clinics. Playgrounds could be play areas associated with parks or community centers (BAAQMD 2017b). The potential sensitive receptor locations evaluated for the project include:

- Residential dwellings, including apartments, houses, condominiums;
- Schools, colleges, and universities;
- Daycares;
- Hospitals; and
- Senior-care facilities.

Sensitive Receptors Near Project

According to their 2017 CEQA Guidelines, BAAQMD recommends using 1,000 feet as the zone of influence for assessing community risks and hazards (BAAQMD 2017b). The nearest residential neighborhood is in northeastern East Palo Alto, located just beyond 500 feet (about 0.1 mile) from the project (PGE 2017a). The nearest residential area to a helicopter landing zone is approximately 900 feet from the landing zone in Staging Area 4 (PGE 2017a). These are the only sensitive receptors within 1,000 feet from the project. The nearest school to the project is the East Palo Alto Charter School, which is located approximately 0.3 miles (1,600 feet) south of Staging Area 4. The nearest hospital is the Menlo Park Veterans Administration Hospital, which is located 1.85 miles (9,770 feet) west of the Cooley Landing Substation (PGE 2017a). Please see **Figure 5.3-1** to see the map of sensitive receptors near the project.

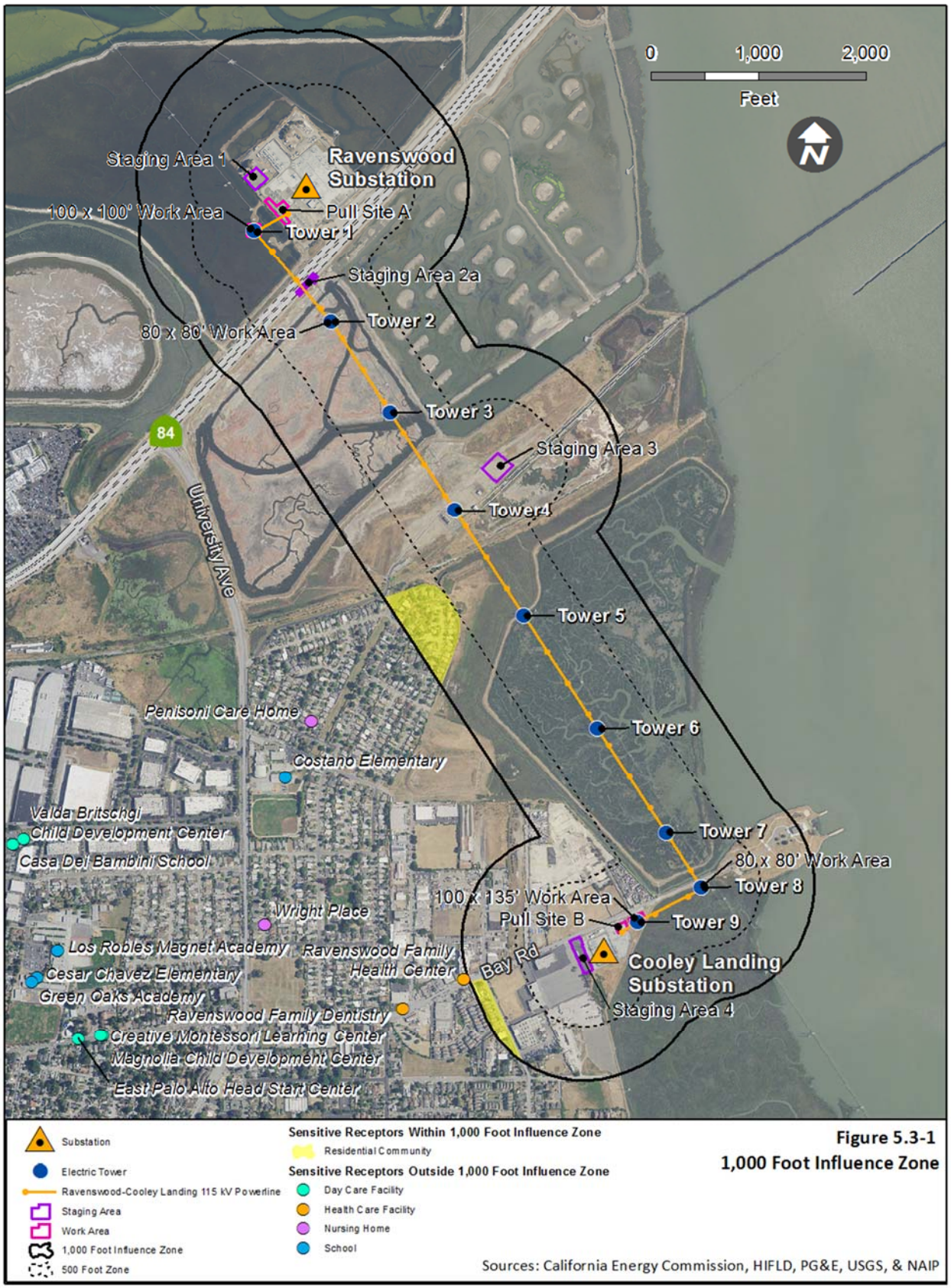

Figure 5.3-1
1,000 Foot Influence Zone

Regulatory Background

Federal

Clean Air Act. The federal Clean Air Act (CAA) establishes the statutory framework for regulation of air quality in the United States. Under the CAA, the US EPA oversees implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources.

Title I (Air Pollution Prevention and Control) of the CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a state implementation plan (SIP) to the U.S. EPA for areas in nonattainment with NAAQS. The SIP, which is reviewed and approved by the U.S. EPA, must demonstrate how state and local regulatory agencies will institute rules, regulations, and/or other programs to achieve attainment with NAAQS.

Title II (Emission Standards for Mobile Sources) of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks, standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.

National Emission Standard for Hazardous Air Pollutants. The CAA defines HAPs as a variety of substances that pose serious health risks. Direct exposure to HAPs has been shown to cause cancer, reproductive effects or birth defects, damage to brain and nervous system, and respiratory disorders. Categories of sources that cause HAP emissions are controlled through separate standards under CAA Section 112: National Emission Standards for Hazardous Air Pollutants (NESHAP). These standards are specifically designed to reduce the potency, persistence, or potential bioaccumulation of HAPs. Although asbestos is not expected to be present at the project site as discussed below, asbestos is addressed here for completeness. Asbestos is a HAP regulated under the US EPA NESHAP. The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. Air toxics regulations under the CAA specify work practices for asbestos to be followed during operations of demolitions and renovations.

The regulations require a thorough inspection of the area where the demolition or renovation operations will occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing, wetting, and sealing in leak-tight containers all asbestos-containing materials (ACM) and disposing of the waste as expediently as practicable.

State

California Clean Air Act. The California CAA outlines a statewide air pollution control program in California. ARB is the primary administrator of the California CAA, while local air quality districts administer air rules and regulations at the regional level. ARB is responsible for California air quality management, including establishment of CAAQS, mobile source emission standards, greenhouse gas (GHG) regulations, as well as oversight of regional air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution.

Air Toxic "Hot Spots" Information and Assessment Act. The Air Toxic "Hot Spots" Information and Assessment Act, also known as Assembly Bill (AB) 2588 identifies toxic air contaminant hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many toxic air contaminants are also classified as

hazardous air pollutants. AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about health risks posed by their emissions. Although DPM is considered a toxic air contaminant under AB 2588, this project is not subject to AB 2588 because the DPM-emitting sources would only be temporarily employed during construction. Operation of the project does not require the installation of new stationary sources of DPM or emissions of other toxic air contaminants. Therefore, the project is not considered a stationary source of toxic emissions.

Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that ARB achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The exhaust emissions standards for the off-road mobile sources and ongoing rulemaking jointly address emissions of nitrogen oxides (NOx) and toxic particulate matter from diesel combustion.

Regulation for In-Use Off-Road Diesel-Fueled Fleets. ARB has established the Regulation for In-Use Off-Road Diesel-Fueled Fleets to reduce NOx, DPM, and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles in Title 13, California Code of Regulations, section 2449. This regulation applies to all self-propelled off-road diesel vehicles rated 25 horsepower (hp) or greater, including vehicles that are rented or leased (rental or leased fleets), and requires restricted vehicle idling time, reporting of vehicle use and labeling, and compliance with fleet-average emission standards.

Airborne Toxic Control Measure for DPM from Portable Engines Rated at 50 Horsepower and Greater. In an effort to reduce DPM emissions throughout the state, ARB has established the Airborne Toxic Control Measure (ATCM) for DPM from Portable Engines Rated at 50 Horsepower and Greater (Cal. Code Regs., tit. 13, § 93116). This ATCM requires portable diesel-fueled engines having a maximum rating of 50 hp and greater to meet fleet-average DPM emissions standards.

Portable Equipment Registration Program. ARB has also established the Portable Equipment Registration Program to allow owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. ARB has established the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to DPM and other air contaminants by establishing idling restrictions, emission standards, and other requirements for heavy-duty diesel engines and alternative idle reduction technologies to limit the idling of diesel-fueled commercial motor vehicles (Cal. Code Regs., tit. 13, § 2485).

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. ARB has established the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities. The Asbestos ATCM applies to any project that will include sites to be disturbed in a geographic ultramafic rock unit area or an area where naturally occurring asbestos (NOA), serpentine, or ultramafic rocks are determined to be present. Both the applicant and the CPUC reviewed the U.S. Geological Survey map detailing natural occurrence of asbestos in California and determined that naturally occurring asbestos is not expected to be present at the project site.

Regional

The project is located within the jurisdiction of the BAAQMD. The BAAQMD is the regional agency charged with preparing, adopting, and implementing emission control measures and standards for stationary sources of air pollution pursuant to delegated state and federal authority. Under the California CAA, the BAAQMD is required to develop an air quality plan to achieve and/or maintain compliance with federal and state nonattainment criteria pollutants within the air district.

2001 Ozone Attainment Plan. BAAQMD prepared the 2001 Ozone Attainment Plan to reduce ozone-forming emissions in the SFBAAB by implementing emissions reductions measures for stationary, area, and mobile sources, such as reductions in off-gassing of architectural coatings and organic liquids, low emissions vehicles, expansion of express bus systems, and bicycle and pedestrian programs. The 2001 Ozone Attainment Plan was adopted on November 1, 2001 as a revision to the California State Implementation Plan. The 2001 Ozone Attainment Plan identified proposed control measures to improve air quality and re-attain the national 1-hour ozone standard in the SFBAAB.

Bay Area 2017 Clean Air Plan. BAAQMD adopted the Bay Area 2017 Clean Air Plan (CAP) on April 19, 2017 (BAAQMD 2017a). The 2017 Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the air district will continue its progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

BAAQMD California Environmental Quality Act Guidelines. BAAQMD publishes CEQA guidelines to assist lead agencies in evaluating a project's potential impacts on air quality. The most recent version of BAAQMD's CEQA Guidelines were published in May 2017 (BAAQMD 2017b), and are used in this analysis.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction of the project, the project is not subject to local (i.e., city and county) discretionary approval processes[1].

5.3.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APMs for air quality as part of the project to minimize emissions during construction:

APM AIR-1: Minimize Fugitive Dust During Construction. Consistent with Table 8-2 of the CEQA Air Quality Guidelines (Bay Area Air Quality Management District [BAAQMD] 2017c[2]), PG&E will minimize dust emissions during construction by implementing the following measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions; or apply non-toxic soil stabilizers such as soil binders, crushed rock or gravel.

[1] General Order No. 131-D. http://docs.cpuc.ca.gov/PUBLISHED/Graphics/589.PDF

[2] BAAQMD 2017c in **APM AIR-1** from the PEA referred to the BAAQMD 2017 CEQA Air Quality Guidelines, which is referred to as BAAQMD 2017b elsewhere in this analysis.

- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour.
- Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

APM AIR-2: Exhaust Emissions. Per BAAQMD CEQA guidelines, PG&E will implement the following exhaust emissions control measures:

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions.
- All construction equipment will be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.

Methodology

The applicant used the California Emissions Estimator Model (CalEEMod version 2016.3.1) to estimate the construction emissions for the project. Helicopter exhaust emissions were manually calculated using the emission factors obtained from the 2011 Gulfwide Emission Inventory Study prepared for the U.S. Department of the Interior. The emissions estimates are based on information that the applicant provided regarding the duration and frequency of equipment use, area of ground-disturbing activities, and the proposed construction schedule. On May 11, 2018, PG&E increased the construction intensity of a few project elements, specifically foundation work and conductor installation (PGE 2018e). The original CalEEMod files were modified to update the construction emissions estimates.

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

The applicable air quality plan is the Bay Area 2017 CAP. The primary goals of this plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. BAAQMD considers a project consistent with air quality plan (AQP) if (1) the project supports the primary goals of the AQP, (2) the project include applicable control measures from the AQP, and (3) the project does not disrupt or hinder implementation of any AQP control measures (BAAQMD 2017b).

The BAAQMD recommended measure for determining project support of the goals of the AQP is consistency with BAAQMD-approved CEQA thresholds of significance. Therefore, if approval of a project would not result in significant and unavoidable air quality impacts, after application of all feasible mitigation, the project would be considered consistent with the CAP (BAAQMD 2017b).

This analysis used the thresholds and methodologies in the BAAQMD CEQA Guidelines dated May 2017 (BAAQMD 2017b) to determine the significance of project impacts on air quality. BAAQMD thresholds of significance are shown in **Table 5.3-4**. The BAAQMD CEQA Guidelines considers construction exhaust emissions controlled by the overall air quality plan; however, the implementation of new and more stringent state and federal standards over the past ten years now warrants additional control of this source of emissions. The average daily criteria air pollutant and precursor emission levels shown in the BAAQMD CEQA Guidelines are recommended as the thresholds of significance for construction activity for exhaust emissions. These thresholds represent the levels above which a project's individual emissions would result in a considerable contribution (i.e., significant) to the SFBAAB's existing non-attainment air quality conditions and thus establish a nexus to regional air quality impacts that satisfies CEQA requirements for evidence-based determinations of significant impacts. For construction period fugitive dust emissions, BAAQMD CEQA Guidelines recommend following the current BMPs approach, which has been a pragmatic and effective approach to the control of fugitive dust emissions.

TABLE 5.3-4 UNMITIGATED CONSTRUCTION EMISSIONS (LBS/DAY) [a]

BAAQMD Significance Thresholds for Construction-related Average Daily Emissions		Average Daily Construction Emission Estimates [b]	Maximum Daily Construction Emission Estimates [c]	Threshold Exceeded?
ROG	54	5.6	21.6	No
NOx	54	7.7	50.8	No
PM10 exhaust	82	0.2	1.9	No
PM2.5 exhaust	54	0.2	1.8	No
CO	None	11.9	57.5	No
PM10 fugitive dust	Best Management Practices	0.3	0.3	No
PM2.5 fugitive dust	Best Management Practices	0.1	0.1	No
SOx	None	0.4	1.3	No

Source: PGE 2018b, BAAQMD 2017b, PGE 2018e, and the CPUC analysis

Notes: [a] Construction emissions estimates are based on preliminary equipment lists. Other equipment may be identified when project design is finalized or during construction if unexpected conditions require additional equipment.

[b] Average daily construction emissions are based on estimated annual emissions divided by the total number of construction days.

[c] Maximum daily emissions were estimated based on the maximum sum of the emissions per phase expected to occur within a given day. The CPUC included the maximum daily emissions from the helicopters in the total maximum daily emissions shown in the table.

Construction

LESS THAN SIGNIFICANT IMPACT. PG&E anticipates that construction of the project would take approximately four months to complete. Site development and preparation for construction is scheduled to begin in September 2020. The project is currently scheduled to be completed in late December 2020 and the line reenergized in January 2021.

Construction equipment, vehicles, and helicopters would generate criteria air pollutant emissions during proposed construction activities. Fugitive dust emissions (PM10 and PM2.5) would result from ground-disturbing activities and from the operation of vehicles and equipment on unpaved surfaces. Since the project would not involve extensive ground disturbance, the fugitive dust emissions associated with reconductoring, tower modifications, and travel along access roads would be minimal. Helicopter landings would also generate dust. However, landings would be brief and located within staging areas. Therefore, dust effects would be localized and minimal. Particulate matter (PM10 and PM2.5 from diesel exhaust), Reactive Organic Gases (ROGs), and NOX pollutant emissions would result from vehicle and truck trips, and the use of heavy machinery and helicopters.

The unmitigated average and maximum worst-case daily emission rates estimated during construction are presented in **Table 5.3-4**. The average daily construction emissions are based on estimated annual emissions divided by the total number of construction days. Maximum worst-case daily emissions are estimated assuming a worst-case scenario where all on-road equipment and helicopter use would coincide with the peak off-road construction equipment use within a given day. The average daily emissions would be lower than the maximum worst-case daily emissions. Both the average and maximum worst-case daily unmitigated construction emissions would be lower than the thresholds of significance published in the BAAQMD May 2017 CEQA Guidelines.

Table 5.3-4 shows that the unmitigated worst-case daily PM10 emissions would be 1.9 pounds per day (lbs/day) from exhaust and 0.3 lbs/day from fugitive dust. The worst-case daily PM2.5 emissions would be 1.8 lbs/day from exhaust and 0.1 lbs/day from fugitive dust. The worst-case PM exhaust emission rates would be well below the significance threshold of 82 lbs/day for PM10 and 54 lbs/day for PM2.5 in the BAAQMD May 2017 CEQA Guidelines. There is no numerical threshold for fugitive dust generated during construction in BAAQMD. The BAAQMD May 2017 CEQA Guidelines require control of fugitive dust through BMPs in order to conclude that impacts from fugitive dust emissions are less than significant.

The maximum worst-case daily emissions of NOx and ROG are estimated to be 50.8 lbs/day and 21.6 lbs/day, respectively. It should be noted that the CPUC conservatively included the maximum daily emissions from the helicopters in the total maximum worst-case daily emissions shown in **Table 5.3-4**. The maximum worst-case daily emissions of NOx and ROG would be below the BAAQMD May 2017 thresholds of significance (54 lbs/day). More detailed emissions calculations can be found in **Appendix B**.

During construction, PG&E would implement **APM AIR-1** to reduce fugitive dust emissions and **APM AIR-2** to minimize exhaust emissions, which are consistent with the BAAQMD recommended BMPs. **APM AIR-1** requires implementation of procedures to reduce fugitive dust emissions by use of soil stabilizers or watering soil during dry conditions, covering haul trucks, and managing soil track-out onto public roadways. **APM AIR-2** requires implementation of generalized procedures for operating and maintaining equipment and limiting idling periods to the minimum necessary; these meet state and federal requirements.

As discussed in the Regulatory Background section above, various regulations that limit emissions of air pollutants apply to the off-road and on-road construction equipment that would be used during construction of the project. Several transportation control measures from the Bay Area 2017 CAP apply to the project including incentives to promote ridesharing (TR8), incentives to purchase new trucks that exceed NOx emission standards, hybrid trucks, or zero-emission trucks (TR19), and

incentives to deploy construction and farm equipment with Tier III or IV off-road engines (TR22). The applicable transportation control measures are incentive measures and do not require vehicle upgrades or retrofits. The project would not conflict with implementation of incentives to upgrade vehicles. Two applicable stationary source control measures pertain to reducing ROG emissions from coatings, solvents, lubricants and adhesives (SS25), and particulate matter from soil trackout (SS36). BAAQMD has been developing a new rule (Regulation 6 Rule 6), which includes provisions for trackout (SS36). This new rule is proposed for adoption at a public hearing of the BAAQMD Board on August 1, 2018. The 2017 CAP shows that the 2019 regulatory schedule would include rule development for control measure SS25. PG&E would implement applicable control measures, including the incentives, from the 2017 CAP. The project would not conflict with or obstruct implementation of the control measures defined in the 2017 CAP.

Impacts from construction of the project would not conflict with or obstruct implementation of the applicable air quality plan and impacts would be less than significant with APMs.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. The SFBAAB is designated as a nonattainment area for ozone and PM2.5 under both NAAQS and CAAQS. The SFBAAB is designated as nonattainment for PM10 under CAAQS. However, as shown in **Table 5.3-4**, the project would comply with the thresholds of significance for construction activities established in the BAAQMD May 2017 CEQA Guidelines. BAAQMD CEQA Guidelines require implementation of fugitive dust control BMPs to consider impacts from fugitive dust emissions less than significant. Without these BMPs, the impact from fugitive dust emissions would be considered significant. The applicant would implement **APM AIR-1** and **APM AIR-2**, which are consistent with the BAAQMD recommended BMPs, to reduce fugitive dust emissions. Due to the short-term nature of the construction emissions and their compliance with available BAAQMD significance thresholds for exhaust emissions, construction of the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Therefore, impacts from construction of the project would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur as a result of the project.

Required Mitigation Measures: None.

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

The SFBAAB is designated as a nonattainment area for ozone and PM2.5 under both NAAQS and CAAQS. The SFBAAB is designated as nonattainment for PM10 under CAAQS, but not NAAQS, and has attained both state and federal ambient air quality standards for CO, NO_2, and SO_2. The project could have a cumulatively considerable impact on air quality if either (1) it resulted in emissions above the significance thresholds or (2) the project would violate any action in an attainment plan.

BAAQMD prepared the 2001 Ozone Attainment Plan to reduce ozone-forming emissions in SFBAAB to achieve attainment of NAAQS and CAAQS ozone standards. BAAQMD has established thresholds of significance for ozone precursor pollutants (ROGs and NOx) and particulate matter (PM10 and PM2.5). The thresholds for air pollutants and their precursors to attain and maintain ambient air quality standards are also the thresholds at which a project would be considered to have a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment.

Construction

LESS THAN SIGNIFICANT IMPACT. As analyzed above, the exhaust emissions during construction of the project would not exceed significance thresholds for construction activities established in the BAAQMD CEQA Guidelines. There is no numerical threshold for fugitive dust generated during construction in the BAAQMD Guidelines. Instead, the guidance calls for use of BMPs to reduce fugitive dust emissions to consider impacts from fugitive dust emissions less than significant. Without these BMPs, the impact from fugitive dust emissions would be considered significant. PG&E would implement **APM AIR-1**, which includes applying water to exposed areas and reducing vehicle speeds on unpaved areas. To reduce emissions from vehicle and construction equipment exhaust, PG&E would implement **APM AIR-2**, which includes limiting idling time from large diesel-fueled vehicles and properly maintaining all construction equipment. With implementation of these APMs, all criteria pollutant emissions during construction of the project would be below the applicable BAAQMD thresholds and impacts would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur as a result of the project.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Construction of the project would involve the use of diesel-fueled vehicles and equipment and would result in the generation of toxic air contaminants, specifically DPM. The health impacts due to DPM emission include acute health risks, cancer and non-cancer chronic risks, which are long-term. However, the emissions estimate indicates that emissions of exhaust in the form of PM10 and PM2.5 (of which diesel-particulate matter would be a fraction) are below the

BAAQMD May 2017 thresholds of significance. Also, construction activities would be temporary, lasting only four months, and would not result in long-term emissions of DPM. Due to the linear nature of the project, construction activities would be spread across the approximately 1.6-mile-long alignment, lasting only a few days at each tower. Furthermore, construction equipment fleet operators are subject to ARB's In Use Off Road Equipment Fleet Regulation, which requires the use of increasing amounts of lower-emitting equipment that would help to ensure that risks are minimized.

The health effects associated with TACs are generally assessed locally, within 1,000 feet, rather than regionally (BAAQMD 2017b). OEHHA recommends assessing cancer risk for projects where the maximally-exposed individual resident or sensitive receptor is exposed for two months or longer (OEHHA, 2015). A residential neighborhood in northeastern East Palo Alto is about 0.1 mile from the project (PGE 2017a). The nearest school to the project is the East Palo Alto Charter School, which is located approximately 0.3 mile (1,600 feet) south of Staging Area 4. The nearest hospital is the Menlo Park Veterans Administration Hospital, which is located 1.85 miles (9,770 feet) west of the Cooley Landing Substation (PGE 2017a). As described in **Section 4, Project Description**, because construction would progress quickly, construction activities are not expected to take place near any one structure location for more than a few days. Therefore, sensitive receptors in the residential neighborhood in northeastern East Palo Alto would be exposed to TAC emissions for up to a few days during construction. Sensitive receptors at any one location would not be exposed to TAC emissions from construction activities for greater than 2 continuous months, falling outside the time period for which OEHHA recommends a health risk assessment. Furthermore, the receptors are located more than 500 feet away from project construction. Implementation of **APM AIR-1** and **APM AIR-2** require use of BMPs, which include controlling fugitive dust and reducing idling time. These would further reduce exposure to sensitive receptors (PGE 2017a). Therefore, the health impacts to sensitive receptors due to fugitive dust and DPM during construction would be less than significant.

Helicopter Operations

LESS THAN SIGNIFICANT IMPACT. Helicopter landings would generate dust. However, landings would be brief and dust effects would be localized. In addition, the landing zone of Staging Area 4 is paved, and the implementation of **APM AIR-1** controls fugitive dust in the area through watering or use of soil stabilizers. Therefore, dust generation would be minimal. **APM AIR-2** requires implementation of generalized procedures for operating and maintaining equipment and limiting idling periods to the minimum necessary.

Helicopter activities would be infrequent and would only occur for a period of approximately 36 days during the four months of construction. Therefore, the health effects from helicopter fuel would also be minimal.

The nearest residence to a landing zone is approximately 900 feet (Staging Area 4 [PGE 2017a]) and that landing zone is paved. Due to their distance from the helicopter landing zones, sensitive receptors in the vicinity would not be exposed to the fugitive dust from helicopter landing and helicopter fuel during construction. Implementation of **APM AIR-1** and **APM AIR-2** require use of BMPs, which include controlling fugitive dust and reducing idling time. These would further reduce exposure to sensitive receptors. Therefore, the health impacts to sensitive receptors due to helicopter use during construction would be less than significant.

Operation and Maintenance

NO IMPACT. Operation of the project does not require the installation of new stationary sources of DPM or emissions of other toxic air contaminants. Therefore, the project is not considered a stationary source of toxic emissions (PGE 2017a).

The operation and maintenance activities required for the reconductored power line would not change from those currently required for the existing line; thus, no operation-related impacts would occur and no APM are necessary (PGE 2017a).

Required Mitigation Measures: None.

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

BAAQMD does not have a significance threshold for odors created from construction activities. The significance criterion for operation of source types (i.e., landfills, wastewater treatment plants) known to emit odors is if the odor source has five or more confirmed odor complaints per year averaged over 3 years (BAAQMD 2017b).

Construction

NO IMPACT. Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. No significant sources of these pollutants would exist during construction. An additional potential source of project-related temporary odor would be diesel engine emissions. However, as previously described, a residential neighborhood in northeastern East Palo Alto is located just beyond 500 feet (about 0.1 mile) from the project (PGE 2017a). The nearest residential area to a helicopter landing zone is approximately 900 feet from the landing zone in Staging Area 4 (PGE 2017a). Due to the short-term nature of the construction emissions and the distance between the project and the residential areas, the project would not create objectionable odors affecting a substantial number of people. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. Diesel emissions and the associated odor during operation and maintenance would not be greater than existing conditions. No impact would occur.

Required Mitigation Measures: None.

5.3.3 References

Agency for Toxic Substances and Disease Registry 2016 – Agency for Toxic Substances and Disease Registry. Toxicological Profile Information JP-5, JP-8. and Jet A Fuels. February. Accessed September 9, 2016. http://www.atsdr.cdc.gov/toxprofiles/tp121.pdf

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5.4 Biological Resources

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

Environmental checklist established by CEQA Guidelines, Appendix G.

5.4.1 Setting

This section describes the existing biological resources that occur in the project area. It includes a description of the existing biotic environment, including common plants and wildlife, plant communities including sensitive habitats, special-status species and their locations in relation to the project. The following section (5.4.2) presents an analysis of impacts to biological resources and, where necessary, specifies mitigation measures to reduce impacts to less-than-significant levels. **Figure 5.4-1** presents the vegetation communities in the project area.

Regional

The project area is bounded by the Don Edwards NWR to the north, Ravenswood OSP and residential communities of East Palo Alto to the west, by the San Francisco Bay to the east, and by the Baylands Nature Preserve to the south. The Don Edwards NWR, managed by the USFWS, is a 30,000-acre preserve that spans the southern portion of the San Francisco Bay including tidal and diked marshlands in San Mateo, Santa Clara, and Alameda counties. The Ravenswood OSP, managed by MROSD, is a 376-acre preserve comprising two non-contiguous marshland areas, located south of the Dumbarton Bridge and adjacent to San Francisco Bay. The larger MROSD area, about 270 acres, is located near Cooley Landing in East Palo Alto and is accessible from Bay Road (via US 101 and University Avenue) (EDAW et. al. 2005). The other MROSD area consists of 100 acres of wetlands and levee and is adjacent to the Dumbarton Bridge. The Baylands Nature Preserve is a large tract of undisturbed marshland consisting of approximately 1,940 acres in both Palo Alto and East Palo Alto, managed by the city of Palo Alto. Refer to **Figure 4-1** in **Section 4, Project Description** for the location of these protected areas.

Information used to define the baseline biological resources setting was derived from:

- PG&E's PEA (PGE2017a);
- PG&E's Responses to Deficiency letter, dated 1/5/18 (PGE2018a);
- PG&E's Responses to Data Requests, Set No. 1, dated 2/14/2018 (PGE2018b);
- PG&E's Responses to Data Requests, Set No. 2, dated 3/9/2018 (PGE2018c);
- Preliminary Identification of Section 404 Waters of the U.S. (H.T. Harvey & Associates 2017a);
- Biological Resources Technical Report (H.T. Harvey & Associates 2017b);
- PG&E's Bay Area Operations & Maintenance Habitat Conservation Plan (Bay Area HCP) (ICF 2017);
- Energy Commission biological resources staff site visits on February 6 and 16 and May 8,2018;
- California Natural Diversity Database (CNDDB) records search of 12 USGS 7.5-minute quadrangles that includes the two quadrangles that the project area spans (Palo Alto, Mountain View) (CDFW 2018), as well as the 10 surrounding quadrangles that include the following: San Mateo, Redwood Point, Newark, Niles, Milpitas, San Jose West, Cupertino, Mindego Hill, La Honda, and Woodside;
- California Native Plant Society's (CNPS) 2018 online Inventory of Rare and Endangered Plants of California for San Mateo County (CNPS 2018);
- USFWS list of endangered, threatened, or proposed species for San Mateo County (USFWS 2018);
- USFWS Information for Planning and Conservation (IPaC) Resource Report for 10 square miles around the project site (USFWS 2018);
- *A Manual of California Vegetation*, 2nd Edition (Sawyer et al. 2009);
- eBird, online database of bird distribution and abundance (Cornell Lab of Ornithology 2018);
- *Jepson Manual*, 2nd Edition: Vascular Plants of California (Baldwin et al. 2012);
- Aerial photographs.

Biological Surveys

Both the Biological Resources Technical Report and Preliminary Identification of Section 404 Waters of the U.S. Report, prepared by PG&E's consultant H.T. Harvey & Associates, define a 94.64 acre project "Study Area" or "Survey Area" comprising the 1.6 mile transmission line segment that would be reconductored, the Cooley Landing and Ravenswood substations, the centerline of the San Francisco Public Utilities Commission (SFPUC) lands access road, and Helicopter Landing Zones (laydown areas) 2 and 3, along with a 150-foot buffer around all of these features (H.T. Harvey & Associates 2017a, b). Biologists from H.T. Harvey & Associates conducted field reconnaissance surveys on May 11 and 18, 2017 and September 26, 2017. Focused surveys were conducted for special-status species and/or their habitats in May 2017 and rare plant surveys were conducted on July 26, 2017. The "Survey Area" for field surveys included walking the project work areas, access points, staging areas, and the Tower 1 through 9 alignments, as well as the 150-foot buffer around these features, as allowed by access.

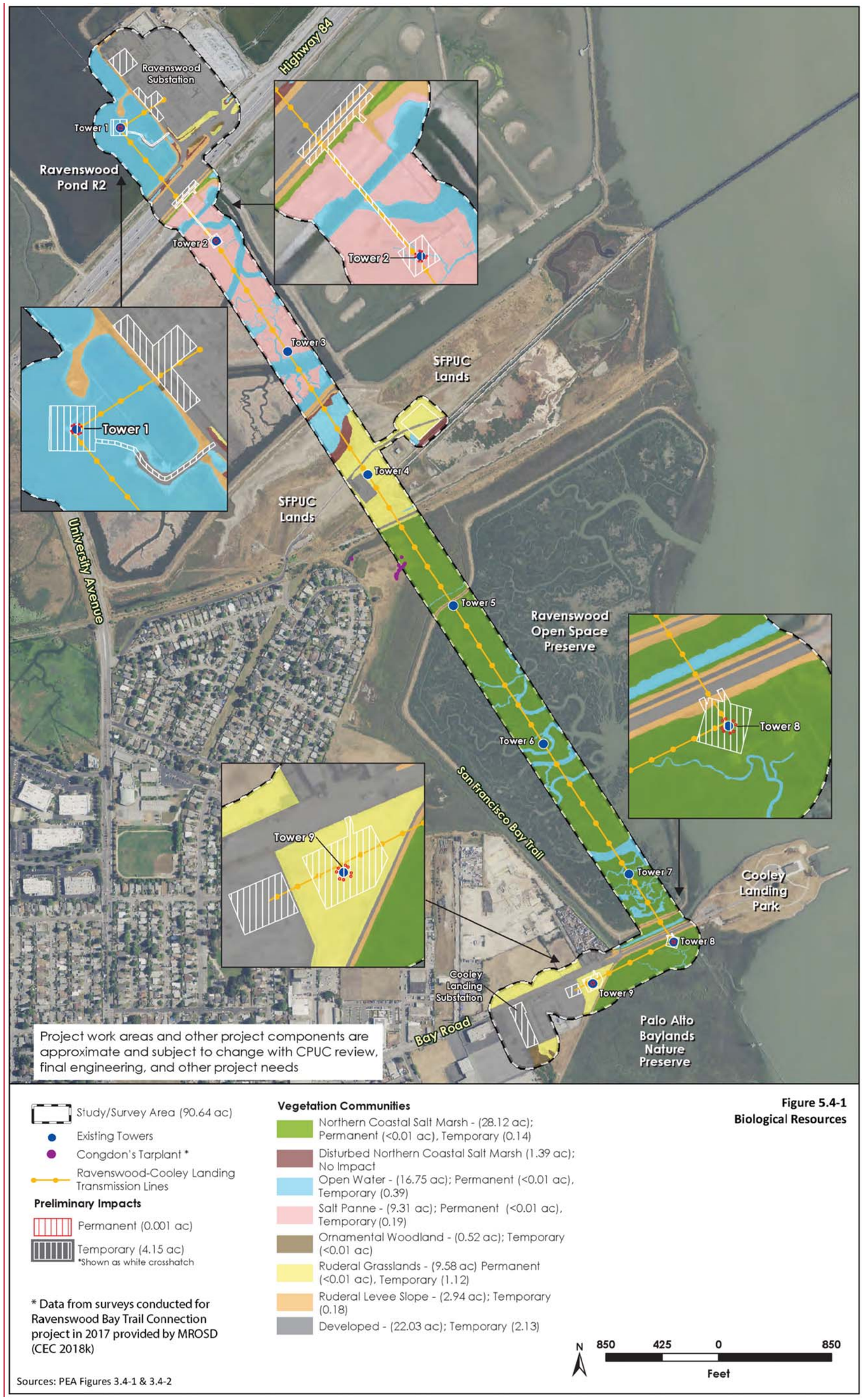

Figure 5.4-1
Biological Resources

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Agency Consultation

The CPUC consulted and coordinated with the following agencies in conducting the research and analysis for this section:

- National Oceanic and Atmospheric Administration (NOAA): phone conversation on February 2, 2018 with Gary Stern, San Francisco Bay Branch Supervisor, NOAA Fisheries West Coast Region to familiarize contact with the project and solicit initial comments, particularly with any fisheries issues that NOAA and/ or National Marine Fisheries Service (NMFS) may have. After inquiring if there is a channel in the Study Area that connects to the San Francisco Bay or if tidal exchange occurs in the area around Tower 1, the only project work area in open water, Mr. Stern confirmed that if there is no direct connection to the Bay their office would have no concerns regarding the project activities (CEC2018a).
- California Department of Fish and Wildlife (CDFW): phone conversation on February 12, 2018 with Serge Glushkoff, Bay Delta Region Office to initiate discussion and initial comments on the project. Mr. Glushkoff confirmed he was the current contact for now and would review the project information (CEC2018b).
- USFWS: phone conversation on March 9, 2018 with Lindsey Troutman, Sacramento USFWS Office to establish contact and solicit any initial comments or questions on the project. Ms. Troutman provided initial comments and questions (CEC2018d).
- MROSD: email conversation with Julie Anderson, Resource Management Specialist III with the MROSD, on May 11, 2018 and May 18, 2018 to address existing information regarding biological resource issues in the vicinity of the Ravenswood OSP and respond to questions from Ms. Anderson regarding the project (CEC 2018k). The MROSD oversees the Ravenswood OSP and expressed concerns regarding the spread of invasive plants that are known to occur within the vicinity of Ravenswood OSP as well as other concerns about biological resources in the project vicinity and questions regarding the project description.

Vegetation and Wildlife Habitats

Vegetation and wildlife habitat nomenclature follows CDFW's List of California Terrestrial Natural Communities. Reconnaissance surveys identified eight habitat types/land uses in the Study Area which include the following: ruderal levee slope, ruderal grasslands, ornamental woodland, developed, open water, salt panne, northern coastal salt marsh, and disturbed northern coastal salt marsh. **Table 5.4-1** provides the approximate acreage of each habitat type within the project Study Area.

TABLE 5.4-1 VEGETATION AND WILDLIFE HABITAT AND ACRES

Habitats	Acres
Ruderal Levee Slope	2.94
Ruderal Grasslands	9.58
Ornamental Woodland	0.52
Developed	22.03
Open Water	16.75
Salt Panne	9.31
Northern Coastal Salt Marsh	28.12
Disturbed Northern Coastal Salt Marsh	1.39

Ruderal Levee Slope

Ruderal levee slopes occur along the levee of Ravenswood Pond R2, Ravenswood Pond SF2, SFPUC lands, the Ravenswood OSP, Baylands Nature Preserve, and along drainages adjacent to the Ravenswood Substation, and totals approximately 2.94 acres. Refer to **Figures 4-4a and 4-4b** in **Project Description** for the location of these areas. These areas are dominated by a dense growth of weedy forbs and grasses. The ruderal levee slopes are dominated by non-native, moderately invasive grasses including ripgut brome (*Bromus diandrus*), seaside barley (*Hordeum marinum*), Italian ryegrass (*Festuca perennis*), and wild oats (*Avena* sp.). Non-native forbs, such as Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), iceplant (*Carpobrotus edulis*), and spiny sowthistle (*Sonchus asper*) grow in intermittent, small patches.

Ruderal Grassland

Ruderal grassland occurs on SFPUC lands northwest of the railroad tracks and in remnant fields adjacent to the Cooley Landing Substation totaling 9.58 acres. Vegetation in ruderal grassland consists of densely-growing weedy forbs and grasses such as wild oats, Italian thistle, black mustard, fennel (*Foeniculum vulgare*), wild radish (*Raphanus raphanistrum*), iceplant, and a variety of brome grasses. Ruderal grassland is restricted to compacted fill soils that have been previously disturbed, are low in nutrients, and with little topographic relief.

Ornamental Woodland

Ornamental woodland is present adjacent to the Ravenswood and Cooley Landing Substations and totals approximately 0.52 acre. Ornamental woodland is composed of a variety of eucalyptus trees which are mostly blue gum (*Eucalptus globulus*) along with weedy grasses and forbs similar to species found in ruderal grassland habitat.

Developed

Developed areas include the Ravenswood Substation, SR 84, the footings from Towers 1 through 9, the Bay Trail, existing access roads, Bay Road, and the Cooley Landing Substation totaling approximately 22.03 acres. These areas are devoid of vegetation and are generally flat and contain both paved and gravel portions.

Waters and Wetlands

Open Water

Open water within the Study Area is located in Ravenswood Pond R2, Ravenswood Pond SF2, SFPUC lands, the Ravenswood OSP, and the Baylands Nature Preserve totaling approximately 16.75 acres. This habitat is devoid of vegetation and contains water, viscous mud, and algal growth. Ravenswood Ponds R2 and SF2 water levels are managed through weirs connecting these ponds to adjacent ponds. The SFPUC lands are diked and non-tidal. Ravenswood OSP and Baylands Nature Preserve are fully tidal with marsh channels connecting to San Francisco Bay.

Salt Panne

Salt Panne habitat is located in the southwest part of Ravenswood Pond SF2 totaling approximately 9.31 acres. Salt panne consists of the seasonally dry, flat, unvegetated land of Ravenswood Pond SF2. This area is bisected by several perennial open water channels. This shallow, artificial, seasonal pond is designed to

extract salts from bay waters through natural evaporation and is now managed as part of the South Bay Salt Pond Restoration Project.

Northern Coastal Salt Marsh

Northern coastal salt marsh occurs on the periphery of Ravenswood Pond SF2, SFPUC lands southeast of the railroad tracks, throughout the Ravenswood OSP, and throughout the Baylands Nature Preserve totaling approximately 28.12 acres. This habitat is periodically inundated with water, is subject to tidal ebb and flow, and is heavily dominated by pickleweed (*Salicornia pacifica*) which grows in dense mats. Cordgrass (*Spartina* sp.) and alkali heath (*Frankenia salina*) grow in patches along the southern portion of the Study Area. Northern coastal salt marsh occurring along the toe of the northern levee bank of Ravenswood Pond SF2 is characterized by pickleweed, coast plantain (*Plantago elongata*), and toad rush (*Juncus bufonius*).

Disturbed Northern Coastal Salt Marsh

Disturbed northern coastal salt marsh occurs in drainage channels adjacent to the Ravenswood Substation, adjacent to the southern periphery of Ravenswood Pond R2, and within the diked portions of SFPUC lands totaling approximately 1.39 acres. This habitat is defined by isolated, monotypic stands of pickleweed.

The disturbed northern coastal salt marsh has been either cut off or restricted from tidal influence by levees. This habitat is also of low quality compared to northern coastal salt marsh habitats elsewhere in the region due to its patchy distribution and high levels of human disturbance in adjacent uplands.

Noxious Weeds and Invasive Plants

A noxious weed is any plant designated by federal, state, or local government officials as injurious to public health, agriculture, recreation, wildlife, or property. Invasive plants are non-native plants that establish, persist and spread widely in natural ecosystems outside the plant's native range and are often also classified as noxious weeds by government agencies. In California, the two lists that identify invasive plants are the California Invasive Plant Council (Cal-IPC) Inventory and the California Department of Food and Agriculture (CDFA) Noxious Weed List. The Cal-IPC Inventory includes species that cause ecological harm in the state's wildlands (Cal-IPC 2013) while the CDFA Noxious Weed List primarily lists plants that cause, or have the potential to cause, economic damage to the state's agricultural industry. CDFA has legal authority to regulate plants on this list through Section 4500 of the California Code of Regulations (Cal. Code Regs., tit. 3, § 4500) (CDFA 2013).

Noxious weeds and invasive plants are fast growing with high seed production and rapid maturation that, combined with a lack of natural predators and diseases, rapidly overwhelm and displace native vegetation. Noxious weeds and invasive plants threaten native habitats by altering ecosystem processes and deteriorating habitats for many native plants and animals, including rare, threatened, and endangered species. Construction equipment, fill, aeolian processes and use of purchased mulch can act as vectors introducing noxious weeds and invasive plants into an area.

Invasive species that the MROSD are generally most concerned about are species with High ranking in the Cal-IPC Inventory, species with an alert, species that may cause an ecological successional change (i.e. scrubs encroaching on grasslands), or increase fire issues (CEC 2018k). Invasive plants known to occur within the vicinity of Ravenswood OSP, and are of concern to the MROSD, include stinkwort (*Dittrichia graveolens*), non-native spartina (*Spartina* spp.), and Algerian sealavender (*Limonium ramosissimum*).

Stinkwort was found to occur in multiple locations in the project area as part of the Weed Survey of USFWS Don Edwards (NWR) in 2010 and Algerian sealavender is also known to occur in the USFWS Don Edwards (NWR) (Calflora 2018). In addition, surveys conducted as part of the Invasive Spartina project detected *S. alterniflora* and hybrids in proximity to Ravenswood OSP.

Special-Status Plants and Animals

Special-status species include plants and animals that are listed under federal or state endangered species acts, or meet the definitions of "Endangered" or "Rare" under California Environmental Quality Act Guidelines Section 15380, such as species considered to be rare by resource agencies, professional organizations (e.g. CNPS), local ordinances, and the scientific community. Special-status species in this document include species listed as Endangered, Threatened, Candidate, or Proposed under the federal Endangered Species Act (ESA); listed as Endangered, Threatened, Candidate, or Rare under the California ESA; designated as Watch List, Fully Protected, or Species of Special Concern or listed under the California Native Plant Protection Act by CDFW; USFWS Birds of Conservation Concern; or CNPS Rare Plant Ranks (RPR) 1A, 1B, 2A, 2B, 3, or 4.

Table 5.4-2 identifies occurrences of special-status species assessed using the data sources and survey results described in Section 5.4.1 above. Species that are present and are possible or likely to occur are discussed further.

TABLE 5.4-2 SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

Species	Status	Habitat	Occurrence in Project Vicinity
PLANTS			
California seablite (*Sueda californica*)	FE/ RPR 1B.1	Coastal salt marshes from sea level to 49 feet above mean sea level (MSL). Blooms July to October.	Possible. None observed during surveys during the blooming period for the species.
Point Reyes bird's beak (*Chlorpyron maritimum* ssp. *palustre*)	RPR 1B.2	Coastal salt marshes and swamps at elevations from sea level to 34 feet above MSL. Blooms June to October.	Possible. None observed during surveys during the blooming period for the species.
Saline clover (*Trifolium hydrophilum*)	RPR 1B.2	Mesic, alkaline, or saline sites in valley and foothill grassland habitat, in vernal pool habitat, or in marshes and swamps at elevations from sea level to 984 feet above MSL. Blooms April to June.	Possible. None observed during surveys during the blooming period for the species.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	RPR 1B.1	Alkaline sites of valley and foothill grasslands at elevations from sea level to 750 feet above MSL. Blooms June to October.	Possible. None observed during surveys during the blooming period for the species. Known to occur in vicinity of Ravenswood OSP from surveys conducted in 2017 (CEC2018k).
Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*)	RPR 1B.2	Mesic sites in coastal dune and coastal scrub habitat, or in marshes and swamps at elevations from sea level to 100 feet above MSL. Blooms June to October.	Possible. None observed during surveys during the blooming period for the species.

TABLE 5.4-2 SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

Species	Status	Habitat	Occurrence in Project Vicinity
FISH			
Longfin smelt (*Spirinchus thaleichthys*)	FC, ST	Bay, estuary, and nearshore coastal environments.	Unlikely. This species will spawn in the middle Delta in winter and disperse throughout the San Francisco Bay estuary as they mature. Ravenswood Pond R2 is very saline, non-tidal, and fed by Pond R1 through a weir.
BIRDS*			
Bald eagle (*Haliaeetus leucocephalus*)	BGEPA, SE, FP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or on cliffs, occasionally on electrical towers. Feeds mostly on fish.	Present. This species has been recorded nesting in the project region primarily at inland reservoirs; it is fairly rare along the Bay's edge. No suitable nesting habitat is present in the Survey Area, but occasional individuals may forge in or near the Survey Area.
Bank swallow (*Riparia riparia*)	ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	Present. There are no nesting records of this species on the bayside of San Mateo County, and no suitable nesting habitat occurs within or near the Survey Area. Rare migrants may forage over the Survey Area on occasion during the spring and fall.
California Ridgway's rail (*Rallus obsoletus obsoletus*)	FE, SE, FP, HCP	Salt marsh habitat dominated by pickleweed and cordgrass (*Spartina* spp.)	Present. Resident in northern coastal salt marsh habitat in the Survey Area, but only in the Ravenswood OSP and Baylands Nature Preserve. This species is often observed in these two locations and annual surveys conducted as part of the Invasive Spartina Project since 2006 have detected Ridgway's rails during the breeding season at these two locations (McBroom 2016). During king tides, could take refuge in the ruderal vegetation located on levees on the site, if present in the adjacent marsh.
California black rail (*Lateraluus jamaicensis coturniculus*)	ST, FP	Breeds in fresh, brackish, and tidal salt marsh.	Present. The northern coastal salt marsh habitat in the Survey Area (in Ravenswood OSP and Baylands Nature Preserve) provides suitable foraging habitat for black rails, and small numbers of this species are known to occur in the Ravenswood OSP and the Baylands Nature Preserve during the winter season. This species has recently been recorded during the breeding season in several locations in the South Bay including at the Coast Casey Forebay 3.0 miles to the south. It has been confirmed breeding in Alviso Marina County Park. Black rails are expected to be present in the Survey Area during the non-breeding season and they may be present during the nesting season. During king tides, this species may take refuge in the ruderal vegetation located on levees on the site if present in the adjacent marsh.

* The federal MBTA applies to migratory bird species that are native to the United States or its territories, and a native migratory bird is one that is present as a result of natural biological or ecological processes. Nonnative bird species that have been introduced by humans into the United States or its territories are not protected by the MBTA. Birds species protected under the MBTA are listed in 50 CFR 10.13.

TABLE 5.4-2 SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

Species	Status	Habitat	Occurrence in Project Vicinity
Western snowy plover (*Charadrius alexandrines nivosus*)	FT, SSC	Sandy beaches on marine and estuarine shores and salt pannes in Bay saline managed ponds. Occurs in critical habitat (salt panne) in project area.	Present. Known to nest and forage in the Survey Area in salt panne habitat in the southwestern part of Ravenswood Pond SF2 which is also critical habitat. This species may forage in Pond SF2 year round, but it is not expected to occur elsewhere in the Survey Area.
California least tern (*Sterna antillarum browni*)	FE, SE, FP	Nests along the coast on bare or sparsely vegetated, flat substrates. In the South Bay, nests in salt pannes and on an old airport runway. Forages for fish in open waters.	Unlikely. No suitable nesting habitat. Forages in open habitats but not likely in the Survey Area. This species forages primarily in managed ponds and over the open Bay, but the waters within the Study Area are likely too shallow to provide suitable foraging habitat for this species.
Tricolored blackbird (*Agelaius tricolor*)	SSC (nesting colony), SC	Nests near fresh water in dense emergent vegetation.	Present. Typically nest in extensive stands of tall emergent herbaceous vegetation in non-tidal freshwater marshes and ponds, which are not present in the Survey Area. This species may occasionally forage in the Survey Area during the nonbreeding season and may occur in the Survey Area as an uncommon nonbreeding visitor.
Northern harrier (*Circus cyaneus*)	SSC (nesting)	Nests in marshes and moist fields, forages over open areas.	Present. Marsh habitat in the Survey Area (in Ravenswood OSP) is suitable nesting habitat for this species. Will forage in ruderal and marsh habitats in the Survey Area year round.
Short-eared owl (*Asio flammeus*)	SSC (nesting)	Nests in marshes and moist fields, forages over open areas.	Present. Has been recorded nesting in the Palo Alto Flood Control Basin in the 1970s. This species has been observed periodically during the non-breeding season in the Survey Area. Suitable nesting habitat is not present in the Survey Area. They occasionally forage within the project area in ruderal and marsh habitats.
Loggerhead shrike (*Lanius ludovicianus*)	SSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	Present. Occur year-round in the Survey Area in open grassland and ruderal habitats where scattered brush, chaparral, or trees provide perches. No suitable nesting habitat in the Survey Area.
San Francisco (or saltmarsh) common yellowthroat (*Geothypis trichas sinuosa*)	SSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	Present. Occur year-round in marshes and adjacent uplands within the Survey Area. Taller vegetation within northern coastal salt marsh habitat and adjacent upland habitats provide potential suitable nesting habitat. During the nonbreeding season, this species may forage in marsh and adjacent upland habitats throughout the Survey Area.
Alameda song sparrow (*Melospiza melodia pusillula*)	SSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	Present. Common year-round in marshes and adjacent uplands within the Survey Area. Suitable nesting habitat is present in the marsh habitats and adjacent uplands in the Survey Area. During the nonbreeding season This species may forage in marsh and upland habitats throughout the Survey Area.

TABLE 5.4-2 SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

Species	Status	Habitat	Occurrence in Project Vicinity
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	SSC	Nests in pickleweed dominant salt marsh and adjacent ruderal habitat.	Present. Nests primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat and in adjacent ruderal habitats. Northern coastal salt marsh and ruderal habitats are suitable nesting habitats in the Survey Area. During the nonbreeding season this species may forage in open habitats throughout the Survey Area.
American peregrine falcon (*Falco peregrinus anatum*)	FP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	Present. Known to nest on electrical transmission towers within managed ponds near the Mountain View/Alviso area. Not known or expected to nest on the transmission towers in the Survey Area. They may occur in the Survey Area as occasional foragers during migration and winter.
Golden eagle (*Aquila chrysaetos*)	BGEPA, FP	Breeds on cliffs or in large trees (rarely on electrical towers); forages in open areas.	Unlikely. No suitable nesting habitat. Occasional nonbreeding individuals are observed in the region. Forages in open habitats but infrequently in the Survey Area.
White-tailed kite (*Elanus leucurus*)	FP	Nests in tall shrubs and trees; forages in grasslands, marshes, and ruderal habitats.	Present. Nests in San Mateo County throughout the open areas bordering the San Francisco Bay, typically oak woodlands or trees along marsh edges. No suitable nesting habitat is found in the vicinity of the Survey Area. Individuals known to forage occasionally in grassland and marshes in the Survey Area. Nearest known nesting sites are over 4 miles from the Survey Area and date from 1971 (CNDDB 2018). An individual was seen foraging in the Ravenswood OSP in the Survey Area in May 2017.
MAMMALS			
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, FP, HCP	Salt marsh habitat dominated by pickleweed and alkali bulrush.	Present. Occur in the Ravenswood OSP and the Baylands Nature Preserve and northern coastal salt marsh habitat. This species is not expected to occur in isolated, narrow areas of salt marsh habitat located on the peripheries of Ravenswood Pond R2 and SF2. During king tides, salt marsh harvest mice may take refuge in the ruderal vegetation located on levees on the site if they are present in the adjacent marsh.
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	SSC	Medium to high marsh 6-8 feet above sea level with abundant driftwood and common pickleweed.	Likely. Typically found in tall pickleweed where they build their nests and may be found within the Survey Area. Although there are no known records of this species in this area it would occur in northern coastal salt marsh habitat if present. Potentially occurring in the vicinity of the Ravenswood OSP (CEC 2018k)
Pallid bat (*Antrozous pallidus*)	SSC	Roosts in caves, rock outcrops, buildings, and hollow trees; forages over many habitats.	Unlikely. No suitable roosting habitat is present and no known maternity colonies are present within or adjacent to the Survey Area. Individuals from more remote colonies may forage in the Survey Area over open habitats.

Definitions Regarding Potential Occurrence:
Present: Species or sign of its presence observed on the site
Likely: Species or sign not observed on the site, but reasonably certain to occur on the site

Possible:	Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely:	Species or sign not observed on the site, conditions marginal for occurrence
Absent:	Species or sign not observed on the site, conditions unsuitable for occurrence

STATUS CODES:

FT	Federally Threatened
FC	Federal Candidate
BGEPA	Bald and Golden Eagle Protection Act
SE	State Endangered
SC	State Candidate
SSC	California Species of Special Concern
FP	Fully Protected
WL	Watch List
HCP	Species covered under the PG&E Bay Area HCP
CNPS	California Native Plant Society RPR Listing
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3	Plants about which we need more information – a review list
4	Plants of limited distribution – a watch list
.1	Seriously threatened in California (high degree/immediacy of threat)
.2	Fairly threatened in California (moderate degree/immediacy of threat)
.3	Not very threatened in California (low degree/immediacy of threats or no current threats known)

Plants

Eighty-one special-status plant species were identified from database queries conducted in 2018 (USFWS 2018, CDFW 2018, and CNPS 2018). Of these the following five special-status plant species were determined to have the potential to occur in the Survey Area and were surveyed for in 2017 during the blooming period appropriate for each species: California seablite (*Suaeda californica*), Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*), Saline clover (*Trifolium hydrophilum*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), and coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*). None of these species were observed during focused plant surveys. However, Congdon's tarplant is known to occur within the Survey Area. This species was detected during surveys conducted in 2017 for the Ravenswood Bay Trail Connection project near Tower 5 but these locations are outside any work areas for the project (CEC 2018k).

Wildlife

Several special-status species that may occasionally occur as foragers in the Survey Area include: American peregrine falcon (*Falco peregrinus anatum*), golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), short-eared owl (*Asio flammeus*), bank swallow (*Riparia riparia*), tricolored blackbird (*Agelaius tricolor*), and pallid bat (*Antrozous pallidus*). None of these species are expected to nest or roost in or immediately adjacent to the Survey Area and would not likely be affected by the project.

Species which may breed or occur within or adjacent to the Survey Area and could be affected by project activities are described below in more detail.

California Ridgway's Rail

The California Ridgway's rail is a secretive marsh bird endemic to marshes of the San Francisco estuary. In south San Francisco Bay they occur in all of the larger tidal marshes. The species is typically found in intertidal zone and sloughs of salt and brackish marshes dominated by pickleweed and Pacific cordgrass (*Spartina foliosa*). Upland transitional areas adjacent to or within these marshes are important for predator avoidance at high tides. Small populations of this species are widely distributed in the San Pablo Bay and Suisun Marsh.

California Ridgway's rails are present year-round and breed in northern coastal salt marsh habitat in the Ravenswood OSP and Baylands Nature Preserve. Within the Study Area they are located at or adjacent to Towers 5—9, the Cooley Landing Substation, and associated access routes, work areas, and staging areas.

California Black Rail

The California black rail is a small rail that inhabits a variety of marsh types. California black rails are most abundant in extensive tidal marshes with some freshwater input (Evens et al. 1991). They nest primarily in pickleweed-dominated marshes with patches or borders of bulrushes, often near the mouths of creeks. This species builds nests in tall grasses or marsh vegetation during spring, and lays about six eggs. Nests are usually constructed of pickleweed, and are placed on the ground or slightly above ground in vegetation.

Suitable habitat includes northern coastal salt marsh habitat in the Ravenswood OSP and Baylands Nature Preserve within the Study Area at or adjacent to Towers 5—9, the Cooley Landing Substation, and associated access routes, work areas, and staging areas. California black rails may nest in these marshes during the breeding season (February through June), but they are more likely to occur as an occasional winter visitor.

Western Snowy Plover

In the South San Francisco Bay, western snowy plovers nest on low, barren to sparsely vegetated salt pond levees and islands, at pond edges, and on salt panne areas of dry ponds (Page et al. 2000), and preferentially use light-colored substrates, such as salt flats (Feeney and Maffei 1991, Marriott 2003). Nesting areas are located near water, where prey (usually brine flies and other insects) are abundant. They may nest within dry salt ponds but typically nests are located on levees. The breeding season for the western snowy plover is March 1 through September 15. Sometimes nesting areas are still wet from flooding or rains which may delay nesting on March 1. Some western snowy plovers remain in their breeding areas year-round and others migrate.

The southwest portion of Pond SF2 provides suitable salt panne nesting habitat for this species, and this area is one of the most historically productive breeding ponds for western snowy plovers in the South Bay (SFBBO 2015). This area is also designated USFWS critical habitat.

Northern Harrier

The northern harrier nests in marshes and grasslands, usually those with thick vegetation in dry upland habitats. This species forages in a variety of open grassland, ruderal, and agricultural habitats in the project region. During the breeding season they prey on small mammals, reptiles, amphibians, and birds. During winter they prey on small mammals and birds.

Northern harriers nest within northern coastal salt marsh habitat in the Survey Area on SFPUC lands, at the Ravenswood OSP, and at the Baylands Nature Preserve. They forage throughout the marsh and other habitats in the Survey Area year-round.

San Francisco Common Yellowthroat

The San Francisco common yellowthroat occurs in brackish and saline tidal marsh habitat around San Francisco Bay, mostly associated in areas with a high cover of rushes (*Scirpus* spp.), Peppergrass (*Lepidium latifolium*), and *Juncus* spp. They occupy areas between moist and upland habitats as well as isolated patches where groundwater is close to the surface. In San Mateo County they occur in coastal riparian and wetland areas. Ideal habitat is composed of extensive, thick riparian, marsh, or herbaceous floodplain vegetation in perpetually moist areas, where few or no brown-headed cowbirds (*Molothrus ater*) are present (Menges 1998). The San Francisco common yellowthroat nests primarily in fresh and brackish

marshes, although this species will also nest in salt marsh habitats that support tall vegetation (Guzy and Ritchison 1999, Gardali and Evens 2008).

The San Francisco common yellowthroat may nest in taller vegetation within northern coastal salt marsh habitats or on ruderal levee slopes on SFPUC lands southwest of Pond SF2, at the Ravenswood OSP, and at the Baylands Nature Preserve. This species may forage in marsh and ruderal habitats throughout the Survey Area.

Alameda Song Sparrow

The Alameda song sparrow breeds in salt marsh habitats of the San Francisco Bay Area (Chan and Spautz 2008). Its prime habitat is large areas of tidally influenced salt marsh dominated by cordgrass and gumplant and intersected by open waters, offering dense vegetative cover and singing perches.

This species may nest in northern coastal salt marsh habitat and adjacent ruderal levee slopes on SFPUC lands southwest of Pond SF2, at the Ravenswood OSP, and at the Baylands Nature Preserve. During the nonbreeding season the Alameda song sparrow may forage in open habitats throughout the Survey Area.

Bryant's Savannah Sparrow

The Bryant's savannah sparrow occurs along coastal and bay shore areas from Humboldt Bay to Morrow Bay (Fitton 2008). It is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed-dominated salt marshes and adjacent grasslands and ruderal areas. In the South Bay, this species nests primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat (Rottenborn 2007).

The Bryant's savannah sparrow may nest in vegetation in areas of higher northern coastal salt marsh habitat and adjacent ruderal habitats around Pond SF2, on SFPUC lands southeast of Pond SF2, at the Ravenswood OSP, and at the Baylands Nature Preserve. During the nonbreeding season this species may forage in open habitats throughout the Survey Area.

Salt Marsh Harvest Mouse

The salt marsh harvest mouse is found only in saline wetlands of the San Francisco Bay and its tributaries. This species has evolved to a life in tidal marshes and depends mainly on dense pickleweed as its primary source of food and cover, although it may utilize saltgrass and other salt and brackish marsh vegetation, as well. In natural systems, this species can be found in the middle tidal marsh and upland transition zones, with adjacent upland refugia as essential habitat components during high tide events. Although its primary habitat consists of pickleweed-dominated areas in the upper regions of tidal marshes, the salt marsh harvest mouse is also found in diked and muted tidal marshes dominated by pickleweed. The salt marsh harvest mouse is capable of breeding year-round, although most reproductive activity likely occurs between March and November, with a peak in mid-summer. This species is cover-dependent and is unlikely to move long distances over bare areas, and thus isolation of suitable habitat may lead to genetic isolation of populations or local extinctions.

This species may be present in the diked marsh habitat located northeast of Tower 4 and is known to occur in the northern coastal salt marsh habitats located southeast of the railroad tracks on SFPUC lands, in the Ravenswood OSP, and in the Baylands Nature Preserve. The salt marsh harvest mouse may also take refuge within ruderal grassland vegetation on levee slopes during high tide events when the adjacent marsh is inundated.

Salt Marsh Wandering Shrew

The salt marsh wandering shrew occurs in medium to high wet tidal marsh (6 to 8 feet above MSL) with abundant driftwood and other debris for cover (Shellhammer 2000). This species has also been recorded in diked marsh habitat. Within these habitats, individuals typically prefer patches of tall pickleweed, in which they build nests.

Although this species' distribution and habitat associations in the South Bay are not well known, the salt marsh wandering shrew is presumed to be present in the same locations where the salt marsh harvest mouse may occur (i.e., pickleweed-dominated habitats) and may also take refuge along ruderal levee slopes during high tide events when the adjacent marsh is inundated.

Critical Habitat

The USFWS may designate critical habitat for a species listed as threatened or endangered under the Endangered Species Act. Critical habitat is a designation that indicates areas that have the physical and biological features believed to be essential to the conservation of the species and may require special management considerations or protection. Western snowy plover critical habitat has been designated in the southwestern portion of Salt Pond SF2 and includes the salt panne area (USFWS 2012).

Conservation Planning

The project is located within the Bay Area HCP (ICF 2017). This multi-species HCP for PG&E's routine operation and maintenance activities in the nine-county Bay Area is designed as a consistent approach to federal ESA compliance and long-term species conservation.

Regulatory Background

Federal

Endangered Species Act. The federal ESA of 1973 (Title 16, United States Code, Section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.), as amended, designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Take of federally-listed species as defined in the federal ESA is prohibited without incidental take authorization, where "take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 U.S.C. §1532(19). "Harass" is further defined in federal regulations to mean an intentional or negligent acts or omissions which create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns. "Harm" is further defined in regulations to mean an act which actually kills or injures wildlife. "Harm" may include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). Take authorization may be obtained through Section 7 consultation (between federal agencies) or approval of a Section 10 HCP. The administering agencies are USFWS and NMFS.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, United States Code, Sections 703 through 712) makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird including nests with viable eggs).

Clean Water Act Sections 401 and 404. The CWA (United States Code, tit. 33, §§1251 through 1376, and Code of Federal Regulations, part 30, §330.5 subds. (a)(26)) requires the permitting and monitoring of all

discharges to surface water bodies. Section 404 requires a permit from the USACE for a discharge from dredged or fill materials into a water of the US, including wetlands. Section 401 requires a permit from RWQCB for the discharge of pollutants.

Rivers and Harbors Act Section 10. Section 10 of the Rivers and Harbors Act of 1899 requires authorization from USACE for the construction of any structure in or over any navigable water of the US. Structures or work outside the limits defined for navigable waters of the US require a Section 10 permit if the structure or work affects the course, locations, or condition of the water body. This applies to any dredging or disposal of dredging materials, excavation, filing, rechannelization, or any other modification of a navigable water of the U.S. and applies to all structures.

Don Edwards San Francisco Bay National Wildlife Refuge and USFWS Jurisdiction. The project is located within the West Bay Unit of the Don Edwards San Francisco Bay (NWR. The project crosses the Don Edwards San Francisco Bay NWR to the north and is adjacent to Cooley Landing Substation. A Special Use Permit (SUP) can be issued by the USFWS, which manages the NWR, for certain activities occurring on NWR lands. Activities, such as PG&E's operation and maintenance of its infrastructure on the NWR, are authorized under the conditions of an existing SUP (Permit No. 2013, valid term from November 2013 to November 2018) issued by the NWR. The SUP includes conditions to protect NWR infrastructure, habitats, and species. The conditions included in the SUP must be followed during PG&E's performance of its activities.

PG&E Bay Area Operations and Maintenance Habitat Conservation Plan (Bay Area HCP). PG&E has an HCP, which has been approved by the USFWS, for routine operations and maintenance activities in the nine Bay Area counties: Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo and San Francisco counties. The HCP authorizes PG&E's incidental take of 13 federally listed plant and 18 federally listed wildlife species as part of routine operations and maintenance activities. The reconductoring, tower repair and other activities entailed in the project are Covered Activities as described in the HCP (Section 3.3.3, Operations and Maintenance Covered Activities for the Electric System).

State

California Endangered Species Act. The California ESA of 1984 (Fish and Game Code, Sections 2050 through 2098) protects California's rare, threatened, and endangered species. California ESA allows CDFW to issue an incidental take permit for a species listed as candidate, threatened, or endangered only if that take is incidental to otherwise lawful activities and specific criteria are met. These criteria are listed in Title 14 of the California Code of Regulations Sections 783.4 subdivisions (a) and (b). For purposes of California ESA "take" means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86).

Fully Protected Species. Fish and Game Code Sections 3511, 4700, 5050, and 5515 designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Title 14, California Code of Regulations, section 670.7). Incidental take of fully protected species may also be authorized in a Natural Community Conservation Plan (NCCP) (Fish and Game Code Section 2835).

California Species of Special Concern. A "Species of Special Concern" is a species, subspecies, or distinct population of an animal (fish, amphibian, retile, bird, or mammal) native to California that currently satisfies one or more of the following criteria: extirpated from the state or, in the case of birds, extirpated

in its primary season or breeding role; listed as federally, but not state, threatened or endangered; meets the state definition of threatened or endangered but has not formally been listed; experiencing, or formerly experienced, serious population declines or range retractions that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to a decline that would qualify it for state threatened or endangered status.

Nest or Eggs. Fish and Game Code Section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.

Migratory Birds. Fish and Game Code Section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds.

Native Plant Protection Act. The Native Plant Protection Act (NPPA) of 1977, Fish and Game Code, § 1900 et seq., designates state rare and endangered plants and provides specific protection measures for identified populations. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and, after properly notifying CDFW, for vegetation removal from canals, roads, and other sites; changes in land use; and in certain other situations.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act regulates discharges of waste and fill materials to waters of the state, including "isolated" waters and wetlands. The Porter-Cologne Water Quality Control Act is overseen on the state level by the State Water Control Board, and regionally by the state-designated regional water quality control boards that exercise Clean Water Act section 401 certification for projects involving waters of the U.S. and state.

McAteer-Petris Act. The McAteer-Petris Act created the San Francisco Bay Conservation and Development Commission (BCDC), which is a state agency with permit authority over the tidal waters in the nine-county San Francisco Bay and its shoreline. BCDC regulates filling, dredging, and changes in use in San Francisco Bay and development within 100 feet of the bay. The San Francisco Bay Plan (BCDC 2012) specifies goals, objectives, and policies for existing and proposed waterfront land use and other areas under the jurisdiction of BCDC. PG&E has a 10-year permit for maintenance activities in specified areas under BCDC jurisdiction that expired in January 2018 (Permit M87-74(A)), for which they have filed a request for an extension (PGE2018c). The project and surrounding areas are covered by PG&E's BCDC permit.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

City of Palo Alto Comprehensive Plan 2030. The City of Palo Alto *Comprehensive Plan 2030* was adopted in 2017. Policies and programs specific to vegetation and wildlife conservation and management are described in Goal N-1, N-2, and N-3.

- Goal N-1 addresses the conservation and enhancement of Palo Alto's open space areas while protecting special status species and ecosystems and still providing the city's citizens access to enjoy these areas.
- Goal N-2 and N-3 recognize the importance of Palo Alto's urban forest and natural and channelized creeks and riparian areas. Promoting planting of native tree species and tree maintenance as well as the updating of the Stream Corridor Protection Ordinance are included in the policies and programs to be implemented to meet these goals.

City of East Palo Alto General Plan. Goals and policies specific to the East Palo Alto General Plan to protect and preserve the city's natural habitat and wildlife are described in Goal POC-4, Policies 4.1 through 4.8.

- Policy 4.1 Public access. Ensure that public access to the Bay is designed, developed, and maintained in a manner that protects the existing natural resources and habitats.
- Policy 4.2 Human activities. Protect wildlife from adverse impacts caused by human activities.
- Policy 4.3 Don Edwards NWR management. Coordinate with federal agencies and neighboring cities to manage the Don Edwards San Francisco Bay National Wildlife Refuge in a manner consistent with the Conservation Plan, including: increased survey efforts on native fauna and flora, additional improvements to tidal marsh areas, enhanced visitor service and expanding the volunteer program, and adopt the 15[-Year] Comprehensive Conservation Plan.
- Policy 4.4 Light pollution. Require that new buildings located adjacent to Baylands Nature Preserve or Ravenswood Open Space Preserve shield any site lighting from the Bay.
- Policy 4.5 Predation. Ensure that new development and landscaping adjacent to tidal marshes and other Bayfront areas avoid tall perches for raptors or other predatory birds. Protect the salt-marsh harvest mouse from feral cat predation.
- Policy 4.6 Native species. Encourage or require the use of native and/or non-invasive plants in privately built landscaping or new open spaces near natural open space areas, in order to provide foraging, nesting, breeding and migratory habitat for wildlife. Discourage herbicides and fertilizers.
- Policy 4.7 Inter-agency coordination. Coordinate with other public agencies such as the San Francisquito Creek Joint Powers Authority, Army Corps of Engineers, National [U.S.] Fish and Wildlife Service, and other similar entities on construction or development activity occurring within or adjacent to the city.
- Policy 4.8 Riparian and flood buffer. Do not allow new development within a 100-foot buffer zone from the top of the San Francisquito creek bank.

City of Menlo Park General Plan. Programs, policies, and goals specific to the protection of natural resources and air and water quality include Goal LU-6, Policies LU-6.6, LU-6.7, and LU-6.11 and Programs LU-6.A, LU-6.D, and LU-6.E.

- Policy LU-6.6 Public Bay Access. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.
- Policy LU-6.7 Habitat Preservation. Collaborate with neighboring jurisdictions to preserve and enhance the Bay, shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas to the maximum extent possible.

- Policy LU-6.11 Baylands Preservation. Allow development near the Bay only in already developed area.
- Program LU-6.A. San Francisquito Creek Setbacks. Establish Municipal Code requirements for minimum setbacks for new structures or impervious surfaces within a specified distance of the top of the San Francisquito Creek bank.
- Program LU-6.D. Design for Birds. Require new buildings to employ façade, window, and lighting design features that make them visible to birds as physical barriers and eliminate conditions that create confusing reflections to birds.
- Program LU-6.E. Consider the most appropriate zoning designation for the Don Edwards San Francisco National Wildlife Refuge to achieve the preservation and protection of wildlife habitat and ecological values associated with the marshlands and former salt ponds bordering the San Francisco Bay.

The City of Menlo Park General Plan Open Space/Conservation and Noise and Safety elements focus on providing direction as to how to protect community safety and to maintain a clean, safe, and healthy environment including air and water quality, noise, greenhouse gas, conservation of energy, and minimizing impacts of development in hazardous or environmentally sensitive habitat areas. The goals and policies specific to natural resources and open space/conservation include Goal OSC1, Policies OSC1.1, OSC1.2, OSC1.4 to OSC1.10, OSC1.14, and OSC1.15, and Implementing Programs OSC1.A and OSC1.C.

- Policy OSC1.1. Natural Resources Integration with Other Uses. Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.
- Policy OSC1.2. Habitat for Open Space and Conservation Purposes. Preserve, protect, maintain, and enhance water, water-related areas, and plant and wildlife habitat for open space and conservation purposes.
- Policy OSC1.4. Habitat Enhancement. Require new development to minimize the disturbance of natural habitats and vegetation, and require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.
- Policy OSC1.5. Invasive, Non-Native Plant Species. Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the California Invasive Plant Inventory and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.
- Policy OSC1.6. South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in federal and state efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.
- Policy OSC1.7. San Francisquito Creek Joint Powers Authority. Continue efforts through San Francisquito Creek Joint Powers Authority to enhance the value of the creek as a community amenity for trails and open space, conservation, and educational opportunities.
- Policy OSC1.8. Regional Open Space Preservation Efforts. Support regional and subregional efforts to acquire, develop and maintain open space conservation lands.

- Policy OSC1.9. Federal, State and County Open Space and Conservation Programs. Make maximum use of federal, state, and county programs wherever possible in all matters concerned with open space and conservation.
- Policy OSC1.10. Public Education and Stewardship. Promote public education, environmental programs, and stewardship of open space and natural resources conservation.
- Policy OSC1.14. Protection of Conservation and Scenic Areas. Protect conservation and scenic areas from deterioration or destruction by vandalism, private actions or public actions.
- Policy OSC1.15. Heritage Trees. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).
- Program OSC1.A. Provide Incentives for Maintaining Private Lands in Open Space. Establish programs to provide incentives for maintaining private lands in open space and for insuring open areas within future developments through programs including but not limited to cluster development, acquisition of a permanent open space easement, and/or transfer of development rights.
- Program OSC1.C. Promote Environmental Stewardship. Promote public education, environmental programs and stewardship of natural resources and open space preservation within the City.

5.4.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APMs for Biological Resources as part of the project:

APM BIO-1: General Avoidance of Biological Resource Impacts. PG&E will implement field protocols and avoidance and minimization measures to reduce impacts on covered species and sensitive natural communities. This APM consists of the following components:

- **Worker Environmental Awareness Program (WEAP)**. PG&E will conduct environmental training for all construction and on-site personnel prior to the beginning of site work. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources, as well as the terms and conditions of permits that apply to the project. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers shall be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to be affected within the project area.

  Training will also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project.
- **Conservation Landowner Notification.** PG&E will notify conservation land owner at least two business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if required by other permits.
- **Litter and trash management.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers daily and removed from the project site according to the local sanitation service schedule. Prohibit open fires (such as barbecues) at work sites.
- **Parking and vehicle speed limit.** Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas. Off-road parking will only be permitted in

previously identified and designated work areas. Vehicle speeds on unpaved roads will not exceed 15 miles per hour.

- **Access route and work area limitations.** Vehicles will be confined to established roadways and existing access roads, pre-approved temporary access routes, existing boardwalks, and designated matted work areas. Access routes and construction work areas will be limited to the minimum necessary to safely construct the project.
- **Maintenance and refueling.** All equipment will be maintained to minimize the potential for leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down-gradient aquatic habitat, unless otherwise isolated from habitat by secondary containment. Vehicles and equipment operated adjacent to marshlands and open water will be checked daily to prevent leaks of materials that, if introduced to the water, could be harmful to aquatic life. Proper spill prevention and cleanup materials will be maintained in all refueling areas and work areas.
- **Pets and firearms.** No pets, firearms, hunting or fishing will be permitted at the project site.
- **Cover pipes and excavations.** Minimize potential for covered species to seek refuge or shelter in pipes and excavations. Inspect pipes, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist will be notified and will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.

APM BIO-2: Avoid and Minimize Impacts on the California Ridgway's Rail and Salt Marsh Harvest Mouse. PG&E will implement the following measures to protect the California Ridgway's rail and salt marsh harvest mouse:

- To protect water quality and avoid the loss of individual California Ridgway's rails and salt marsh harvest mice, activities within or adjacent to California Ridgway's rail or salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Palo Alto Baylands[1]), including helicopter work, will not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. This measure is necessary because protective cover for California Ridgway's rails and salt marsh harvest mice is limited during very high tides, and construction activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation.
- For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or smooth cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protection mats to minimize ground disturbance when working within pickleweed or smooth cordgrass.
- To avoid take of salt marsh harvest mouse, a biologist will assess the site to determine if vegetation protection mats are appropriate, vegetation removal by hand is needed, and if an onsite biological

[1] "Palo Alto Baylands", as used in the text of the APMs, refers to the "Baylands Nature Preserve". See pages 5.4-1- 5.4-2 for discussion and description of the Baylands Nature Preserve.

monitor is needed. Prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas. Immediately following flushing, the field crew will place a mat or manually remove vegetation with nonmotorized tools (e.g., hoe, rake, trowel, or shovel) to the bare ground.

- Conduct work within 700 feet of wetlands suitable for the Ridgway's rail between September 1 and January 15.
- Compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio (3 acres compensated for every 1 acre permanently affected) and temporary impacts on habitat for these species at a 1:1 ratio.

APM BIO-3: Avoid and Minimize Impacts on the Western Snowy Plover. PG&E will implement the following measures to avoid and minimize impacts on the western snowy plover:

- All work on and within 600 feet of active snowy plover nests on Ravenswood Pond SF2 will be conducted outside of the snowy plover nesting season (defined as March 1 through September 1).
- Prior to conducting work at Ravenswood Pond SF2, a qualified biologist will conduct a pre- activity survey of the work areas and surrounding areas within 600 feet by standing on adjacent trails and levees and scanning the area with a spotting scope. If dependent chicks are present within 600 feet of the work areas, work will be postponed until the biologist determines that the chicks are independent (i.e., until they can fly) or have left the area. If no dependent chicks are present, work may proceed and any adult snowy plovers will be allowed to leave the area on their own.

APM BIO-4: Avoid and Minimize Impacts on Special-status Plant Species. PG&E will implement the following measures to minimize impacts on marsh habitat potentially suitable for special-status plant species:

- As part of the WEAP, include information on the identification of noxious weeds, the importance of noxious-weed control, and measures to minimize their spread. Training will include the following BMPs to avoid or minimize the spread of invasive weeds: (1) avoid working in invasive weed infested areas or prioritize activities so that infested areas are worked in last; (2) keep records of road maintenance activities including location and source of grading material; (3) maintain gravel and soil spoil piles free of invasive weeds; use areas known to be weed-free for staging and laydown areas; (4) minimize soil disturbance to the extent possible; (5) materials used for erosion control will be certified weed free (i.e. straw wattles, gravel, fill material, etc.); when restoring a site after disturbance, use a native seed mix; (6) drive on and park on established roads as much as possible; (7) off-road equipment that is not local to the project area will arrive onsite clean and free of soil and plant parts; and (8) clean clothing, footwear, and gear before moving from and infested area to a non-infested area.
- To minimize introduction and spread of noxious weeds, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition.
- PG&E will work in a direction from uninfested areas to infested areas as much as practical.
- PG&E will minimize soil disturbance and the removal of vegetation during construction, maintenance and other ground-disturbing activities to the extent practicable. Vehicles and equipment should remain on established roads as much as is practicable.

- PG&E will stage in areas not infested with weeds or treat for weed removal prior to using an infested area.

APM BIO-5: Avoid and Minimize Impacts on Sensitive Natural Communities Including Jurisdictional Wetlands and Waters. PG&E will implement the following measures to minimize impacts on sensitive natural communities including open water, northern coastal salt marsh, and disturbed northern coastal salt marsh as well as other jurisdictional wetlands and waters of the United States (U.S.)/State (e.g., salt pannes).

- Construction activities shall be designed to minimize disturbance of wetlands (including seasonal ponded areas) and regulated waters in the project area to the extent practicable. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction activities. Precautions shall be taken to avoid other damage to vegetation by people or equipment.
- For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protective matting (e.g., timber mats, crane pads) to minimize ground disturbance when working within pickleweed or cordgrass. If deemed necessary by the biologist, small areas of healthy vegetation will be cleared by hand prior to placement of protective mats.
- Erosion, sediment, and material stockpile BMPs will be installed between work areas and adjacent wetlands or waterways as required by ***APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP).*** See Section 3.9[2], Hydrology and Water Quality, for full description.
- Compensate for both permanent and temporary impacts through consultation with the USACE and San Francisco Bay RWQCB during the Clean Water Act(CWA) 404/401 permitting process.

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 Game or U.S. Fish and Wildlife Service?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Special-Status Plants

Direct Impacts

Reconnaissance field surveys and focused rare plant surveys were conducted during the blooming season (May and July 2017) for the five special-status plant species that have a potential to occur in the Study Area. This included one federally-listed plant species, California seablite, and four additional species listed as CNPS RPR 1B.1 or 1B.2, including Point Reyes bird's beak, saline clover, Congdon's tarplant, and coastal marsh milk-vetch. Surveyors conducted focused rare plant surveys in suitable habitat and found no special-status plant species within the Survey Area. Congdon's tarplant is known to occur in the Survey Area from surveys conducted in 2017 in support of the Bay Trail Connection at Ravenswood OSP project (CEC 2018k). This species was not detected during the focused rare plant

[2] **Section 5.9, Hydrology and Water Quality** in this IS/MND

surveys conducted for the project, however it is an annual plant and may not be detected every blooming season. All known locations in the Survey Area are located outside any areas that would be impacted by project activities. Based on the results of focused rare plant surveys, special-status plant species are considered absent from project work areas. In addition, **APM BIO-5** requires a biologist to flag access routes in tidal marsh or coastal wetland habitat. Therefore, the project would have no direct impacts on special-status plants.

Indirect Impacts

Construction activities have the potential to result in indirect impacts to potential habitat capable of supporting special-status plant species. There is the potential for colonization of the Study Area by several special-status species, specifically saline clover, Congdon's tarplant, and coastal marsh milk-vetch, from adjacent known occurrences. Indirect impacts to potential special-status plant habitat include degradation of water quality from erosion and sedimentation as well as habitat degradation from introduction of noxious weeds and invasive plants as well as compaction of soils. Invasive plants have the potential to displace native plants, including special-status species, by competing directly with native species for moisture, sunlight, nutrients, and space. This would be a significant impact.

As part of the project, PG&E proposed to implement **APM BIO-1** which would require general protection measures to avoid impacts to biological resources, including a requirement that all construction personnel participate in an environmental awareness program designed to provide information and training regarding special-status species in the area and limiting access route and work areas. **APM BIO-4** would require special-status plant protection measures related to noxious weed control including implementing BMPs to avoid or minimize the spread of invasive weeds. **APM BIO-5** would require measures to minimize disturbance to wetlands and other regulated waters, and minimize disturbance to tidal marsh and coastal wetland habitat, including minimizing the removal of marsh vegetation and use of vegetation mats. **APM BIO-5** would also require a biologist flag access routes for crews to minimize impacts to sensitive natural communities, which represent potential habitat for saline clover and coastal marsh milk-vetch, and PG&E crews would use protective matting to minimize ground disturbance and vegetation removal would be done by hand. These measures would reduce impacts but not to less than significant.

APM BIO-1 would not reduce indirect impacts to special-status plant species to a less-than-significant level because it does not fully address what should be included in a robust worker environmental awareness program (WEAP) that would ensure workers have been fully trained to avoid indirect impacts to special-status plants. **MM BIO-1**, which would supersede **APM BIO-1**, would include additional requirements for the WEAP. This includes providing a brochure with photographs to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction).

APM BIO-4 would not reduce indirect impacts to special-status plant species to a less-than-significant level because it does not provide specific training for workers on which invasive weeds are known to occur in the project area and/or are of concern to the MROSD who oversee management of the Ravenswood OSP. **APM BIO-4** also does not require that existing populations be flagged so that remedial actions can be taken. **MM BIO-2,** which would supersede **APM BIO-4**, would include additional requirements for the WEAP including adding information regarding specific invasive weeds that are known to occur in the vicinity and flagging known populations of noxious weeds and invasive plants in the work area prior to commencing work, as well as mapping and reporting any new noxious

weed or invasive plant observations detected within or adjacent to the project area during the course of the project to the appropriate land management agency contact.

Indirect impacts to special-status plant species from construction of the project would be avoided or minimized with implementation of measures described in **MM BIO-1** (which would supersede **APM BIO-1)**, and **MM BIO-2** (which would supersede **APM BIO-4)**. With implementation of **MM BIO-1 and MM BIO-2** indirect impacts to special-status plants would be less than significant.

MM BIO-1: General Avoidance of Biological Resource Impacts. (Supersedes **APM BIO-1**).

PG&E will implement field protocols and avoidance and minimization measures to reduce impacts on covered species and sensitive natural communities. This MM consists of the following components:

- **Worker Environmental Awareness Program (WEAP)**. PG&E will conduct environmental training for all construction and on-site personnel prior to the beginning of site work. The WEAP training will be presented by a CPUC-approved, qualified biologist. All construction crew members and contractors who attend the training will sign a form indicating that they attended the training and understood the information. Follow-up training will be conducted as needed; new workers will attend WEAP training prior to beginning at the work site.

  Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources, as well as the terms and conditions of permits that apply to the project. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to occur in the vicinity, with a focus on those species that could be affected within the project area. Training will also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project. Additionally, personnel will be trained for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources such as an active nest be found during construction). If sensitive resources are found, the qualified biologist will provide guidelines for the personnel to avoid impacts on them.

  All WEAP participants will receive a brochure that outlines all this information including contact information for the appropriate environmental personnel. A record of all trained personnel will be kept on site, and a sticker indicating training completion will be worn on all worker hard hats. A copy of the training and brochure will be provided to CPUC prior to the start of construction for project files.

- **Conservation Landowner Notification.** PG&E will notify conservation land owner at least two business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if required by other permits.

- **Litter and trash management.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed animal-proof trash containers and removed from the project site daily. Prohibit open fires (such as barbecues) at work sites.

- **Parking and vehicle speed limit.** Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas. Off-road parking will only be

permitted in previously identified and designated work areas. Vehicle speeds on unpaved roads will not exceed 15 miles per hour.

- **Access route and work area limitations.** Vehicles will be confined to established roadways and existing access roads, pre-approved temporary access routes, existing boardwalks, and designated matted work areas. Access routes and construction work areas will be limited to the minimum necessary to safely construct the project.
- **Maintenance and refueling.** All equipment will be maintained to minimize the potential for leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down-gradient aquatic habitat, unless otherwise isolated from habitat by secondary containment. Vehicles and equipment operated adjacent to marshlands and open water will be checked daily to prevent leaks of materials that, if introduced to the water, could be harmful to aquatic life. Proper spill prevention and cleanup materials will be maintained in all refueling areas and work areas.
- **Pets and firearms.** No pets, firearms, hunting or fishing will be permitted at the project site.
- **Cover pipes and excavations.** Minimize potential for covered species to seek refuge or shelter in pipes and excavations. Inspect pipes, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist will be notified and will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.

MM BIO-2: **Avoid and Minimize Impacts on Special-status Plant Species.** (Supersedes **APM BIO-4**). PG&E will implement the following measures to minimize impacts on marsh habitat potentially suitable for special-status plant species:

- As part of the WEAP, include information on the identification of noxious weeds and invasive plants, the importance of noxious-weed and invasive plant control, and measures to minimize their spread. Training will include the following BMPs [best management practices] to avoid or minimize the spread of invasive plants and noxious weeds: (1) avoid working in invasive plant or noxious weed infested areas or prioritize activities so that infested areas are worked in last; (2) keep records of road maintenance activities including location and source of grading material; (3) maintain gravel and soil spoil piles free of invasive plants or noxious weeds; use areas known to be weed-free for staging and laydown areas; (4) minimize soil disturbance to the extent possible; (5) materials used for erosion control will be certified weed free (i.e. straw wattles, gravel, fill material, etc.); when restoring a site after disturbance, use a native seed mix; (6) drive on and park on established roads as much as possible; (7) off-road equipment that is not local to the project area will arrive onsite clean and free of soil and plant parts; and (8) clean clothing, footwear, and gear before moving from an infested area to a non-infested area. In addition, WEAP training will include information on invasive weeds that are known to occur in the vicinity, including stinkwort (*Dittrichia graveolens*), non-native spartina (*Spartina* spp.), and Algerian sea lavender (*Limonium ramosissimum*). The WEAP training program and brochure will include photographs, description, natural history information, and map showing the species' distribution in relation to project activities.

- Prior to commencement of activities located on or adjacent to non-paved surfaces a biologist will flag known populations of noxious weeds and invasive plants in the work areas.
- To minimize introduction and spread of noxious weeds and invasive plants, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition.
- PG&E will work in a direction from uninfested areas to infested areas as much as practical.
- PG&E will minimize soil disturbance and the removal of vegetation during construction, maintenance and other ground-disturbing activities to the extent practicable. Vehicles and equipment should remain on established roads as much as is practicable.
- PG&E will stage in areas not infested with weeds or treat for weed removal prior to using an infested area.
- If new noxious weed or invasive plant observations are detected within or adjacent to project area, including the Ravenswood OSP, during the course of the project construction and ongoing maintenance activities, the populations will be mapped and reported to the appropriate agency contact. PG&E will conduct post-construction monitoring of any disturbed soils in the spring following completion of construction for any invasive species that inadvertently have been introduced. PG&E will report findings of any invasive plants or noxious weeds detected during project construction and/or the spring after construction to the contact for the Ravenswood OSP, Coty Sifuentes-Winters, Senior Resource Management Specialist, csifuentes@openspace.org or agency-identified alternative.

Special-Status Wildlife

No special-status wildlife species were identified in the area during reconnaissance field surveys; however, species were determined to be present based on review of existing information. In addition, special-status wildlife species with no known CNDDB or other documentation of occurrence were considered as having the potential to occur if required habitat was identified in the project area during applicant surveys. During analysis, some species were eliminated from having the potential to occur in the project area based on range or habitat requirements.

While there are three special-status fish species determined to have the potential to occur in the Study Area there are no native resident or migratory fish expected to be present in any of the project work areas due to the extremely shallow open water habitat present at these locations. Therefore, there would be no impact on special-status fish.

There are several special-status bird species and one special-status mammal species determined to have either the potential to be occasionally present as transient foragers or present seasonally as non-breeding individuals, however suitable breeding habitat is not present These species include short-eared owl (*Asio flammeus*), loggerhead shrike (*Lanius ludovicianus*), American peregrine falcon (*Falco peregrinus anatum*), golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), bank swallow (*Riparia riparia*), tricolored blackbird (*Agelaius tricolor*), and pallid bat (*Antrozous pallidus*). However, none of these species are either present during the breeding season due to migratory patterns or expected to nest on or immediately adjacent to the Survey Area due to lack of suitable habitat. These species are therefore not expected to be impacted by the project and are not discussed further.

There are seven special-status bird species and two special-status mammal species determined to be present or likely to occur in the project area that could potentially breed or occur within or immediately adjacent to the Survey Area. These species have the potential to be significantly affected by the project and are discussed in greater detail below.

Birds

California Ridgway's Rail and California Black Rail

Direct Impacts

California Ridgway's rail and California black rail are both expected to occur in the northern coastal salt marsh habitat in the project area, in particular the work areas and access routes designated for Tower 8. Direct impacts include loss of habitat, crushing of nests and eggs by construction equipment, and loss of individual birds. These would be significant impacts.

There would be permanent impacts to less than 0.001 acre and temporary impacts to 0.15 acre of northern coastal salt marsh habitat, which is habitat for California Ridgway's rail and California black rail. Permanent and temporary impacts to habitat for California Ridgway's rail and California black rail could be significant. The permanent impact footprint on northern coastal salt marsh habitat would be dispersed across four towers where eight, 16-inch diameter concrete piles would be installed (a total of 44.7 sq. ft., or 0.001 acre spread across 32 locations) PG&E would implement **APM BIO-2** which provides compensation for permanent impacts on habitat for California Ridgway's rail at a 3:1 ratio (3 acres of compensation for every 1 acre permanently affected) and temporary impacts on habitat for this species at a 1:1 ratio. PG&E would provide habitat mitigation in advance of impacts on California Ridgway's rail, as detailed in the Executive Summary of the Bay Area HCP on page ES-3, Section ES.5 Mitigation and Funding. In addition, temporary impacts would take place over a short duration around Tower 8 and protective matting would be used to access the tower so that pickleweed in the temporary work area is expected to recover quickly after work is completed. Additionally, temporary and permanent impacts would occur very close to public areas and access roads and such areas are not desirable nesting habitat for these secretive species. Therefore, temporary and permanent impacts on California Ridgway's rail and California black rail habitat would be less than significant.

Crushing of nests and eggs would not occur with implementation of **APM BIO-2.** With **APM BIO-2** work within 700 feet of nesting habitat for the California Ridgway's rail would occur only from September 1 through January 15, which is outside the nesting period, typically February until the end of August. This would provide protection for California black rail, as well, since the nesting season for this species would overlap the nesting season for California Ridgway's rail. Therefore, there would be no impacts on nesting for these species.

Loss of individual birds could occur during the non-breeding season during work in suitable habitat for the species. As discussed above under special-status plants, **APM BIO-1** would require general protection measures to avoid impacts to biological resources, including a requirement that all construction personnel participate in an environmental awareness program designed to provide information and training regarding special-status species in the area and limiting access route and work areas. **APM BIO-1** would not reduce construction impacts to a less-than-significant level because it does not fully address what should be included in a robust WEAP. The applicant would be required to implement **MM BIO-1** to minimize ~~the for~~ such impacts during construction. **MM BIO-1** would include additional requirements for the WEAP. This includes providing a brochure with photographs

to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction). Therefore, direct impacts to California Ridgway's rail and California Ridgway's rail would be less than significant with implementation of **MM BIO-1**.

Indirect Impacts

Indirect impacts to the foraging activities of both species could occur as result of additional noise and the activity of workers and use of equipment during project activities, including use of helicopters. Disturbance from project activities has the potential to cause rails to flush and would make them more susceptible to predation or limit access to high-quality cover that would otherwise conceal them from predators. In addition, nighttime construction when rails are more active could increase disturbance from project activities and also increase their risk from predators. This would be a significant impact. Nighttime construction is not anticipated, except for certain construction procedures that cannot be interrupted because of safety considerations or to take advantage of line clearances during off-peak hours. If nighttime lighting is needed to be used during construction activities, the lighting would be temporary and would be directed upward. PG&E would implement **APM BIO-2** which would limit work within 700 feet of nesting habitat for the California Ridgway's rail to September 1 through January 15, which is outside the nesting period. Project activities would only occur during the period of September to February. Indirect impacts to rails from noise and disturbance would therefore be less than significant.

Indirect impacts to California Ridgway's rail and California black rail also include attraction of predators to the site by unsecured food waste and trash. Predation on either species would be a significant impact. **APM BIO-1** includes measures related to litter and trash management however, it does not require that all trash containers be animal-proof. Animal proof trash containers would prevent attracting predators of protected species to the project area by reducing access to food waste and trash. **MM BIO-1** would include additional requirements for the WEAP and also require that trash containers be animal proof. Therefore, indirect impacts to California Ridgway's rail and California Ridgway's rail would be less than significant with implementation of **MM BIO-1,** which would supersede **APM BIO-1.**

Western Snowy Plover

Direct Impacts

Western snowy plover are known to nest and forage at Ravenswood Pond SF2 in salt panne habitat, in particular near the work areas and access routes designated for Tower 2. In addition, USFWS Critical Habitat is located in the area under Towers 2 and 3. Direct impacts include loss of individual birds, crushing of nests and eggs by construction equipment, and loss of habitat. These would be significant impacts.

Loss of individual birds could occur during the non-breeding season during work in suitable habitat for the species. As discussed above under special-status plants, PG&E proposed **APM BIO-1** which would not reduce construction impacts to a less than significant level because it does not fully address what should be included in a robust WEAP. **APM BIO-1** would not reduce construction impacts to a less-than-significant level because it does not fully address what should be included in a robust WEAP. PG&E would be required to implement **MM BIO-1**, which would supersede **APM BIO-1**, to minimize

such impacts during construction. **MM BIO-1** would include additional requirements for the WEAP, including providing a brochure with photographs to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction). Therefore, with implementation of **MM BIO-1** direct impacts on western snowy plover individuals would be less than significant.

Impacts to nesting western snowy plover, including nests and eggs, could occur if construction activities occurred in suitable habitat during the nesting season. This would be a potentially significant impact. PG&E would implement **APM BIO-3** as part of the project and project activities would only occur during the period of September to February and work within 600 feet of nesting habitat for the western snowy plover would only occur outside the nesting season (defined as March 1 through September 1 for this species). Therefore, there would be no impacts on nesting western snowy plover, including nests and eggs.

Impacts on dependent young could occur if project activities cause disturbance in areas where adults are still caring for young. Disturbance of adults and dependent young could cause birds to flush and either become temporarily separated from their young or possibly abandon their young entirely and would be a significant impact. As part of the project, PG&E would ensure pre-activity surveys for adults with dependent young would be conducted prior to the start of project work at Ravenswood Pond SF2 as described in **APM BIO-3**. Therefore, impacts on dependent young would be less than significant.

Snowy plover habitat that would be directly impacted would be limited to salt panne habitat under Towers 2. Approximately, 0.19 acres of temporary impacts and <0.01 acres of permanent impacts to salt panne habitat would result from the project. PG&E would implement **APM BIO-5,** as part of the project, which provides measures to minimize disturbance to wetlands and other regulated waters (e.g. salt pannes), and minimize disturbance to tidal marsh and coastal wetland habitat, including minimizing the removal of marsh vegetation and use of vegetation mats. PG&E would compensate for both permanent and temporary impacts as part of **APM BIO-5**. **APM BIO-5** would also require a biologist flag access routes for crews to minimize impacts to sensitive natural communities and PG&E crews would use protective matting to minimize ground disturbance and vegetation removal would be done by hand. Therefore, impacts from loss of habitat would be less than significant.

Indirect Impacts

Indirect impacts to western snowy plover could occur from disturbance of foraging activities could result from additional noise and the activity of workers and equipment during project activities, including use of helicopters. This would potentially be a significant impact. However, the foraging habitat available in the project area represents a small proportion of suitable habitat for this species in the vicinity of the project. Therefore, with this consideration, impacts would be less than significant.

Northern Harrier, San Francisco Common Yellowthroat, Alameda Song Sparrow, Bryant's Savannah Sparrow, and White-tailed Kite

Direct Impacts

These species are all known to either nest, roost, and/or forage year-round in the project area. The white-tailed kite is known to forage in the project area in grassland and marsh habitat however does

not have potential to nest in the project vicinity. The nearest known nesting locations the in San Mateo County are over 4 miles away. White tailed kite is not expected to nest in or near the project area and therefore nesting would not be impacted for this species. Direct impacts include loss of individual birds, crushing of nests and eggs by construction equipment, and loss of habitat. These would be significant impacts.

As part of the project, PG&E would ~~implement **APM BIO-2** and **APM BIO-3** and would conduct all~~ schedule construction ~~activities during the period~~between September and~~to~~ February, which is outside the nesting seasons for these species ~~and most other native or migratory birds~~ (typically March 1 to August 15). This time restriction is consistent with that included in section II.K. [*Work Windows*] of PG&E's Marsh Authorization from the SFBCDC (No. M87-74(A)). The Marsh Authorization further stipulates that work outside this time window may not occur "unless a habitat evaluation and, if necessary, a springtime field survey has been performed confirming the absence of the species within an appropriate buffer area for each specific endangered species." White tailed kite is not expected to nest in or near the project area. Therefore, there would be no impacts to special-status or other native or migratory nesting birds.

Loss of individual birds could occur during the non-breeding season during work in suitable habitat for the species. As discussed above under special-status plants, PG&E proposed **APM BIO-1** which would require general protection measures to avoid impacts to biological resources, including a requirement that all construction personnel participate in an environmental awareness program designed to provide information and training regarding special-status species in the area and limiting access route and work areas. **APM BIO-1** would not reduce construction impacts to a less-than-significant level because it does not fully address what should be included in a robust WEAP. The applicant would be required to implement **MM BIO-1,** which supersedes **APM BIO-1**, to minimize such impacts during construction. **MM BIO-1** would include additional requirements for the WEAP. This includes providing a brochure with photographs to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction). Therefore, direct impacts to northern harrier, San Francisco common yellowthroat, Alameda song sparrow, Bryant's savannah sparrow, and white-tailed kite, would be less than significant with implementation of **MM BIO-1**.

There would be permanent and temporary impacts to habitat for these species. Permanent and temporary impacts to habitat could potentially be significant. PG&E would implement **APM BIO-2**, which provides compensation for permanent impacts on habitat for California Ridgway's rail at a 3:1 ratio (3 acres of compensation for every 1 acre permanently affected) and temporary impacts on habitat for this species at a 1:1 ratio. PG&E would provide habitat mitigation in advance of impacts on California Ridgway's rail, as detailed in the Executive Summary of the Bay Area HCP on page ES-3, Section ES.5 Mitigation and Funding. PG&E would also compensate for both permanent and temporary impacts to sensitive natural communities, including jurisdictional wetlands, as part of **APM BIO-5**. Therefore, there would be a less than significant impact from loss of habitat.

Indirect Impacts

Disturbance of foraging and roosting activities of these species could result from additional noise and the activity of workers and equipment during project activities, including use of helicopters. This would potentially be a significant impact. However, the foraging and roosting habitat available in the

project area represents a small proportion of suitable habitat for these species regionally. Therefore, with this consideration, impacts would be less than significant.

Mammals

Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew

Direct Impacts

Salt marsh harvest mouse and salt marsh wandering shrew are both expected to occur in low numbers in the pickleweed-dominated habitats in the ~~work areas~~project area, in particular near the work areas and access routes designated for Tower 8. Salt marsh harvest mouse is a federally listed species that is covered under PG&E's Bay Area HCP, however the salt marsh wandering shrew is not federally listed and is not a covered species in the HCP. Direct impacts to both species include injury or mortality of individuals as a result of crushing by equipment, vehicle traffic, and worker foot traffic, crushing of nests by construction equipment, and loss of habitat. Due to the rarity of both the salt marsh harvest mouse and salt marsh wandering shrew these impacts would be significant.

~~The project is unlikely to impact a large number of individuals in part due to the rarity of both species.~~ There would ~~also~~ be a minimal loss of habitat (0.15 acre) from the project at Tower 8 and construction activities would be temporary. The project is therefore unlikely to alter the overall distribution of salt marsh harvest mouse or salt marsh wandering shrew. However, loss of individuals could still occur during work in suitable habitat for the species without impact minimization and mitigation measures (specifically **APM BIO-2** and **MM BIO-1**).

As discussed above under special-status plants, PG&E proposed **APM BIO-1** which would require general protection measures to avoid impacts to biological resources, including a requirement that all construction personnel participate in an environmental awareness program designed to provide information and training regarding special-status species in the area and limiting access route and work areas. However, **APM BIO-1** would not reduce construction impacts to a less-than-significant level because it does not fully address what should be included in a robust WEAP. The applicant would be required to implement **MM BIO-1** to minimize such impacts during construction. **MM BIO-1** would include additional requirements for the WEAP. This includes providing a brochure with photographs to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction).

As part of the project, PG&E would implement **APM BIO-2** to avoid direct impacts on salt marsh harvest mouse whereby a biologist would assess the work areas in suitable habitat, determine if vegetation protection mats are appropriate or if vegetation removal by hand is needed, and if an onsite biological monitor is needed, as required by Hot Zone-8, a conservation measure described in Table 5-1 on page 5-13 in Section 5.5.1, Avoidance and Minimization of Impacts of the PG&E Bay Area HCP. These measures, although included to minimize impacts to salt marsh harvest mouse would also minimize impacts to salt marsh wandering shrew, if present. In addition, prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas and the field crew would then immediately place a mat or manually remove vegetation with non-motorized tools (to the bare ground), flushing individuals from areas of suitable habitat prior to placement of vegetation mats or vegetation clearing.

With implementation of **MM BIO-1,** direct impacts to salt marsh harvest mouse and salt marsh wandering shrew would be less than significant.

There would be permanent impacts to less than 0.001 acre and temporary impacts to 0.15 acre of northern coastal salt marsh habitat, the primary habitat for salt marsh harvest mouse and salt marsh wandering shrew. However, PG&E would implement **APM BIO-2** as part of the project and would provide compensation for permanent impacts on salt marsh harvest mouse habitat at a 3:1 ratio (3 acres of compensation for every 1 acre permanently affected) and temporary impacts on habitat for this species at a 1:1 ratio. PG&E would provide habitat mitigation in advance of impacts on salt marsh harvest mouse, as detailed in the Executive Summary of the Bay Area HCP on page ES-3, Section ES.5 Mitigation and Funding. This would also compensate for impacts to salt marsh wandering shrew habitat. Therefore, direct impacts from loss of habitat would be less than significant.

Indirect Impacts

Indirect impacts could also occur if individuals vacate the work areas as a result of increased levels of noise and disturbance and are displaced to areas of increased competition from resident individuals of the same species or increased predation risk due to lack of sufficient cover. As part of the project, PG&E would implement **APM BIO-2** to avoid the loss of individual salt marsh harvest mice**.** As part of **APM BIO-2** work activities within or adjacent to salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Baylands Nature Preserve), including helicopter work, would not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. **APM BIO-2** would reduce this indirect impact to less than significant because protective cover for the salt marsh harvest mouse is limited during very high tides, and construction activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation.

Indirect impacts to both species also include attraction of predators, including feral cats, to the site by unsecured food waste and trash. Predation on either species would be a significant impact. **APM BIO-1** includes measures related to litter and trash management. However, **APM BIO-1** would not reduce impacts to a less-than-significant level because it does not require that all trash containers be animal-proof. Animal proof trash containers would prevent attracting predators of protected species to the project area by reducing access to food waste and trash. **MM BIO-1** would include additional requirements for the WEAP and also require that trash containers be animal proof. Therefore, with implementation of **MM BIO-1** indirect impacts would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Indirect impacts to several special-status wildlife species could occur with installation of the OPGW peaks, which are lattice extensions, typically 4.5-feet in height, mounted to the top of the tower, and the cage-top extensions, which are 10-foot lattice extensions with cross arms bolted to the top of the tower. Specifically, California Ridgway's rail, California black rail, western snowy plover, salt marsh harvest mouse, and salt marsh wandering shrew, could be impacted by the installation of these project features.

The OPGW peaks would increase the height of Towers 8 and 9 located in potential habitat for California Ridgway's rail, California black rail, salt marsh harvest mouse, and salt marsh wandering shrew habitat and improve the quality of perch sites available for raptors, such as red-tailed hawks

and peregrine falcons, by increasing the height of the existing towers. This would be a significant impact if it increased depredation on any of these species. However, the 4.5 foot OPGW peak would only result in a 5.3 percent height increase, and increasing the height of a structure does not directly correspond to increasing its use by birds of prey. In addition, there are many similar perches available for raptors at the Ravenswood OSP and Baylands Nature Preserve, including other towers and nearby mature trees. Therefore, the modifications in height to Towers 8 and 9 are not expected to result in a significant increase in raptor depredation of California Ridgway's rail, California black rail, salt marsh harvest mice, or salt marsh wandering shrews and indirect impacts from the OPGW would be less than significant.

The OPGW peaks and cage-top extension would increase the height of Tower 2 by 14.5 feet and the OPGW peak would increase the height of Tower 3 by 4.5 feet. Both are located in potential habitat for western snowy plover and potentially could improve the quality of perch sites available for raptors, such as red-tailed hawks and peregrine falcons, by increasing the height of the existing towers. This would be a significant impact if it increased predation on the species. However, the modification to Tower 2 would only result in a 12.4 percent height increase and Tower 3 would increase by 3.7 percent, and increasing the height does not directly correspond to an increase in use by birds of prey. In addition, there are many locations with perches available for raptors at the Ravenswood OSP and Baylands Nature Preserve, including nearby transmission towers of similar height. Therefore, the modifications in height to Towers 2 and 3 are not expected to result in a significant increase in raptor depredation of western snowy plover and indirect impacts would be less than significant.

Required Mitigation Measures: MM BIO-1 and **MM BIO-2.**

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, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. There is no true riparian habitat and no CDFW jurisdictional waters present in the Study Area and PG&E would avoid indirect impacts to ruderal and herbaceous vegetation present on bayside levee banks, which are functionally equivalent to riparian banks. USFWS-designated critical habitat for the western snowy plover is located in the southwestern part of Ravenswood Pond SF2. PG&E proposes **APM BIO-3** which would require construction to take place between September and February, which is outside of the breeding season for snowy plover (March 1 to September 1). As part of **APM BIO-3**, a qualified biologist would conduct pre-activity surveys of the work areas and surrounding areas within 600 feet and postpone work if dependent chicks are present. This would reduce impacts to snowy plover critical habitat to less than significant. In addition, open water habitat in the Survey Area has been designated as critical habitat for the green sturgeon and Central California Coast steelhead. However, there are no native resident or migratory fish expected to be present in any of the project work areas due to the extremely shallow open water habitat present at these locations.

Direct Impacts

Northern coastal salt marsh is considered a sensitive natural community and occurs in the Survey Area. The project would include work in or near sensitive northern coastal salt marsh habitat. The project has been designed to avoid and minimize impacts to northern coastal salt marsh in the project

area, although it is expected to result in the permanent loss of approximately 0.0003 acres and temporary loss of approximately 0.15 acres of northern coastal salt marsh habitat. Permanent loss of northern coastal salt marsh habitat would occur due to foundation improvements and is a significant impact. However, as part of the project PG&E would implement **APM BIO-2**, which would compensate for permanent impacts to northern coastal salt marsh habitat at a 3:1 ratio and at a 1:1 ratio for temporary impacts. In addition, avoidance and minimization measures as described in the PG&E Bay Area HCP (specifically, FP-05, FP-06, FP-13, and Hot Zone-8) would ensure that the covered activities avoid and minimize impacts on northern coastal salt marsh habitat. PG&E would also provide compensatory habitat mitigation in advance of impacts on covered species, including California Ridgway's rail and salt marsh harvest mouse, as detailed in the Executive Summary of the Bay Area HCP on page ES-3, Section ES.5 Mitigation and Funding. Therefore, direct impacts from loss of habitat would be less than significant.

Indirect Impacts

Construction activities have the potential to result in indirect impacts to northern coastal salt marsh, a sensitive natural community. Indirect impacts include sedimentation or modification of hydrology. Indirect impacts also include introduction and spread of noxious weeds and invasive plants into northern coastal salt marsh habitat. As discussed previously, this could result in eradication of special-status plant species and fragmentation of special status plant species within this habitat. These would be significant impacts.

As part of the project, PG&E would implement **APM BIO-5**, which would minimize impacts to northern coastal salt marsh in the project area by limiting disturbance or removal of vegetation to the minimum necessary to complete construction activities and implementing precautions to avoid other damage to vegetation by people or equipment. **APM BIO-5** also requires a biologist to flag access routes for crews ~~where ground disturbance~~ when work in tidal marsh or coastal wetland habitat would occur to minimize impacts. In addition, PG&E crews would use protective matting to minimize ground disturbance when working within pickleweed or cordgrass. ~~If vegetation must be removed it would be done by hand,~~ If deemed necessary by the biologist, small areas of healthy vegetation would be cleared by hand prior to placement of protective mats, thereby minimizing work disturbance of soils and vegetative covers in northern salt marsh habitat. **APM BIO-5** also includes requirements to avoid impacts on water quality through the use of erosion, sediment, and material stockpile BMPs to be installed between work areas and adjacent wetlands or waterways as required by **APM HYD-1**. These measures would reduce indirect impacts but not to less than significant.

To further minimize indirect impacts to northern coastal salt marsh by construction activities, PG&E would be required to implement **MM BIO-1**, which would supersede **APM BIO-1**, which includes additional requirements for the WEAP training that would be provided to all construction and on-site personnel and would include detailed information about the sensitive biological resources on site. To further minimize the introduction and spread of noxious weeds and invasive plants into northern coastal salt marsh habitat, PG&E would be required to implement **MM BIO-2**, which would supersede **APM BIO-4**, which includes impact avoidance measures related to noxious weeds and invasive plants as well as additional requirements for the WEAP such as adding information regarding specific invasive weeds that are known to occur in the vicinity and flagging known populations of noxious weeds and invasive plants in the work area prior to commencing work. Indirect impacts would be avoided and minimized to less than significant levels through implementation of **MM BIO-1 and MM BIO-2**. With

the implementation of **MM BIO-1** and **MM BIO-2** impacts to federally protected wetlands would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: MM BIO-1.

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.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Direct Impacts

Section 404 of the Clean Water Act regulates the discharge of dredge or fill material into waters of the U.S. including wetlands. The project has been designed to minimize impacts to wetlands and waters in the project area. However, the project would impact open water (waters of the U.S.) and northern coastal salt marsh habitat (wetland). Impacts to northern coastal salt marsh include approximately 0.0003 acre (permanent) and 0.15 acre (temporary), and impacts to open water would include approximately 0.0003 acre (permanent) and 0.29 acre (temporary). Permanent loss of northern coastal salt marsh habitat and open water would occur due to foundation improvement and would be a significant impact.

As part of the project, PG&E would implement **APM BIO-2** and would compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio and at a 1:1 ratio for temporary impacts. This would compensate for permanent and temporary impacts to northern coastal salt marsh habitat. PG&E would provide habitat mitigation in advance of impacts on covered species, including California Ridgway's rail and salt marsh harvest mouse, as detailed in the Executive Summary of the Bay Area HCP on page ES-3, Section ES.5 Mitigation and Funding. PG&E would also implement **APM BIO-5** and would compensate for both permanent and temporary impacts through consultation with the USACE and SWRCB during the Section 404 of the Clean Water Act 404 and the Clean Water Act Section 401 permitting process. Therefore, direct impacts to federally protected wetlands would be less than significant.

Indirect Impacts

Construction activities have the potential to result in indirect impacts to federally protected wetlands. Indirect impacts include sedimentation or modifications to the hydrology of wetlands that lie outside the project footprint. Indirect impacts also include introduction and spread of noxious weeds and invasive plants into northern coastal salt marsh habitat. As discussed previously, this could result in eradication special-status plant species and fragmentation of special status plant species within this habitat. These would be significant impacts.

As part of the project, PG&E would implement **APM BIO-5**, which would minimize impacts to wetlands and waters in the project area by limiting disturbance or removal of vegetation to the minimum necessary to complete construction activities and implementing precautions to avoid other damage to vegetation by people or equipment. **APM BIO-5** also requires a biologist to flag access routes for crews where ground disturbance in tidal marsh or coastal wetland habitat would occur to minimize impacts. In addition, PG&E crews would use protective matting to minimize ground disturbance when working within pickleweed or cordgrass. If vegetation must be removed it would be done by hand, thereby minimizing work disturbance of soils and vegetative covers in northern salt marsh habitat. **APM BIO-5** also includes requirements to avoid impacts on water quality through the use of erosion, sediment, and material stockpile BMPs to be installed between work areas and adjacent wetlands or waterways as required by **APM HYD-1**. These measures would reduce indirect impacts but not to less than significant.

To further minimize indirect impacts to federally protected wetlands by construction activities, PG&E would be required to implement **MM BIO-1**, which would supersede **APM BIO-1**, which includes additional requirements for the WEAP training that would be provided to all construction and on-site personnel and would include detailed information about the sensitive biological resources on site. To further minimize the introduction and spread of noxious weeds and invasive plants into northern coastal salt marsh habitat, PG&E would be required to implement **MM BIO-2**, which would supersede **APM BIO-4**, which includes impact avoidance measures related to noxious weeds and invasive plants as well as additional requirements for the WEAP such as adding information regarding specific invasive weeds that are known to occur in the vicinity and flagging known populations of noxious weeds and invasive plants in the work area prior to commencing work. Indirect impacts would be avoided and minimized to less than significant levels through implementation of **MM BIO-1 and MM BIO-2**. With the implementation of **MM BIO-1** and **MM BIO-2** impacts to federally protected wetlands would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: **MM BIO-1** and **MM BIO-2.**

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 wildlife nursery sites?

Construction

LESS THAN SIGNIFICANT. A significant impact would occur if the project construction interfered with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impeded the use of native wildlife nursery sites in the project area. Significant impacts would also occur if construction of the project resulted in habitat fragmentation that would affect species movement in migratory wildlife corridors or impeded the use of native wildlife nursery sites. Migratory wildlife corridors are typically defined as an area of land which contains topography which serves to allow for the movement of all sizes of wildlife and is used by wildlife, including large animals on a regional scale. Nursery sites are typically defined as

sites where wildlife concentrate for hatching and/or raising young such as in rookeries, spawning areas, and bat colonies.

Native resident or migratory fish are not expected to be present in any of the project work areas due to the extremely shallow open water habitat present at these locations. As described in Item (a), several special-status bird species and one bat species are known to potentially occur in the Study Area as nonbreeding foragers or visitors but do not use the area as a known migratory corridor or a nursery site. There are several special-status bird species and two special-status mammal species that may breed or occur within or adjacent to the project area. However, only western snowy plover was considered as potentially having a native wildlife nursery site in the project vicinity since snowy plover critical habitat is located in the southwestern part of Ravenswood Pond SF2. At the time of designation as critical habitat in 2009, Pond SF2 supported 23 western snowy plover nests of which 17 hatched young (USFWS 2012).

Migratory Wildlife Corridors

Reconductoring the Ravenswood–Cooley Landing 115 kV line would take place along the existing alignment which has been in use for over 50 years. The project would not create a new barrier that would inhibit migration during construction since the work areas would be dispersed across four towers where eight, 16-inch diameter concrete piles would be installed (a total of 44.7 sq. ft., or 0.001 acre spread across 32 locations) and disturbance would be temporary (lasting approximately 4 months). Therefore, there would be no impact to migratory wildlife corridors from construction of the project.

Native Wildlife Nursery Sites

The project includes the use of helicopters within a known wildlife nursery site for birds, specifically western snowy plover. Noise produced by the helicopters could impede or discourage bird use of the nesting areas near the project alignment. PG&E proposes **APM BIO-3** which would require construction to take place between September and February, which is outside of the breeding season for nesting birds. In addition, **APM BIO-3** would require having a qualified biologist conduct pre-activity surveys and the within 600 feet and postponing work if dependent chicks are present. Therefore, impacts on native wildlife nursery sites would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. Since the existing alignment has been in use for over 50 years and the level of operation and maintenance activities is not expected to change as a result of this project, there would be no long-term impact on 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. No impact would occur as a result of the project.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The City of Palo Alto Comprehensive Plan 2030, Goal N-1 includes policies related to special-status species and natural water or wetland habitats (i.e., marshlands, salt ponds, etc.). The project would not be inconsistent with any of these policies. Goal N-2 includes policies for the protection, enhancement, and maintenance of urban trees. No tree removal is proposed for this project. Goal N-3 includes policies for the protection of natural and channelized creeks and riparian areas. There are no creeks in the project area and the project would not remove any riparian vegetation. Therefore, no impact would occur from conflicts with these policies.

The East Palo Alto General Plan, Policy 4.5, provides for the protection of the salt-marsh harvest mouse from feral cat predation. Feral cats may be attracted to the site by food scraps and litter generated by workers as feral cats are opportunistic hunters and scavengers. **APM BIO-1** would require project trash to be disposed of in closed lid containers. **APM BIO-1** would reduce impacts, but not to less than significant. **APM BIO-1** does not specify that trash containers need to be animal proof.

PG&E would be required to implement **MM BIO-1 i**n order to reduce the project's impacts on salt marsh harvest mouse and be consistent with East Palo Alto General Plan, Policy 4.5. **MM BIO-1**, which supersedes **APM BIO-1,** requires that trash containers be animal-proof. Animal-proof trash containers would reduce the ability for scavengers, such as feral cats as well as raccoons, to access project trash containers and prevent the attraction of predators to the project area. With the implementation of **MM BIO-1,** impacts on salt marsh harvest mouse would be less than significant and the project would not be inconsistent with this policy.

The City of Menlo Park General Plan, Policy OSC1.15, provides for protection of Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance. There are no Heritage Trees in the project area. No removal of any trees would be required as part of the project. Therefore, there would be no conflict with this policy. The project would not conflict with any additional local policies or ordinances.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: MM BIO-1.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan?

Construction

NO IMPACT. The PG&E Bay Area HCP was approved by the USFWS in 2017. The project is a covered activity included as part of the operation and maintenance of the electric system and covered by the Bay Area HCP. All construction activities would comply with the provisions of the Bay Area HCP on the

protection and conservation of the California Ridgway's rail and the salt marsh harvest mouse, including implementation of all required species- and site-specific Avoidance and Minimization Measures and Best Management Practices. There are no other HCPs, NCCPs, or other conservation plans known to exist for the project area. Therefore, there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

5.4.3 References

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5.5 Cultural and Paleontological Resources

CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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 §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 dedicated cemeteries?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

5.5.1 Setting

Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of a particular environment. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American activity. In California, the prehistoric period began over 12,000 years ago and extended through the year 1769, when Europeans first settled in California.

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group, such as Native Americans, or immigrants from Africa, Europe, or Asia. They may include traditional resource collecting areas, ceremonial sites, topographic features, value-imbued landscapes, cemeteries, shrines, or ethnic neighborhoods and structures. Ethnographic resources can also be variations of natural resources and standard cultural resource types. They can be places assigned cultural significance by traditional users, such as subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways.

Tribal cultural resources are a category of historical resources recently introduced into CEQA by AB 52 (Stats. 2014). Tribal cultural resources are resources that are any of the following: sites, features, places, cultural landscapes, sacred places, or objects that are included in or determined eligible to the California Register of Historical Resources (CRHR), or are included on a local register of historical resources as defined in Public Resources Code, section 5020.1, subdivision (k). Tribal cultural resources can be prehistoric, ethnographic, or historic as defined above. Impacts to tribal cultural resources are assessed in **Section 5.17, Tribal Cultural Resources.**

Historic-period resources are those materials, archaeological and built environment, usually but not necessarily associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, buildings, structures, sites, trail and road corridors, artifacts, or other evidence of historic human activity. Under federal and state requirements, historic-period resources must typically be 50 years or older to be considered of potential historic importance. A resource less than 50 years of age may be historically important only if the resource is of exceptional importance. The Office of Historic Preservation (OHP 1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

Approach to Analysis of Cultural Resources and Previous Cultural Resources Studies

The information presented in this section was compiled from the PEA, confidential cultural resources appendices to the PEA, proponent's responses to data requests, and independent research (PGE 2017a, PGE 2018a, Stantec 2018, and Waechter and Scher 2017). The information contained in the public PEA documents is not reproduced at length in this analysis. Rather, it is summarized and analyzed for cultural resources impacts.

Methods

Records Searches and Historical Research

Records searches were completed in PG&E's cultural resources database and at the Northwest Information Center (NWIC) of the California Historical Resources Information System. The NWIC is the State of California's official repository of all cultural resource records, previous cultural resources studies, and historical information concerning cultural resources for 16 counties, including San Mateo County. The records search area included the project area and a 0.5-mile-wide buffer (Stantec 2018).

In addition to the NWIC's maps of known cultural resources and previous cultural resources studies, the records searches included perusal of local and statewide inventories of cultural resources (DPR 1976, Neal 2017, and OHP 2012). Historic maps and aerial photographs of the project and vicinity were examined as well to identify cultural resources (Baxter et al. 2007, de la Soledad et al. n.d., EDAW 2005, GLO 1883, GLO 1912, PGE 2018c, Van Bueren 2009, and Waechter and Scher 2017). These sources depict the historic appearance of the project area each decade from the 1850s through the 1970s (excepting the 1880s, 1910s, and 1920s).

Buried and Submerged Archaeological Sensitivity

The potential for prehistoric archaeological sites to be located within the project area was assessed by accounting for the changing terrestrial and submerged landscapes of the project vicinity from prehistoric times through the modern period. Little of the project area is considered terrestrial—that is, situated on land above the historical extent of San Francisco Bay. Terrestrial portions of the project area are located primarily in urban environments, which have long been subject to extensive reshaping by cut-and-fill activities. The assessment was based on surface slope, distance to historic-era streams, distance to the bay or stream confluences, and landform age (Stantec 2018).

California Native American Tribal Consultation

California Native American tribal consultation methods are described in **Section 5.17, Tribal Cultural Resources**.

Archaeological Survey

Archaeologists from Far Western Anthropological Research Group surveyed accessible portions of the project area on foot. Pedestrian survey of the project area was hampered by the tidal mudflats and salt evaporation ponds prevalent in the project area. At various points in the project area, mudflats and ponds were covered with water and so the surveyors could not examine the ground surface. Where survey was possible, primarily along Bay Road and at the Ravenswood Substation, much of the area was paved and/or built-over. Archaeologists surveyed the accessible portions of the project area by walking parallel transects spaced 30 feet between surveyors.

Ground surface conditions (inundation and development) precluded a complete surface inventory of the project area (PGE 2017a and Stantec 2018).

Architectural Survey

A separate survey and evaluation of the Ravenswood–Cooley Landing Line was conducted by an architectural historian from Stantec. The transmission line and related boardwalks were accessed at various locations along the project corridor, including Bay Road and Ravenswood and Cooley Landing Substations.

Results

Records Searches and Historical Research

The NWIC records search indicates that 11 previous cultural resources studies included portions of the project area (Anonymous 2013, Basin 2010, Billat 2000, Cartier 1984, Cartier 2001, Dietz 1973, Dotta 1974, King and Melander 1973, Koenig 2015, Sutch et al. 2003, Whitaker et al. 2012, and Stantec 2018). Identified cultural resources are discussed later in this section under the heading, "Historical Resources in the Project Area."

Buried and Submerged Archaeological Sensitivity

Most of the project area falls within the historic-era extent of the bay prior to infilling. Therefore, archaeological sites might have been submerged by sea-level rise and located beneath bay deposits. Assuming that prehistoric people occupied areas that are now submerged below sea level, they probably settled near the channels of freshwater streams and rivers, or near the margins of estuaries. Most of the project area has high potential to contain submerged archaeological resources and the middle and southern portions of the project area have high potential for buried archaeological resources (Stantec 2018).

Nineteenth- to middle-twentieth century settlers of the Ravenswood area were farmers, ranchers, and maritime traders. They situated their residences on terrestrial landforms above the marsh, whereas farming, ranching, and maritime operations occurred in the marshlands or at the bay's edge. Lester Cooley's Ranch, for example, consisted of the boat landing and approximately one dozen buildings and structures inland from the landing; the latter were concentrated on terrestrial landforms, although structural improvements such as barns occupied the lowlands. (Baxter et al. 2007 and EDAW 2005.) Later salt pond construction and other developments resulted in the farm buildings being razed or moved elsewhere, as they were no longer present in the project area beginning around 1953 (USGS 1961, USGS 1973a, USGS 1973b, and Waechter and Scher 2017).

Archaeological resources resulting from the operation of bayside farms, ranches, and landings have a likely distribution in two broad contexts: near the primary locus of activity and at the bay shore. Near the primary activity areas of farms and ranches, one can expect subsurface structural remnants (foundations, footings, fence posts), "bone yards" (scrap and extra building material saved for future use), and hollow-filled features such as privy pits and wells. Recent historic archaeological research shows that household rubbish was commonly dumped in the tidal marshes, away from residences, through the 1940s. This disposal practice kept unsanitary rubbish away from home sites and kept out of sight through a combination of distance and tidal inundation (Van Bueren 2009). The project area primarily extends through bay flats with the occasional farmstead (Cooley Ranch, Carnduff Farm) occupying terrestrial landforms just to the west.

California Native American Tribal Consultation

The results of California Native American tribal consultation are described in **Section 5.17, Tribal Cultural Resources**.

Archaeological Survey

The archaeological survey did not identify any archaeological resources in the project area.

Architectural History Survey

Other than the transmission line, the only built environment resource identified in the architectural survey is the wooden boardwalk that is parallel to the transmission line. Constructed in 1987 or later, it does not qualify as a historical resource. The Ravenswood-Cooley Landing Line is approaching 50 years old and was evaluated for this project. It is recommended ineligible for listing on the National Register of Historic Places (NRHP) or CRHR (PGE 2017a, Root 2017, and Stantec 2018).

Approach to Analysis of Paleontological Resources

Paleontological Literature Review

The geologic map review of the project area included mapping at a scale of 1:24,000 and 1:62,500 by Dibblee and Minch (2007) and Brabb and Pampeyan (1983), respectively. The literature reviewed included published and unpublished scientific papers. A paleontological record search of the project area and 1-mile buffer conducted by the University of California Museum of Paleontology, Berkeley, and additional searches were performed in available online databases. The museum responded on April 27, 2017 that there are no known fossil localities within the project area (Finger 2017).

Paleontological Sensitivity

The paleontological potential of the project area was evaluated using the federal Potential Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM, 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential). This system is intended to aid in predicting, assessing, and mitigating impacts to, paleontological resources. The PFYC ranking system is summarized in **Table 5.5-1**.

TABLE 5.5-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
1 Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 Low	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent aeolian deposits.
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.

TABLE 5.5-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
3 Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered.
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently.
	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.
U Unknown	Geologic units that cannot receive an informed PFYC assignment.
	Geological units may exhibit features or preservation conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.
	Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

Source: BLM 2016

Geologic Units and Paleoenvironment

The project area is located in the Coastal Ranges geomorphic province, which is an elongated, northwest trending, mountainous terrain located between the Pacific Ocean and the Great Valley. Specifically, the

project area is located in the southern margin of the San Francisco Bay Area, near Ravenswood Point. The Tertiary- to Quaternary-age sediments within the region rest unconformably on deformed Mesozoic-age rock complexes and consist of terrestrial and marine deposits (Brabb et al. 1998).

Geologic mapping by Dibblee and Minch (2007) and Brabb and others (1998) indicates that the project area is entirely underlain by Holocene-age sedimentary deposits (Qhbm, Qhb) and artificial fill (Qaf, af, alf), as described below, and also described in greater detail in **Section 5.6, Geology and Soils**. **Section 5.6, Geology and Soils**, also includes maps of the project area geology and soils.

Quaternary Old Alluvial Deposits (Qoa) (Not Mapped)

Quaternary older sedimentary deposits include older alluvium (Qoa). These alluvial sediments are all Pleistocene age and consist of clay, silt, sand, gravel, and boulders deposited in ancient stream and river systems, although they may be associated with modern channel networks. Quaternary older sediments are generally moderately to well consolidated and often cemented, dissected, and more topographically developed than younger units. Taxonomically diverse and locally abundant Pleistocene fossil animals and plants have been collected from older alluvial deposits throughout California and include mammoth, mastodon, camel, horse, bison, giant ground sloth, peccary, cheetah, lion, saber-tooth cat, capybara, dire wolf, and numerous taxa of smaller mammals (Jefferson 1991). In the Bay Area, as in other parts of California, Pleistocene terrestrial sediments are generally considered highly sensitive for paleontological resources, because of the large number of significant fossil finds they have produced. Pleistocene-age vertebrate fossils recorded within San Mateo County include bird (*Aves*), horse (*Equus*), moose/elk (*Alces*), mammoth (*Mammuthus*), bison (*Bison latifrons*), camel (*Camelops hesternus*), and ground sloth (*Glossotherium harlani*) (Finger 2017). Additionally, a recent study on Pleistocene vertebrate localities near the San Francisco Bay in Santa Clara County (Maguire and Holroyd, 2016) reports on three new vertebrate localities and eight previously described localities that were discovered close to the surface (between 2 and 33 foot depths) in Pleistocene deposits. All but two localities were from geologic units mapped as Holocene-age surficial deposits, indicating that Pleistocene deposits are close to the surface in Santa Clara County (Maguire and Holroyd 2016), and a similar situation may exist in the nearby project area. The study reports on an analysis of 210 fossils that were recovered from a similar depositional environment as is present within the project area and include specimens of mammoth (*Mammuthus columbi*), sloth (*Paramylodon harlani*), horse (*Equus* sp.), bison (*Bison* sp.), and pronghorn (*Capromeryx minor*), among other taxa (Maguire and Holroyd 2016).

Quaternary older sedimentary deposits are not mapped at the surface within the project area; however, they are mapped within the project vicinity and likely underlie younger Holocene-age sediments at depth.

Quaternary Young Surficial Deposits (Qhbm, Qhb)

The majority of the project area is mapped as Quaternary young surficial deposits (Qhbm, Qhb). These deposits consist of Holocene-age sediments that were laid down by fluvial processes (transported by water) and occur as fan or fluvial deposits in valley and estuarine areas. The San Francisco Bay Mud (Qhbm) consists of estuarine deposits composed of predominantly gray, green and blue, unconsolidated organic-rich clay and silty clay with interspersed lenses of sand, peat, gravel, and invertebrate shell fragments (Brabb et al. 1998; Dibblee and Minch 2007). The basin deposits (Qhb) are described as very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the Qhbm (Brabb et al. 1998). Due to their age, these younger Quaternary deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but they may well contain significant vertebrate fossil remains at depth in older deposits.

Artificial Fill (af, alf, Qaf)

Artificial fill (af, Qaf) and artificial levee fill (alf) consist of surface materials that have been disturbed by human activity. These deposits comprise materials that have been impacted and/or imported. Scientifically significant fossils are generally not known from these units, since any discovered resource would lack stratigraphic context.

Paleontological Sensitivity

The paleontological sensitivity of each geologic unit present at the site is:

- Quaternary older sedimentary deposits in the project vicinity have a moderate paleontological potential (PFYC 3).
- Quaternary surficial sediments have a low paleontological potential (PFYC 2).

Artificial fill and artificial levee fill have been mapped in portions of the project area and these deposits have a low paleontological potential (PFYC 2).

Prehistory

Archaeological evidence places the beginning of Native American occupation of the Bay Area in the Early Holocene Epoch, before approximately 8,200 years ago, although archaeological materials of this age have yet to be identified in the project vicinity. The archaeological record of the Bay Area is more robust for the Middle Holocene Epoch (8,200–4,200 years ago), where cultural deposits and human remains have been found in at least six archaeological sites at considerable depth below the modern ground surface (Stantec 2018).

Above the buried or submerged Early and Middle Holocene sediments of the Bay Area, the Late Holocene (4,200 years ago to present) ground surface harbors numerous, well-documented archaeological resources relating to Native American cultures. Two hundred or more known Native American sites are situated along the margin of San Francisco Bay, the most conspicuous of which are the large shell middens along the bay margins (Milliken et al. 2007 and Stantec 2018). Archaeological resources along the bay show a reliance of marine foodstuffs: bay mussel and oyster, marine mammals, and ocean-going fish. Further inland, Late Holocene sites exhibit a focus on freshwater fish and shellfish, as well as terrestrial game. Berries and nuts were important foods in bay and inland areas (Stantec 2018).

The archaeological record suggests that about 2,000–2,500 years ago, more permanent settlements were built in the project vicinity, associated with the great shell mounds mentioned in the previous paragraph. The structure of the shell mounds and related human burials hint at increasing social complexity and ceremonialism. Terrestrial foods formed a prominent portion of the diet compared to earlier periods, notably deer and acorns. Approximately 800 years ago, Bay Area peoples were using the bow and arrow, used diverse animals from land and sea for food, made great use of small seeds for the vegetal fraction of the diet, and had intricate trading relationships with peoples in adjacent areas (Stantec 2018). The archaeological record at this time begins to assume the appearance of the historic-period Costanoan/Ohlone Indians.

Ethnography

The project area was home to the Costanoan, or Ohlone, Indians. An ethnographic summary of Costanoan culture is presented in **Section 5.17, Tribal Cultural Resources**.

Regional History

In order to inform understanding of the significance of cultural resources in the vicinity of the project, a review of the major historical timeline markers for the project area provides context. This subsection summarizes three historic periods and several trends for the Santa Clara Valley:

- Spanish/Mission Period
- Mexican Period
- American Period
- Transportation and Railroads
- Salt Ponds
- Water Conveyance Systems
- Electric Transmission Lines

The information presented in this section was compiled from the PEA, confidential cultural resources appendices to the PEA, proponent's responses to data requests (PGE 2017a, PGE 2018a, Stantec 2018, and Waechter and Scher 2017) and independent research. The reader should consult the PEA for more exhaustive description of the Spanish/Mission Period and Mexican Period setting of the project (PGE 2017a, PGE 2018a, and Stantec 2018). This section will focus on the history more directly related to the project area and its immediate vicinity during the American Period.

Spanish/Mission Period (1769 to 1821)

The Spanish Period was characterized by several developments: the establishment of Spanish Colonial military outposts (presidios), pueblos, and 21 missions throughout Alta California. The Santa Clara de Asís Mission (established 1777 in what is now Santa Clara, approximately 15 miles from the project area) was the nearest mission to the Ravenswood vicinity. The Spanish Government also awarded land grants to soldiers and others and thus began the tradition of large land grants used for agriculture and livestock.

Mexican Period (1821 to 1848)

Following Mexican independence from Spain in 1821, Mexican Governor Pio Pico granted lands to Mexican settlers, including the former lands of the missions, whose connection to the government was lost in the Decree of Secularization in 1834. Forty-three ranchos were granted by the Mexican governor in the Santa Clara Valley between 1802 and 1845. The project crosses over the land of two of the ranchos, Rancho de las Pulgas and Rancho San Francisquito. The two ranchos covered approximately 36,712 acres. Both ranchos were subdivided in the subsequent American Period for city and town development and other types of land uses.

American Period (1848 to Present)

California became the thirty-first state in the union in 1850. Ranchos and land grants from the Spanish and Mexican periods in the Santa Clara Valley continued to be subdivided for the development of cities and towns. Transportation systems were built to service the expanding agricultural and manufacturing production and provide passenger service.

Transportation and Railroads

Cooley Landing

Travel in the Bay Area prior to the railroads and automobile was largely by ship and stagecoach. Beginning in 1849, Cooley Landing (originally known as Ravenswood Landing) was established to provide a wharf for shipping throughout the bay. As other transportation services became available, business at the landing declined. By 1890, use of Cooley Landing had ceased. In 1907 the ranch, which included the landing, was sold and the era of Cooley Landing ended. Between 1932 and 1960 the land was used as a county dump facility. The dump was closed and a wharf was resurrected from 1960 to 1998 by the Palo Alto Boat Works. Portions of the wharf exist today. Cooley Landing Park is now owned by MROSD within the Ravenswood OSP and operated by the city of East Palo Alto (MROSD 2018). Cooley Landing is located approximately 0.25 mile east of the Cooley Landing Substation and the project area.

Railroads

A decade after statehood, railroads began construction to establish connections in the Bay Area. The San Francisco and San Jose Railroad began construction in 1861 in the San Francisquito Creek area. Passenger and freight service began in the 1863–1864 timeframe (SFPUC 2009 and Waechter and Scher 2017). A few years later in 1869, the Western Pacific Railroad completed a rail line from San Jose to Niles, California, effectively connecting San Jose with the Transcontinental Railroad. This opened new markets for the agricultural and manufactured products of the Santa Clara Valley. In 1982, the Western Pacific Railroad was merged with Union Pacific Railroad (Santa Clara 2012).

The Central California Railway Company, a subsidiary of Southern Pacific Railroad, constructed a rail line connecting Newark to San Mateo by crossing the bay on a swinging drawbridge. Tracks from Niles to Dumbarton were laid in 1906 on the east side of the bay and tracks were laid from Redwood City to the bridge approach on the west side of the bay in 1908. The Dumbarton Drawbridge was completed in June 1910, shortening the rail route created earlier by the Western Pacific Railroad. The line was known as the Dumbarton Cutoff (SFCall 1910). The final freight train crossed the Dumbarton Drawbridge in 1982. Southern Pacific sold the bridge in 1994 to Caltrain for $7.1 million. A fire destroyed much of the wooden bridge in 1998. The bridge consisted of a western portion (the part that burned), a center trestle, and an eastern portion (Kazak 1998).

What is left of the swinging drawbridge remains in the open position so maritime traffic may pass through. The remaining single abandoned track on the western side of the bay is located along the southern edge of SFPUC property in the project vicinity, just south of Tower 5. A former spur line from Menlo Park once extended to Cooley Landing but the rails and ties are no longer extant (ENTRIX/Ward JV 2008, Thomas Brothers 1938, and USGS 1943).

Salt Ponds Salt Evaporating Ponds/Ravenswood Salt Works

San Francisco Bay, with its natural tidal marshlands, was a prime environment to be modified for the mining of salt. The first construction of levees to create artificial salt ponds in the Bay Area was completed by John Johnson in 1853. By the late nineteenth century, most of the East Bay shoreline south of San Lorenzo Creek had been converted to salt ponds. In 1901, the Leslie Salt Refining Company was established; later it would grow to become the largest salt-producing company in San Francisco.

The Ravenswood Salt Works ponds were developed by the Leslie Salt Company in the second decade of the 20th century. The unit encompassed 1,854 acres divided into seven ponds. The salt works were located both north and south of the Dumbarton Bridge and SR 84, within the project area. The salt works were

abandoned in the 1950s and some of the acreage has been restored to salt marsh habitat managed by the Don Edwards San Francisco Bay NWR (Speulda-Drews and Valentine 2007).

For a complete discussion of the evolution of the salt industry in the South Bay and associated features of this industry on the landscape, see EDAW (2005) and AECOM (2016).

Water Conveyance Systems

Hetch Hetchy Aqueduct/Bay Division Pipelines

The Hetch Hetchy Aqueduct system was initiated when Congress authorized the damming of the Tuolumne River in the Hetch Hetchy Valley by passing the Raker Act of 1913. Construction of the Hetch Hetchy Dam (later renamed the O'Shaughnessy Dam), associated water storage structures, water conveyance system and hydropower plant at Moccasin extended over several decades, from inception in 1913 to the late 1930s (SFPUC 2009). The system extends from the Hetch Hetchy Reservoir near Yosemite to Crystal Springs Reservoir in the Santa Cruz Mountains west of San Mateo.

The Bay Division Pipelines (BDPL), also known as the Bay Crossing Reach, are major components of the Hetch Hetchy Aqueduct water delivery system. BDPL No. 1 was constructed from 1924 to 1926, spanning the San Francisco Bay. To increase capacity, Bay Division Pipeline No. 2 was added to the existing right of way from 1934 to 1936. The Bay Division Pipeline reach is approximately 21 miles in length, extending from the Irvington Tunnel Portal in Fremont, Alameda County, to the Pulgas Tunnel Portal at Crystal Springs Reservoir in San Mateo County.

The two pipelines are diverted into three pipelines at Dumbarton and traverse the bottom of the bay, at approximately 70 feet below sea level, until they reach the Bay Caisson. Within the caisson, the flows are conveyed back into two pipelines, which then cross the remainder of the bay on a wooden trestle bridge and traverse the ground surface to the Ravenswood Valve House. At the Ravenswood Valve House, the pipelines once again go below ground. The BDPL Nos. 1 and 2 and the Ravenswood Valve House are contributors to the BDPL Nos. 1 and 2 Historic District, found to be eligible for listing on the NRHP and CRHR under Criteria A/1 and C/3. The boundary for the historic district is the SFPUC/Hetch Hetchy right-of-way, which varies from 60 feet to 100 feet in width and is approximately 21 miles in length (Ranzetta 2007a).

The Ravenswood Valve House and the BDPL Nos. 1 and 2 are located on parcels owned by SFPUC and are immediately adjacent to Staging Area 3 and Tower 4 for the project.

Bay Division Tunnel 5

The age and seismic vulnerability of the Hetch Hetchy/ BDPL servicing San Francisco and other Bay Area Peninsula water districts led the SFPUC to plan for replacing major portions of the historic water conveyance system. The project included construction of a 5-mile tunnel 100 feet below the bottom of the bay, extending from Newark to Ravenswood. The vertical access shafts are located at the Newark and Ravenswood Valve House locations. The Bay Division Tunnel 5 was completed on May 20, 2015. Other than the two new valve control buildings on the Ravenswood Valve House site, there is no visible indication of the massive tunnel project. It was this tunnel project that generated the survey and evaluation of the BDPL No 1 and 2 as a historic district, and led to the Historic American Engineering Record (HAER) recordation as part of the mitigation for impacts to the resource and its contributors. The decommissioning of the original pipelines from Newark to Ravenswood was found to be a significant but mitigable impact under CEQA. The HAER documentation combined with interpretive displays at nearby

wildlife refuges or other public spaces having a view of the historic structures were proposed to reduce the impacts to less than significant.

Electric Transmission Lines

Ravenswood-Cooley Landing Transmission Line

The Ravenswood–Cooley Landing Line, the subject of this project, is one of three parallel transmission lines connecting the Ravenswood Substation to the Cooley Landing Substation. The 115 kV line is 1.6 miles in length and comprises nine steel lattice towers of three different configurations. The line traverses an area of salt marsh within the Ravenswood OSP. Those towers within the marshland have exposed concrete footings. All of the towers are pyramidal in shape.

The Ravenswood–Cooley Landing Line was constructed in 1970 and has remained in its original configuration since that time. The wooden boardwalks, allowing access to the towers in the marshland, were constructed in 1987. For more historical information on PG&E's transmission system and the Ravenswood-Cooley Landing Line, see PGE (2017a).

Specific Cultural Resources in the Project Area

Five specific cultural resources are located in the project area and are discussed under two subheadings immediately below, one covering cultural resources that are ineligible for listing on the CRHR, the other describing the one resource eligible for listing on the CRHR (Bay Division Pipelines Nos. 1 and 2 Historic District). The CRHR-eligible Bay Division Pipelines Nos. 1 and 2 Historic District is a CEQA-defined "historical resource." (see definition in Regulatory Setting Section).

The project area does not contain any known CEQA-defined "unique" archaeological resources (see definition in the **Regulatory Setting** Section).

Resources Ineligible for Listing on the CRHR

The PEA identified three built environment cultural resources over 50 years old[3] within the project area, the literature search area, and other records search results for the adjacent areas. Two historic-period built environment cultural resources on Bay Road and Pulgas Avenue were identified in the PEA's records search but neither are extant. The following three built environment resources identified in the survey, literature and records searches for the PEA are within or adjacent to the project area and have been evaluated as not eligible for listing on the CRHR by others:

- Ravenswood Salt Works District (P-41-002351; Speulda-Drews and Valentine 2007)
- Ravenswood to Cooley Landing Transmission Line (PGE 2017a and Root 2017); Cooley Landing (Baxter et al. 2007)
- In addition to the resources identified in the PEA above, former tracks of the Southern Pacific Railroad Dumbarton Cutoff cross through the project area in the vicinity of Tower 5. The resource (SPRR Dumbarton Cutoff Railroad Tracks (HR-4)) was evaluated as not eligible for the NRHP or CRHR through a study completed for the Bay Division Reliability Upgrade Project (ENTRIX/Ward JV 2008).

[3] PGE (2017a) does not explicitly state that a baseline of over 50 years old for cultural resource survey and evaluation was used for their survey of cultural resources within the project area. However, it is implied on page 3.5-20 within the discussion of the field inventory results, "Although not yet 50 years of age, the Ravenswood-Cooley Landing Line itself has been evaluated for this study…" The California Office of Historic Preservation (OHP) guidance recommends recording and evaluating cultural resources 45 years or older to account for a lag in project planning process (OHP 1995).

Resource Eligible for Listing on the CRHR

One eligible historical resource, BDPL Nos. 1 and 2 Historic District, is located immediately adjacent to Staging Area 3 and Tower 4. The Bay Division Pipelines Nos. 1 and 2 and the Ravenswood Valve House are contributors to the BDPL Nos. 1 and 2 Historic District, found to be eligible for listing on the NRHP and CRHR under Criteria A/1 and C/3 (Ranzetta 2007a). The locations of the contributing resources relative to the locations of project components are shown on **Figure 5.5-1**.

Regulatory Background

Cultural Resources

Federal

The project would involve construction activities within the Don Edwards San Francisco Bay NWR (federal land) and could require permits from federal agencies. Both circumstances would make the project or portions thereof subject to federal laws and regulations, as described below.

National Historic Preservation Act. PG&E would likely need to acquire a permit from the USACE under Section 404 of the CWA. This federal permit requirement would require the USACE to comply with Section 106 of the NHPA (54 U.S.C., § 3061) and its implementing regulations (36 C.F.R., § 800), which detail how federal agencies are to assess the effects of their undertakings on historic properties (those cultural resources that are eligible for or listed on the NRHP).

National Environmental Policy Act. USACE permitting of the project would constitute a federal action subject to the National Environmental Policy Act (NEPA) (42 U.S.C., § 4321 et seq.). NEPA requires federal agencies to consider the environmental impacts—including impacts on cultural resources—of their actions in a public review process before implementation.

Archaeological Resources Protection Act. Ground-disturbing activities would occur at towers 1 and 2, both of which are located within the Don Edwards San Francisco Bay NWR. As the Don Edwards NWR is federal land, the Archaeological Resources Protection Act applies and protects archaeological resources from vandalism and unauthorized collecting.

Native American Graves Protection and Repatriation Act. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C., §§ 3001–3013) would apply to inadvertent discoveries of human remains within the Don Edwards San Francisco Bay NWR. NAGPRA requires federal agencies to consult with Indian tribes before the intentional excavation or at the time of an inadvertent discovery of native human remains and funerary objects on federal or Indian land.

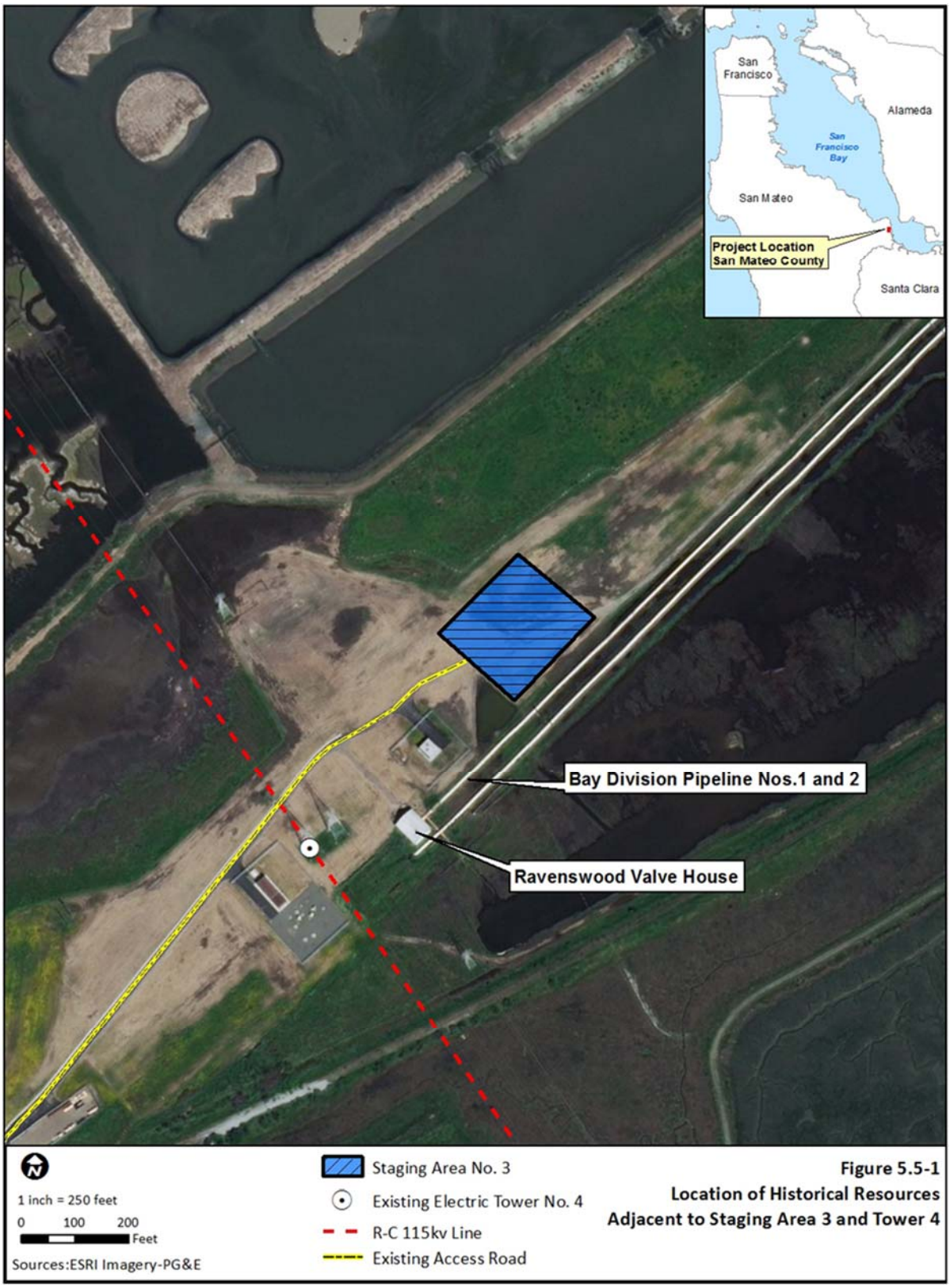

Figure 5.5-1
Location of Historical Resources Adjacent to Staging Area 3 and Tower 4

State

California Environmental Quality Act and California Register of Historical Resources. CEQA and the State CEQA Guidelines define significant cultural resources under three regulatory constructs: historical resources, unique archaeological resources, and tribal cultural resources.[4] A "historical resource" is defined as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR," or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code," or "any object , building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." (Cal. Code Regs., tit. 14, § 15064.5, subd. (a)).

Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, § 5024.1, subd. (d)).

Under CEQA, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. In addition to being at least 50 years old, a resource must meet at least one (and may meet more than one) of the following four criteria (Pub. Resources Code, § 5024.1):

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion 2, is associated with the lives of persons significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.

In addition, historical resources must possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852, subd. (c)).

Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource as defined in the Public Resources Code, sections 5020.1(j) and 5024.1.

Archaeological artifacts, objects, or sites can meet CEQA's definition of a unique archaeological resource, even if they do not qualify as historical resources (Cal. Code Regs., tit. 14, § 15064.5, subds. (c)(3)). Archaeological artifacts, objects, or sites are considered unique archaeological resources 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:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

[4] Tribal cultural resources are discussed in **Section 5.17, Tribal Cultural Resources**.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person. (Pub. Resources Code, § 21083.2, subd. (g).)

To determine whether a project may have a significant effect on the cultural resources environment, a lead agency analyzes the project's potential to cause a substantial adverse change in the significance of historical or unique archaeological resources. The magnitude of an impact depends on:

- The resource affected;
- The nature of the resource's historical significance;
- How the resource's historical significance is manifested physically and perceptually;
- Appraisals of those aspects of the resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- How much the impact will change those integrity appraisals.

The State CEQA Guidelines define a substantial adverse change as "physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (Cal. Code Regs., tit. 14, § 15064.5, subd. (b)).

Human Remains Discoveries under the Public Resources Code and Health and Safety Code. The Public Resources Code, section 5097.98, states that if Native American remains are identified within a project area, the lead agency must work with the appropriate Native Americans as identified by the NAHC and develop a plan for the treatment or disposition of, with appropriate dignity, the human remains and any items associated with Native American burials. These procedures are also addressed in Title 14, California Code of Regulations, section 15046.5, subdivision (c).

The Health and Safety Code, section 7050.5, prohibits disinterring, disturbing, or removing human remains from a location other than a dedicated cemetery until the county coroner has determined that the remains are not subject to Government Code, section 27491, or related provisions. If the coroner determines that the remains are not subject to his or her authority and believes the remains to be Native American, the NAHC must be contacted within 24 hours.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

This portion of the cultural resources setting identifies local laws, regulations, plans, and policies bearing on cultural resources in the project area. There are no applicable local registers of historic resources as defined in the Public Resources Code, section 5020.1(k) that could be used to identify CEQA-defined "historical resources".

City of Menlo Park. The City of Menlo Park General Plan has goals and policies for the protection of cultural resources in its general plan and zoning ordinance (City of Menlo Park 2016). General plan protections are found in its land use, open space, conservation, noise, and safety elements, as summarized below.

- Policy LU-7.8: Cultural Resource Preservation. Promote the preservation of buildings, objects, and sites with historic and/or cultural significance.

- Policy OSC3.1: Prehistoric or Historic Cultural Resources Investigation and Preservation. Protect and enhance cultural and historical resources for their aesthetic, scientific, educational, and cultural values.
- Policy OSC3.2: Prehistoric or Historic Cultural Resources Preservation. Require significant historic or prehistoric artifacts to be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation, and to ensure compliance with local, state, and federal regulations.
- Policy OSC3.3: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal. Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the city identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.
- Policy OSC3.4: Prehistoric or Historic Cultural Resources Found During Construction. Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
- Policy OSC3.5: Consultation with Native American Tribes. Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding general plan amendments and land use policy changes.
- Policy OSC3.6: Identification of Potential Historic Resources. Identify historic resources for the historic district in the zoning ordinance and require design review of proposals affecting historic buildings.

Section 16.54 of the City of Menlo Park Zoning Ordinance provides for a historic site district for "the protection, enhancement, perpetuation and use of structures, sites and areas that are reminders of people, events or eras, or which provide significant examples of architectural styles and the physical surroundings in which past generations lived." Such designation by the City Council restricts the Department of Community Development from approving or issuing a permit for any construction, alteration, removal, or demolition of a designated resource, unless it is in keeping with various controls provided in Section 16.68. For designated historic landmarks, Section 16.68 requires that the Planning Commission make a finding that the work will preserve, enhance, or restore, and not damage or destroy the exterior architectural features of the landmark. The City of Menlo Park (2016) maintains no local register of historic resources.

City of East Palo Alto. The city's general plan contains the following goals and policies relevant to cultural resources (City of East Palo Alto 2017).

- Goal POC-9: Protect Historic, Natural, Mineral, and Cultural Resources
- Policy POC-9.1: Archaeology, Paleontology and Natural Resources. Protect areas of important archaeological, paleontological, and natural resources.
- Policy POC-9.2: Historic Buildings and Sites. Protect and conserve buildings or sites of historic or cultural significance to contribute to the character of the community.
- Policy POC-9.3: Cooley Landing. Preserve and promote Cooley Landing as an important historical site in the development of the city.

- Policy POC-9.4: City history. Work with partners to document, educate the public about the history of the city and memorialize significant people, places and events in the history of East Palo Alto through plaques and public art.
- Policy POC-9.5: City Resources. Maintain an internal resource center containing a collection of relevant historic documents.
- Policy POC-9.6: Adaptive Reuse. Allow for the adaptive reuse of historic buildings and cultural resources.
- Policy POC-9.7: Construction Impacts. Suspend development activity when archaeological resources are discovered during construction. The project sponsor will be required to retain a qualified archaeologist to oversee the handling of resources in coordination with appropriate local and state agencies and organization and local Native American representatives, as appropriate.

Midpeninsula Regional Open Space District. The district's management policy contains a cultural resources goal to "Identify, Protect, Preserve, and Interpret Cultural Resources for the Benefit of Present and Future Generations" (MROSD 2014). Its policies include:

- Policy CR-1: Maintain an inventory of cultural resources on district preserves.
- Policy CR-2: Address cultural resources in the development of preserve use and management plans.
- Policy CR-3: Protect cultural resources from disturbance to the maximum extent feasible.
- Policy CR-4: Preserve and maintain cultural resources wherever feasible.
- Policy CR-5: Provide public access and educational programs to interpret historical and archaeological resources.
- Policy CR-6: Preserve documents and artifacts important to the history of the district.

Paleontological Resources

Federal

A portion of the project alignment crosses the Don Edwards NWF, administered by the U.S. Fish and Wildlife Service. Thus, the project is subject to the Paleontological Resource Preservation Act (16 U.S.C. § 470aaa et seq.), which establishes requirements to manage and protect paleontological resources on federal lands.

State

No State regulations related to paleontological resources apply to the project.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

City of Menlo Park. The City of Menlo Park General Plan contains the following policy related to paleontological resources apply to the project (City of Menlo Park 2a016).

- Policy OSC3.3: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal.

Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the city identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.

City of East Palo Alto. The city's general plan contains the following policy related to paleontological resources apply to the project (City of East Palo Alto 2017).

- Policy POC-9.1: Archaeology, Paleontology and Natural Resources. Protect areas of important archaeological, paleontological, and natural resources.

5.5.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APMs for cultural and paleontological resources as part of the project.

APM CUL-1: Exclusion Fencing. Temporary exclusionary fencing would be installed along the southern edge of Staging Area 3 between the work area and the Hetch Hetchy Aqueduct to ensure that project construction does not impact the eligible resource.[5]

APM CUL-2: Worker Environmental Training. Because there are areas of High or Highest sensitivity for buried cultural resources, all project field personnel should be given environmental training on cultural and paleontological resources protection resources identification and protection, and the laws and penalties governing such protection. This training may be administered by the project paleontologist/archaeologist as a stand-alone training or included as part of the overall environmental awareness training as required by the project. The training will include at minimum, the following:

- The types of cultural resources likely to be encountered
- Procedures to be taken in the event of an inadvertent cultural resource discovery (see below)
- Penalties for disturbing or destroying cultural resources
- The types of fossils that could occur at the project site
- The types of lithologies in which the fossils could be preserved
- The procedures that should be taken in the event of a fossil discovery
- Penalties for disturbing paleontological resources

APM CUL-3: Inadvertent Cultural Resource Discoveries. Because the project area is almost entirely built-over, there is high potential for inadvertent discoveries during project construction. If such discoveries take place, the following procedures will be initiated:

- All ground-disturbing construction activities within 100 feet of the discovery will halt immediately.
- The construction crew will protect the discovery from further disturbance until it has been assessed by a qualified archaeologist.

[5] **APM CUL-1** is presented as it appears in the PEA. Hetch Hetchy Aqueduct is synonymous with the Bay Division Pipelines No. 1 and 2 Historic District and its contributing resources. **APM CUL-1** provides protection to the historical resources adjacent to Staging Area 3 and Tower 4.

- The construction foreman will immediately contact the designated project inspector and the PG&E Cultural Resources Specialist (CRS).
- The project cultural resources specialist will coordinate with the PG&E CRS and the state and federal lead officials, as appropriate. If the discovery can be avoided or protected and no further impacts will occur, then the resource will be documented on DPR 523 forms, and no further effort will be required. If the resource cannot be avoided and may be subjected to further impacts, qualified personnel will evaluate the significance of the discovery in accordance with the state and federal laws outlined above; personnel will implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist will complete an evaluation of historic-period resources, while evaluation of prehistoric resources will be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.

APM CR-4[6]: Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman will contact the designated cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology; the specialist will then call the San Mateo County Coroner, as appropriate. There will be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the county coroner has determined that the remains are not subject to provisions of section 27491 of the Government Code. If the medical county coroner determines the remains to be Native American, he/she shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).

APM PAL-1: Unanticipated Paleontological Resource Discoveries. If unanticipated paleontological resources are discovered during construction activities, the following procedures will be followed:

- Stop work immediately within 100 feet.
- Contact the designated project inspector and PG&E CRS immediately.
- Protect the site from further impacts, including looting, erosion or other human or natural damage.
- The project CRS will arrange for a Principal Paleontologist to evaluate the discovery. If the discovery is determined to be significant PG&E will implement measures to protect and document the paleontological resource.
- Work may not resume within 100 feet of the find until approval by the paleontologist and PG&E CRS.

In the event that significant paleontological resources are encountered during the project construction, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E and the lead agency. A Principal Paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency. A Paleontological Monitor

[6] For purposes of consistency with the PEA, **APM CR-4** has not been renamed to **APM CUL-4**.

or other qualified individual may conduct the recovery of fossil discoveries under the direction of the Principal Paleontologist.

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

Construction

Archaeological Resources

LESS THAN SIGNIFICANT IMPACT. Records searches, literature reviews, and field surveys did not identify archaeological resources in the project area that could qualify as historical resources under CEQA. Although the prehistoric and historic archaeological sensitivity assessments presented in the PEA and this section assign a high probability for these types of resources to be submerged or buried in the project area, the amount of ground disturbance (about 2 acres total) involved in construction renders the probability of discovery low. If construction activities were to damage, destroy, relocate, or alter a previously undiscovered resource, the impact would be significant. Should inadvertent discoveries of submerged or buried archaeological resources occur during construction, implementation of **APM CUL-2** and **APM CUL-3** will assure that impacts to such resources would be less-than-significant. **APM-2** trains construction personnel to recognize exclusion boundaries and potential cultural resources, which improves personnel's ability to avoid damaging historical resources. **APM CUL-3** establishes clear procedures and responsible personnel to handle inadvertent discoveries of cultural resources during construction. **APM CUL-3** would assure the impact on previously undiscovered resources would be less than significant by halting ground disturbing activities within 100 feet of the resource. Construction would not recommence until the resource has been evaluated by a qualified archaeologist and the resource is properly treated. The impact to archaeological resources that could qualify as historical resources under CEQA would be less than significant with implementation of APMs.

Architectural Historic Resources

LESS THAN SIGNIFICANT IMPACT. To ensure project construction does not directly impact the BDPL Nos. 1 and 2 Historic District, PG&E will install temporary exclusionary fencing along the southern edge of Staging Area 3 between the work area and the Hetch Hetchy Aqueduct/ BDPL Nos. 1 and 2 Historic District, as specified in **APM CUL-1**. Construction-related activities such as truck traffic at Tower 4 and Staging Area No. 3, could result in impacts to contributors (Ravenswood Valve House and Bay Division Pipelines Nos. 1 and 2) to the BDPL Nos. 1 and 2 Historic District that are CRHR- and NRHP-eligible. Installation of the fencing and implementation of **APM CUL-1** would assure that impacts to the BDPL Nos. 1 and 2 Historic District, which qualifies as a historical resource under CEQA, would be less-than-significant by creating a physical barrier to prevent accidental damage.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. There would be no further excavation during project operation and maintenance therefore there would be no impact to historical resources.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Records searches, literature reviews, and field surveys did not identify archaeological resources in the project area that could qualify as unique archaeological resources under CEQA. Although the prehistoric and historic archaeological sensitivity assessments presented in the PEA and this section assign a high probability for these types of resources to be submerged or buried in the project area, the amount of ground disturbance involved in construction renders the probability of discovery low. If construction activities damage, destroy, relocate, or alter a previously undiscovered resource, the impact would be significant. Should inadvertent discoveries of submerged or buried archaeological resources occur during construction, implementation of **APM CUL-2** and **APM CUL-3** will assure impacts to such resources would be less-than-significant. These two APMs train construction personnel to recognize exclusion boundaries and potential cultural resources, which improves personnel's ability to avoid damaging unique archaeological resources. The APMs also establish clear procedures and responsible personnel to handle inadvertent discoveries of unique archaeological resources during construction. **APM CUL-3** would assure the impact on previously undiscovered resources would be less than significant by halting ground disturbing activities within 100 feet of the resource. Construction would not recommence until the resource has been evaluated by a qualified archaeologist and the resource is properly treated. The impact to unique archaeological resources would be less than significant with implementation of APMs.

Operations and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. There would be no further excavation during project operation and maintenance therefore there would be no impact to unique archaeological resources.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Project impacts on paleontological resources were evaluated based on an assessment of the paleontological sensitivity of identified geologic formations in relation to the project activities. In accordance with Appendix G of the CEQA Guidelines, project impacts on paleontological resources were considered significant if the project would directly or indirectly destroy a unique paleontological resource or site. Sensitivity ratings were employed to assess the likelihood and/or severity of project impacts. The sensitivity ratings provided in **Table 5.5-1**, which combine a number of relevant considerations, are considered in light of the nature of subsurface disturbance associated with the project, and the significance of impacts is determined based on that information.

There are no paleontological resources known to occur within the project area. Based on the ground disturbance necessary to complete the project, there is the potential for adverse impacts to scientifically significant paleontological resources from moderate sensitivity (PFYC 3) Pleistocene-age sedimentary deposits if encountered at depth beneath the Holocene-age deposits during tower

foundation excavation (80 to 100 feet deep). However, the small diameter of the augers for the tower foundations (16 inches) and use of a Tubex pile system makes it unlikely that any scientifically significant fossils would be recovered during foundation improvements.

The exact depth at which Pleistocene-age and older sedimentary deposits would be impacted within the project area beneath the younger alluvium is uncertain. However, the remaining project activities (i.e., staging area establishment, vegetation clearance and matting, and guard poles and snub poles installation) are anticipated to be too shallow (5 to 7 feet deep) to extend beyond the Holocene/Pleistocene boundary. Disturbance to low sensitivity (PFYC 2) Holocene young surficial deposits (Qhbm, Qhb) and artificial fill (af, alf, Qaf) have a low potential for adverse impacts to paleontological resources. Should any such discoveries occur, any resulting damage to paleontological resources would be a significant impact under CEQA. However, should any paleontological resources be discovered during construction activities at the site implementation of **APM PAL-1** would assure the impact would be less than significant. **APM PAL-1** would require a Principal Paleontologist to evaluate the significance of any paleontological resource discovery and aid in the preservation and disposition of such discovery. The Principal Paleontologist would be a qualified individual who is either an employee of PG&E or a subcontractor to PG&E. Therefore, impacts to paleontological resources would be less than significant with implementation of **APM PAL-1**.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. There would be no further excavation during project operation and maintenance therefore there would be no impact to paleontological resources.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Based on records searches and consultation with Native American Tribes, human burials are not anticipated to occur within the project area; however, the possibility of discovering human remains during ground-disturbing activity cannot be entirely discounted. The amount of ground disturbance required during construction of the project would be minimal and the actual probability of encountering human remains during construction is low. Nevertheless, if human remains were discovered during construction, the impact would be significant if the human remains provisions of state law were not followed. Implementation of **APM CR-4** will assure that impacts are less-than-significant. The APM requires work to stop within 100 feet of an inadvertent discovery of human remains and protection of the remains until the appropriate authorities are notified and proper treatment of the remains determined and carried out, thus complying with state laws governing the discovery of human remains.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. There would be no further excavation during project operation and maintenance therefore there would be no impact to paleontological resources.

Required Mitigation Measures: None.

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5.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property?*	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

*Geology and Soils question (d) reflects the current 2013 California Building Code (CBC), effective January 1, 2014, which is based on the International Building Code (2009).
Environmental criteria established by CEQA Guidelines, Appendix G.

5.6.1 Setting

Regional Geologic Setting

The project site is located near the southern margin of the San Francisco Bay Area and near the center of the Coast Ranges geomorphic province (**Figure 5.6-1**). The Coast Ranges province includes mountain ranges typically 2,000 to 4,000, occasionally 6,000 feet elevation and valleys, as referenced to the North American Vertical Datum of 1988. The ranges and valleys trend northwest, subparallel to the San Andreas fault. The province terminates on the east where strata dip beneath alluvium of the Great Valley; on the west by the Pacific Ocean with mountains rising sharply from uplifted and terraced, wave-cut coast; on the north by South Fork Mountain, which has the characteristic trend of the Coast Ranges, and on the south by the Transverse Ranges. The Coast Ranges are composed of thick late Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The San Francisco Peninsula, bounded on the east by San Francisco Bay and on the west by the Pacific Ocean, belongs to the same topographic unit as the Santa Cruz Mountains, which extend approximately 80 miles in a southeasterly direction from San Francisco to the Pajaro River, near Watsonville (Norris and Webb 1990).

Figure 5.6-1
Geomorphic Provinces

The San Francisco Bay, located east of the project area, occupies a Late Pliocene structural depression that has been flooded several times in response to Pleistocene glacial cycles. Sediment deposition within the basin now occupied by the bay has been strongly influenced by ocean-level fluctuations. During periods of glacial advance, sea levels were lower, leaving the basin dry and subject to alluvial deposition, stream channel erosion, and aeolian (wind-related) processes. During periods of glacial retreat, rising sea levels flooded the basin, resulting in fluvial deposition of fine-grained sediments at the bottom of the bay. Flatlands, created by alluvial deposition of locally derived sediments, are found between the bay margins and the surrounding hills. Historical development around the bay margins has included placement of artificial fill materials bayward of the natural shoreline, significantly altering the shoreline and reducing the size of the bay (Norris and Webb 1990).

The San Francisco Bay region is located along the complex boundary between two tectonic plates: The North American Plate and the Pacific Plate. As a result, geologic conditions in the project vicinity have been and continue to be primarily controlled by the interaction of these two plates. Under the current tectonic regime, the Pacific Plate moves northwestward relative to the North American Plate at a rate of about 5 centimeters per year (De Mets et al. 2010 and Antonellis et al. 1999). Within the past several million years, a shift to slightly oblique movement between the two plates has led to formation of the northwest-oriented mountains of the Coast Ranges. Relative movement between the North American and Pacific Plates at the latitude of the San Francisco Bay region is accommodated by predominantly strike-slip motion along a number of major faults, including the San Andreas, Hayward, San Gregorio, and Calaveras faults. In addition to these, countless other faults in the region accommodate relative motion between major faults and relieve compressional stresses along the plate boundary (Norris and Webb 1990).

The juxtaposition of the North American and Pacific Plates has resulted in the two dissimilar basement rock complexes in contact across the major longitudinal faults of the area. The Franciscan assemblage (sometimes referred to as a series or formation), is a tectonic unit consisting of a fragmented mixture of several rock types, dominated by greenish-gray greywackes in beds between 1- and 10-feet thick, interbedded with shale, chert, and occasionally limestone. These rocks were originally deposited in a deep marine environment.

The second basement complex consists of crystalline (Salinian block) basement rocks, primarily metamorphic and granitic plutonic rocks. In plate tectonic terminology the Franciscan represents a *subduction complex* and the crystalline basement represents a *magmatic arc* complex (Norris and Webb 1990). Both of these types of basement rock outcrop at elevations throughout the San Francisco bay region. Erosion of these rocks has contributed to the creation of a sequence of unconsolidated material at lower elevations, creating the relatively flat lying areas of the San Francisco Bay region, which includes the project site and the surrounding area.

Local Geology

As shown on **Figure 5.6-2**, the surface geology of the project site area is mapped primarily as Quaternary bay mud (Qhbm). The Ravenswood substation, a portion of the access road to Staging Area 3, an area just north of this access road and between Towers 3 and 4, and an area between the Cooley Landing Substation and Tower 8 are mapped as artificial fill; the levees are mapped as artificial levee fill; and the Cooley Landing Substation area and a small area just south of Tower 4 are mapped as Quaternary basin deposits (Qhb) (Brabb and Pampeyan 1998). All of these stratigraphic units are Holocene in age, meaning they were deposited within the last 11,500 to 12,000 years.

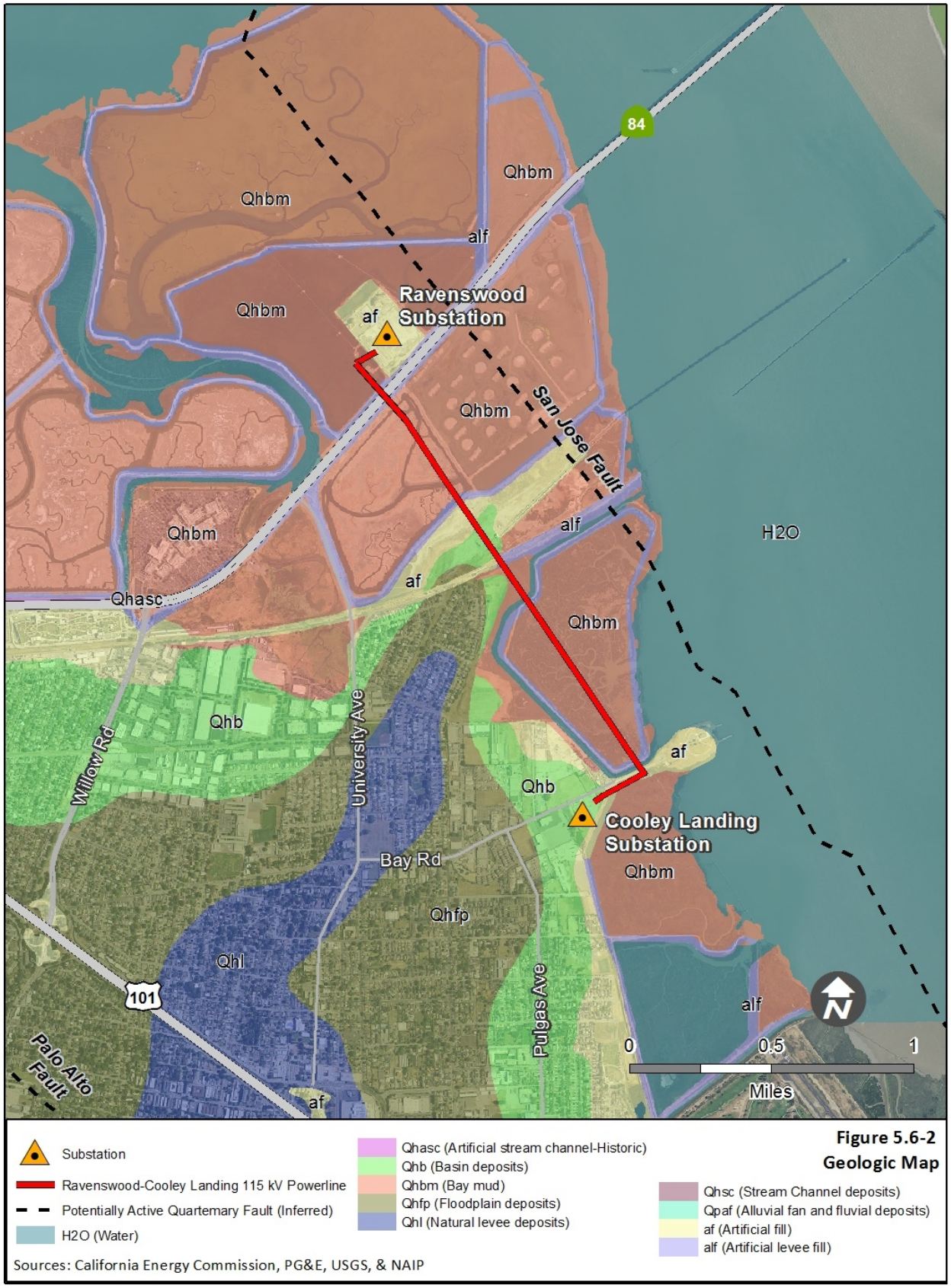

Figure 5.6-2
Geologic Map

The San Francisco Bay mud (Qhbm) and basin deposits (Qhb) were laid down by fluvial processes (transported by water) and occur as fan or fluvial deposits in valley and estuarine areas. The San Francisco Bay mud (Qhbm) consists of estuarine deposits composed of predominantly gray, green and blue unconsolidated organic-rich clay and silty clay with interspersed lenses of sand, peat, gravel, and shell fragments; thicknesses can be over 100 feet. The basin deposits (Qhb) are described as very fine silty clay-to-clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the Qhbm. Artificial fill and artificial levee fill consist of surface materials that have been disturbed by human activity. These deposits comprise materials that have been imported and/or modified. They may be loose to very well consolidated, and may contain gravel, sand, silt, clay, rock fragments, organic matter, and manmade debris in various combinations. Artificial fill thickness is variable and may be 100 feet in places; artificial levees may be over 20 feet high in places (Brabb and Pampeyan 1998).

Subsidence, which is the downward displacement of a large portion of land, has affected many areas in California, including portions of San Mateo County. There are various causes of subsidence, most of which happen slowly. The exception is tectonic subsidence, which occurs suddenly as a result of soil compaction due to strong ground shaking during earthquakes. San Mateo County is most affected by subsidence caused by the groundwater withdrawal, hydro-compaction, and earthquakes (Poland and Ireland 1982).

Historical subsidence in the project vicinity has occurred due to the highly compressible nature of some of the underlying fill and sediments. Hydro-compaction occurs when open-textured soils become saturated with water, lose strength, and consolidate under their own weight. Groundwater withdrawal, particularly from the 1920s through mid-1960s, resulted in subsidence in the project vicinity; however, by 1969, groundwater was no longer being used as a source of drinking water, and subsidence associated with groundwater withdrawal and hydro-compaction had ceased (City of Menlo Park 2016). Tectonic subsidence results in the compaction of loose, non-cohesive soils during earthquakes, and could occur in parts of San Mateo County where the groundwater surface is deep. Loose to medium dense, uniformly graded sands are most susceptible. In areas with shallow groundwater, such as the project area, liquefaction is more likely in the event of significant seismic shaking. The potential for ground subsidence due to earthquake motion is largely dependent on the magnitude, duration, and frequency of the earthquake waves. (Elnashai and Aarno 2015)

Soils

As shown on **Figure 5.6-3**, the project site surface soils are predominantly mapped as Novato clay, 0 to 1 percent slopes ponded, with the Ravenswood substation area and area around the railroad tracks near the center of the project alignment mapped as Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes. South of Bay Road at the Tower 8 location, soil is mapped as Novato Clay, 0 to 1 percent slopes, tidally flooded. Soils at the Cooley Landing Substation are mapped as Botella-Urban land complex, 0 to 5 percent slopes (USDA 2011).

Figure 5.6-3
Soil Series Map

The Novato series consists of deep, very poorly-drained clay alluvium originating from mixed sedimentary and metamorphic rocks. They are found in marshes along the margins of the San Francisco Bay. Urban land refers to soils that have been altered or obscured by urban works and structures. Orthents refers to soils that lack horizon development; and in the case of urban settings are also highly altered materials associated with grading and cut-and-fill activities. The urban land soils are described as well-drained tidal flats, with variable profiles to 40 inches below ground surface and silty clay below that. The Orthents and other soils are described as deep, poorly drained and somewhat poorly drained soils on reclaimed tidal flats. The Botella-Urban land complex comprises Botella and similar soils (45 percent), urban land (30 percent), and other minor components (25 percent). The Botella series consists of very deep, well-drained clay loam soils that formed in alluvial material from sedimentary rocks (USDA 2011).

Expansive Soils

Expansive soils are those that contain significant amounts of clays that expand when wet and can cause damage to foundations if moisture collects beneath structures. According to USDA data, some soils, primarily the Novato series, within the project site area contain significant amounts of clay and may be prone to expansion and shrinkage.

Erosion and Runoff

Erosion is the process by which rocks, soil, and other land materials are abraded or worn away from the earth's surface over time. The rate of erosion depends on many factors, including soil type and geologic parent materials, slope and placement of soils, and human activity. The potential for erosion is highest in loose, unconsolidated soils. The steepness of slopes and absence of vegetation are also factors that increase the natural rates of erosion. Thus, erosion potential is high in steep, non-vegetated areas, especially those disturbed by grading or other construction activities.

The susceptibility of a soil to erosion varies and is a function of its characteristics, such as soil texture, soil structure, topography, amount of vegetative cover, and climate. Erosion from water mainly occurs in loose soils on moderate to steep slopes, particularly during high-intensity storm events (USDA 2018). Because the topography at the project site is flat, erosion potential is low.

Slope Stability

A landslide is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. There is a low probability for landslides in the project area because of the relatively flat (0 to 1 percent slope) topography and distance from hills, mountains, or slopes. According to the California Geologic Survey (CGS) the project area is not located within a landslide hazard area due to the low relief, and there are no landslides mapped within the project area (CGS 2006).

Seismicity

Fault Zones

The Alquist-Priolo Act requires the establishment of "earthquake fault zones" along known active faults in California. A fault is considered active if it has generated earthquakes accompanied by surface rupture during historic time (approximately the last 200 years) or has shown evidence of fault displacement during the Holocene period (approximately the last 11,500 to 12,000 years) (Bryant and Hart 2007). A fault is considered potentially active if there is evidence of fault displacement during the Quaternary period (approximately the last 1.6 million years). A fault is considered inactive if the most recent documented fault displacement pre-dates the Quaternary period (Fraser 2001).

For the purposes of this report, multiple sources were used to identify faults within a distance of 10 miles that may potentially affect the site (Brabb et al. 1998, Brabb et al. 2000, Dibblee and Minch 2007, Jennings and Bryant 2010, USGS 2015, and CGS 2006). **Figure 5.6-2** includes the locations of these fault zones in proximity to the site, based on data from Bryant and Hart (2007).

No known active faults cross the project area or are located in the immediate project vicinity (see **Figure 5.6-2**). The known active faults located within 10 miles of the project area are the San Andreas Fault, located 9 miles southwest and the Hayward Fault located 10 miles northeast, which both exhibit historic surface rupture. Both of these faults are zoned under the Alquist-Priolo Act. The Monte Vista (also known as Monta Vista) fault, which exhibits Holocene displacement and is also considered active, is located approximately 8 miles south of the project area. Potentially active Quaternary faults within 10 miles of the project area are the San Jose fault, which is mapped as extending through the project area; the Palo Alto fault, located approximately 2 miles southwest; and the Stanford fault, located approximately 4 miles southwest (Jennings and Bryant 2010).

San Andreas Fault System. The nearest fault of major historical significance is the San Andreas fault, which passes within a distance of approximately 9 miles of the project area. This active right-lateral, strike-slip fault extends in a northwest-southeast direction to the southwest of the project area. The portion of the San Andreas fault in the project vicinity is referred to as the San Francisco-Mission Santa Clara section. The last known surface rupture of this section occurred in 1838 with a magnitude 7 earthquake that resulted in over 60 kilometers of surface rupture (Jennings and Bryant 2010). The San Andreas fault zone extends from the Gulf of California in Mexico to the Mendocino coast in northern California and accommodates the majority of movement between the Pacific and North American plates. Several active faults along the section of the San Andreas in closest proximity to the project site are not generally considered to be independent seismic sources, but rather to experience movement triggered by seismic events on the San Andreas. Other active, northwest-striking right-lateral faults of the San Andreas fault system associated with historic seismic activity in proximity to the project site include the Calaveras fault, located approximately 15 miles northwest, and the Hayward fault (Jennings and Bryant 2010).

Hayward Fault. The Hayward fault extends parallel to the San Andreas fault from San Jose approximately 74 miles (119 kilometers) northwestward along the base of the East Bay Hills to San Pablo Bay. The Oakland to Warm Springs (Fremont) section last ruptured in 1868 with a magnitude 6.8 earthquake that produced approximately 48 kilometers of surface rupture. Right lateral movement of 90 centimeters and vertical movement of 30 centimeters were recorded (Jennings and Bryant 2010).

The recurrence rate on the Hayward fault is 140 years, indicating it may be due for a large earthquake. A seismic creep occurs along at least 69 kilometers and perhaps the entire fault length, and appears to reduce the magnitude and recurrence time of expected large earthquakes (Lienkaemper et al. 2012). Based on its length, the Hayward fault is estimated to be capable of generating a magnitude 7.5 earthquake. However, many scientists believe it to be connected to the Calaveras fault to the south and the Rodgers Creek and Maacama faults to the north. If that is the case, the longer fault system would be capable of a larger magnitude earthquake (Lienkaemper et al. 2012).

Monte Vista-Shannon Fault System. The Monte Vista fault extends from Woodside southeast along the eastern foothills of the Santa Cruz Mountains, merging with the Shannon fault to extend to Coyote Creek near New Almaden. The Monte Vista-Shannon fault system is a west-dipping oblique reverse fault within the Foothills thrust belt. This series of range front thrust faults generally dip toward the San Andreas fault and merge with it at depth (A3Geo and InfraTerra 2013).

The Loma Prieta earthquake in 1989 caused displacement on a number of faults in the Foothills thrust belt, and an earthquake on the San Andreas could trigger secondary movement on the Monte Vista-Shannon fault system.

San Jose, Palo Alto, and Stanford Faults. The potentially active San Jose, Palo Alto, and Stanford faults show evidence of undifferentiated Quaternary displacement in the last 1.6 million years. They extend parallel to the San Andreas and Hayward faults and are concealed by younger geologic strata. Their locations are inferred. The San Jose fault is mapped in the project area, roughly along the existing power line alignment (**Figure 5.6-2**). Its northern terminus is north of SR 84 and the project site on the west side of the San Francisco Bay margin. It extends southeast through the site area, along the west side of San Jose and ends near Coyote Creek, a distance of approximately 30 miles. The Palo Alto and Stanford faults branch off of the west side of the San Jose fault near San Jose and Mountain View, respectively, and continue toward the northwest (**Figure 5.6-2**). All three are thrust faults, dipping toward the San Andreas.

Earthquake Hazards

Fault Rupture

No known active faults cross the project area or are located in the immediate project vicinity (see **Figure 5.6-2**), therefore there is very minimal potential for fault rupture at the site.

Ground Shaking

The project area is not located within an active fault zone as defined by the Alquist-Priolo Act; however, the San Andreas and Hayward faults are within the Special Studies Zone (Bryant and Hart 2007). The project area is subject to ground shaking from earthquakes generated on the San Andreas and Hayward faults and other faults associated with the Coast Ranges. Shaking from an earthquake can result in structural damage and can trigger other geologic hazards such as liquefaction. Ground shaking is controlled by the earthquake magnitude, duration, and distance from the source. Ground conditions would also influence impacts from strong ground motions. Seismic waves attenuate with distance from their source; so, estimated bedrock accelerations are highest in areas closest to the source. Local soil conditions may amplify or dampen seismic waves as they travel from the underlying bedrock to the ground surface.

The project area is mapped as an area having the highest relative potential for seismic shaking in California, as indicated on the CGS map Earthquake Shaking Potential for the San Francisco Bay Region. Peak ground acceleration (PGA) of 0.54 g, where g represents the gravitational acceleration constant of 32.17 feet per second per second, is estimated for the project area based on underlying alluvium conditions with a 10 percent probability of being exceeded in 50 years. **Table 5.6-1** shows peak ground acceleration values based on firm and soft rock conditions in addition to alluvium. The estimated ground shaking is derived from a statewide probabilistic seismic hazard evaluation that uses attenuation relations relating earthquake shaking with magnitude, distance from the earthquake, and type of fault rupture (CGS 2006).

Table 5.6-1 PEAK GROUND ACCELERATION

Ground Motion	Firm Rock	Soft Rock	Alluvium
Peak ground acceleration (PGA)	0.46 g	0.51 g	0.54 g

Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which saturated, non-cohesive soils, such as sand and silt, temporarily lose their strength and liquefy when subjected to dynamic forces, such as intense and prolonged ground shaking. The vast majority of liquefaction hazards are associated with sandy soils and silty soils of low plasticity. In order to be susceptible to liquefaction, potentially liquefiable soils must be saturated or nearly saturated. In general, liquefaction hazards are most severe in saturated soils within the upper 50 feet of the ground surface. The potential for liquefaction increases with shallower groundwater (USGS 2018).

Liquefaction potential in the project area is very high (USGS 2018). The bay mud that underlies most of the project area and surrounding vicinity consists primarily of silty clay, sand, gravel, peat, and shell fragments. The water table in the project area is very shallow, typically less than 5 feet below ground surface. These factors combine to make the low-lying areas that front the bay particularly susceptible to liquefaction. According to hazard maps published by the CGS, the areas generally within 1.75 miles of the west end of the Dumbarton Bridge, which includes the site area, and areas flanking San Francisquito Creek to the northwest, have been designated as liquefaction hazard zones. This type of seismic hazard zone is further defined as an area where historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicates a potential for permanent ground displacements such that mitigation as defined in Public Resources Code § 2693 subsection (c) would be required (CGS 2006). Based on the data contained in Table 1.3 of the Seismic Hazard Zone Report for the Palo Alto 7.5-minute quadrangle (CGS 2006), all geologic units in the vicinity of the project shown on **Figure 5.6-2** exhibit liquefaction susceptibilities that are either very high or high.

Regulatory Background

Federal

No federal regulations related to geology, soils, and seismicity apply to the project.

State

Alquist-Priolo Earthquake Fault Zoning Act. California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994. Also known as the Alquist-Priolo Act, the State geologist established regulatory zones, called “earthquake fault zones,” around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace, because many active faults are complex and consist of more than one branch. There is the potential for ground surface rupture along any of the branches.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act of 1990 addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The Seismic Hazards Mapping Act states that “it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.”

Engineering and Construction Codes and Standards. Design and construction of the project is governed by ~~a variety of codes and standards. One such code that specifically regulates topics relevant to geology and geotechnical engineering, such as earthwork standards and seismic safety is~~ CPUC GO 95. This general order provides general standards for design and construction of overhead electric transmission and distribution lines.

~~The most recent version of the California Building Code (CBC) (CBC 2016) is another such code. Chapter 18, Section 1803 of the CBC requires a Soils Engineering Report that shall specifically include laboratory test data; associated geotechnical engineering analysis; and a thorough discussion of seismicity, liquefaction, dynamic compaction, compressible soils, corrosive soils, and ground rupture due to faulting. This report would also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present. In accordance with the California Business and Professions Code, the appropriate qualified California licensed individual(s) are required to sign and seal the Soils Engineering Report.~~

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. Current project plans do not require installation of any facilities that would require a building permit; however, if plans were to change during final design of the project, PG&E would obtain a building permit or other required ministerial permits.

5.6.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APM for Geology and Soils as part of the project.

APM GEO-1: Implement Appropriate Design Measures. Based on available references, potentially problematic subsurface conditions such as soft, loose, or liquefiable soils may exist in the project area. PG&E will perform design studies, onsite investigations, and implement appropriate design measures for foundation improvement work that will reduce potential effects of seismic ground failure, including liquefaction.

Other Applicable APMs:

PG&E would prepare and implement a SWPPP (**APM HYD-1**) to prevent construction-related erosion, sediment runoff, and discharge of other pollutants into adjacent waterways and onto neighboring properties. See Section **5.9, Hydrology and Water Quality**, for a full description of **APM HYD-1**.

Because project activities would result in ground disturbance of more than one acre, PG&E would obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (and as amended by 2010-0014-DWQ and 2012-006-DWQ). To obtain coverage under the permit, PG&E would develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, construction drawings, certification by Legally Responsible Person (LRP), contractor contact information, and annual fee—to the State of California's SMARTS database and obtain a WDID number prior to initiating construction activities.

PG&E would implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP would outline implementation of BMPs for

each activity that has the potential to impact neighboring properties or degrade surrounding water quality through erosion, sediment runoff, dewatering, and discharge of other pollutants.

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? Refer to Division of Mines and Geology Special Publication 42.

Construction

NO IMPACT. The project alignment does not cross any faults zoned under the Alquist-Priolo Act, and none of the faults near the project alignment are considered active faults by CGS (see **Figure 5.6-2**). The San Jose fault, which is mapped in the project area, is a Quaternary fault considered to be potentially active. Surface fault rupture is most likely to occur on active faults (i.e., faults showing evidence of displacement within the last 11,500 to 12,000 years). Geologic deposits younger than 11,500 years cover the San Jose fault, and its location is inferred. The project area would not be located in active fault zones, and would not increase the risk of loss, injury, or death from rupture of known earthquake faults. During construction the applicant would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ which would ensure the appropriate design measures and engineering standards are used to accommodate surface fault rupture. Additionally, the project does not risk exacerbating any existing environmental hazards. Nor would it directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault. Therefore, there would be no impacts during construction.

Operation and Maintenance

NO IMPACT. The project location would not change during operation and maintenance activities for the reconductored power line. Therefore, there would be no impact related to known earthquake fault rupture on the site.

Required Mitigation Measures: None.

ii) Strong seismic ground shaking?

Construction

LESS THAN SIGNIFICANT IMPACT. Judging from the activity of major regional seismic sources, it is likely that the project would be exposed to at least one moderate or greater earthquake during its operational life, and that the earthquake would be centered close enough to the project to produce strong ground shaking in the project area.

The nearby San Andreas fault has produced numerous moderate to large earthquakes, including the 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake, and is a significant seismic source for future strong ground shaking within the project area. A PGA of 0.54 g is estimated for the project area based on underlying alluvium conditions. In addition to the San Andreas, other active or potentially active faults that present significant potential for strong ground shaking within the project

area include the Hayward, San Gregorio, and Calaveras faults. Local soil conditions may amplify or dampen seismic waves as they travel from underlying bedrock to the ground surface.

Generally, overhead transmission lines can accommodate strong ground shaking. In fact, wind-loading design requirements for overhead lines are generally more stringent than are those developed to address strong seismic ground shaking. PG&E would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ which would ensure the appropriate design measures and engineering standards are used to accommodate soil hazards that could be exacerbated by strong seismic ground shaking. Therefore, any impacts during construction on people and structures associated with strong seismic ground shaking would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project site would continue to be exposed to potentially strong seismic ground shaking but compliance with applicable design requirements would ensure the risk to loss of life would be less than significant during project operation and maintenance.

Required Mitigation Measures: None**.**

iii) Seismic-related ground failure, including liquefaction?

Construction

LESS THAN SIGNIFICANT IMPACT. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables, and buildings with shallow foundations. Liquefaction can occur in areas characterized by water saturated, cohesionless, granular materials at depths less than 50 feet. Unconsolidated sediments and artificial fills located in the project area and other reclaimed areas along the margin of San Francisco Bay may be subject to liquefaction. The shallow depth to groundwater in the project area increases the potential for liquefaction, because sediments must be saturated for liquefaction to occur. CGS has designated the project area as a Seismic Hazard Zone for very high or high liquefaction potential. During construction the applicant would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ and perform design studies, onsite investigations, and select design measures that would reduce potential impacts on people and structures from seismic ground failure, including liquefaction, to a less than significant level.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project site would continue to be exposed to potentially significant seismic-related ground failure but compliance with applicable design requirements would ensure the risk to loss of life would be less than significant during project operation and maintenance.

Required Mitigation Measures: None**.**

iv) Landslides?

Construction

NO IMPACT. The project area has very low relief (0 to 1 percent slope) and is not situated near hills, mountains, or slopes. There are no landslides mapped within the project area, and due to the low relief, the project area is not located within a landslide hazard area (CGS 2006). Therefore, no construction impacts would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The project site location and topographic conditions would not change, therefore there would be no impacts related to landslides during project operation.

Required Mitigation Measures: None**.**

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

Construction

LESS THAN SIGNIFICANT IMPACT. The potential for increased erosion exists because of surface-disturbing activities associated with project construction. Significant sources of erosion from the project would be disturbance and subsurface material generated during drilling of foundation improvements for existing towers and support of the two new TSP's, and trench excavations for the OPGW conduit at the Ravenswood and Cooley Substations. The planned foundation improvement method would limit generation of spoils. Work areas would either be established by placing protective matting over the ground surface, by mowing existing vegetation, and in some areas by working on paved surfaces wherever they exist. The use of mats and use of existing paved surfaces would reduce the potential for erosion. Erosion potential would also be limited by the scale of construction activities, and because the project site is relatively flat.

Reconductoring and foundation improvements for the project would occur above and below grade, outside the influence of any major drainages, streams, or rivers. The pile caps near the surface at the four existing towers and two new TSP's would encompass about 100 square feet each and would be constructed in areas that have already been disturbed and have minor previously modified and established drainage patterns. Similarly, trenching for the OPGW conduit would occur in previously graded areas in the substation yards. The trench, 12-inches wide by 36-inches deep, would be completed with a backhoe and take approximately one-half day to complete, minimizing the volume of spoil exposed and the exposure time of spoil piles to erosion and the trenches would be backfilled and compacted as soon as they are completed. Pile construction will not involve any surface grading. Likewise, staging areas are relatively flat and would not require significant grading. The work areas would either be established by placing protective matting over the ground surface, by mowing existing vegetation, and/or by working on paved surfaces, which individually and in combination would reduce the potential for erosion and subsequent sedimentation. Overall, erosion potential would be limited by the scale of construction activities, and because the project site is relatively flat. During construction the applicant would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ which would ensure the appropriate design measures and engineering standards are used to ensure impacts from erosion or topsoil loss during construction would be less than significant. The

implementation of **APM HYD-1** and BCDC maintenance permit no. M87-74(A) (see **Section 5.9 Hydrology and Water Quality**) will further reduce any less than significant impacts.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. Although two new TSP's would be added they would not substantially alter the existing drainage pattern of the site or area that would result in substantial erosion on or off-site. Therefore, any impacts during operation and maintenance would be less than significant.

Required Mitigation Measures: None.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction

LESS THAN SIGNIFICANT IMPACT. The project area has very low topographic relief (0 to 1 percent slope), and no mapped landslide hazard areas exist, either within or adjacent to the project alignment. The project area has shallow groundwater and a high potential for liquefaction, but the project would not exacerbate this potential. Rather, the foundation modifications would strengthen the existing tower footings and decrease the effects of unstable soil. During construction the applicant would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ which would ensure the appropriate design measures and engineering standards are used to accommodate problematic soft or loose soils. This would ensure any impacts during construction from these hazards would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The foundation improvements and compliance with applicable design requirements would ensure the towers do not exacerbate unstable soil conditions and any impacts during operation and maintenance would be less than significant.

Required Mitigation Measures: None.

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?

Construction

LESS THAN SIGNIFICANT IMPACT. Soil units along the alignment primarily consist of clay and silt, with lesser amounts of sand. There is a potential for encountering expansive soils along most of the project alignment. Expansive soils expand during periods of heavy rainfall and contract when moisture evaporates; the resulting volume changes in the soil can result in damage to foundations. Foundation work at the new towers would consist of 80- to 100-foot-deep piles that extend below the potential zone of influence of expansive soils. During construction the applicant would comply with CPUC GO 95~~, CBC 2016, and related applicable codes~~ which would ensure the appropriate design measures and

engineering standards are used to accommodate any problematic expansive soils which would ensure any impacts during construction from these hazards would be less than significant.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. The foundation improvements and compliance with applicable design requirements would ensure expansive soils present a less than significant risk of impacts during project operation and maintenance.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. The project does not include a waste disposal system. Therefore, no construction impacts would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No operation and maintenance impacts would occur.

Required Mitigation Measures: None.

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5.7 Greenhouse Gas Emissions

GREENHOUSE GAS EMISSIONS Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.7.1 Setting

Introduction

Gases that trap heat in the atmosphere are called GHGs. The principal GHGs that contribute to global warming and climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), black carbon (BC), and fluorinated gases (F-gases): hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The anthropogenic GHGs that are emitted in the greatest quantities are CO_2 and CH_4. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills.

Each GHG has its own potency and effect upon the earth's energy balance, expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1. Specifically, the GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. The larger the GWP, the more that a given gas warms the earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years.

For example, CH_4 has a GWP of 28 over 100 years from the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC 2013), which means that it has a global warming effect 28 times greater than CO_2 on an equal-mass basis. The F-gases are sometimes called high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO_2. The GWPs for these gases can be in the thousands or tens of thousands. The carbon dioxide equivalent (CO_2e) for a source is obtained by multiplying each GHG by its GWP and then adding the results together to obtain a single, combined emission rate representing all GHGs in terms of CO_2e.

An expanding body of scientific research supports the theory that global climate change is currently affecting weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by global climate change. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes, and drought; and increased levels of air pollution.

Environmental Setting

California is a substantial contributor to global GHG emissions. The total gross California GHG emissions in 2015 were 440.4 million metric tons (MMT) of CO_2e (ARB 2017a). The largest source of GHG emissions

in California is transportation, followed by industrial activities, electricity generation in state and out of state.

The project would be located within the jurisdiction of the BAAQMD. The BAAQMD employs a variety of technical tools and methods to analyze Bay Area GHG emissions and concentrations. In November 2006, the BAAQMD became the first air district in the nation to develop a detailed GHG emissions inventory. The BAAQMD also recently established a network of monitors to measure and characterize ambient concentration of CO_2 and other GHGs in the Bay Area.

Table 5.7-1 shows the Bay Area GHG emissions expressed in CO_2e (i.e., with each pollutant weighted by GWP) by source category for 2015, which is the most recently available inventory (BAAQMD 2017a). The GHG emission inventory includes GHG emissions due to human activities in the BAAQMD. The total GHG emissions in the Bay Area in 2015 were 86.5 $MMTCO_2e$, including BC. Diesel engines and wood burning are key sources of BC in the Bay Area (BAAQMD 2017a).

Table 5.7-1 shows a breakdown of the Bay Area GHG emissions by economic sectors: transportation, energy (electricity/co-generation), buildings, stationary sources, waste management, fluorinated gases, and agriculture. GHG emissions from the energy sector include all electric generation within the Bay Area as well as electricity imported into the region (BAAQMD 2017a).

Combustion of fossil fuels in the transportation sector was the largest source of the Bay Area's GHG emissions in 2015, followed by the stationary sources. The four largest sectors—transportation, stationary sources, energy and buildings—collectively account for 91 percent of the total inventory. The five Bay Area oil refineries account for 70 percent of GHG emissions from stationary sources. The other major stationary source of GHG emissions in the Bay Area is non-energy natural gas combustion (22 percent [BAAQMD 2017a]).

Regulatory Background

Federal

In April 2007, the US Supreme Court held that GHG emissions are pollutants within the meaning of the CAA. In reaching its decision, the Court also acknowledged that climate change results, in part, from anthropogenic causes (Massachusetts et al. v. Environmental Protection Agency 549 U.S. 497, 2007). The Supreme Court's ruling paved the way for the regulation of GHG emissions by the US EPA under the CAA.

In response to this Supreme Court decision, on December 7, 2009, the US EPA Administrator signed two distinct findings regarding GHGs under the CAA, Section 202(a):

- Endangerment Finding: That the current and projected concentrations of the GHGs in the atmosphere threaten the public health and welfare of current and future generations; and
- Cause or Contribute Finding: That the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

In 2009, the US EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from large sources and suppliers in the United States. This rule requires suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light-duty sector, and facilities that emit more than 25,000 $MTCO_2e$ per year to submit annual reports to the US EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

TABLE 5.7-1 2015 GHG EMISSIONS IN THE BAAQMD (IN 100-YR GWP CO_2 EQUIVALENT METRIC TONS PER YEAR)

SOURCE CATEGORY	CO_2e (CH_4, N_2O, HFC/PFC, SF_6)	BC (CO_2e)	Total Emissions by Source (CO_2e)
TRANSPORTATION	34,630,000	790,000	35,420,000
On-Road	30,420,000	330,000	30,750,000
Off-Road	4,210,000	460,000	4,670,000
ELECTRICITY/CO-GENERATION	12,110,000	130,000	12,240,000
Co-Generation	5,790,000	90,000	5,880,000
Electricity Generation	5,040,000	40,000	5,080,000
Electricity Imports	1,280,000	-	1,280,000
BUILDINGS	8,880,000	390,000	9,270,000
Residential Fuel Usage	5,240,000	210,000	5,450,000
Commercial Fuel Usage	3,640,000	180,000	3,820,000
STATIONARY SOURCES	22,020,000	340,000	22,360,000
Oil Refineries	15,470,000	210,000	15,680,000
Natural Gas Combustion	4,870,000	110,000	4,980,000
Natural Gas Distribution*	460,000	-	460,000
Cement Manufacturing	990,000	-	990,000
Fugitive and Process Emissions*	230,000	20,000	250,000
WASTE MANAGEMENT	2,280,000	20,000	2,300,000
Landfills*	1,830,000	20,000	1,850,000
Composting/POTWs*	450,000	-	450,000
FLUORINATED GASES	3,560,000	-	3,560,000
HFCs and PFCs (Com., indus., Transp.)*	3,470,000	-	3,470,000
SF_6 (electricity Prod. and Semiconductor Mfg.)*	90,000	-	90,000
AGRICULTURE	1,220,000	170,000	1,390,000
Animal Waste*	740,000	20,000	760,000
Soil Management	280,000	-	280,000
Agricultural Equipment	190,000	40,000	230,000
Biomass Burning	10,000	110,000	120,000
TOTAL EMISSIONS (CO_2e)	84,700,000	1,840,000	86,540,000

Source: BAAQMD 2017a
Note: *Significant source of super-GHGs, which refers to the GHGs with very high GWPs, such as CH_4, BC, and F-gases.

Historically, the US EPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements apply to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year.

However, the Supreme Court decision in Utility Air Regulatory Group v. US EPA et al. (Supreme Court Case 12-1146) found that the US EPA does not have the authority to require PSD and Title V permitting for facilities based solely on GHG emissions. Additionally, the Supreme Court found that the US EPA can regulate GHG emissions from sources which are already subject to PSD and Title V requirements due to emissions of other pollutants.

The project would not be impacted by these regulations.

State

Executive Order (EO) S-3-05, issued in 2005, established GHG emissions reduction targets for the state of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The California EPA secretary is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006, or AB 32, which provides the framework for regulating GHG emissions in California. This law requires the ARB 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.

Part of ARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. ARB first approved the AB 32 Scoping Plan in 2008 and released its first update in 2014. The scoping plan includes a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program. In December 2007, ARB set the statewide 2020 emissions limit at 427 $MMTCO_2e$. The May 2014 First Update to the Climate Change Scoping Plan adjusted the statewide 2020 emissions limit to 431 $MMTCO_2e$ (ARB 2014).

In 2006, the CPUC and California Energy Commission established requirements for the utilities under the Senate Bill (SB) 1368[3] (Stats. 2006), which requires that generation and contracts be subject to a GHG Environmental Performance Standard (EPS) of 1,100 pounds (or 0.5 metric tons) of CO_2 per megawatt-hour (MWh) of electricity produced. The EPS applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or longer, including contracts with power plants located outside of California.[4]

On April 29, 2015, Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to achieve the previously-stated goal of an 80 percent GHG reduction by 2050. On September 8, 2016, SB 32, codified as Section 38566 of the Health and Safety Code, was enacted. It extends California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030. In response, ARB updated the AB 32 Scoping Plan in November 2017 to establish a path that will get California to its 2030 target (ARB 2017c).

In January 2012, ARB approved a new emissions-control program for vehicles of model years 2017 through 2025. The program combines the control of smog, soot, and GHG into a single package of standards

3 Public Utilities Code § 8340 et seq.

4 See Rule at http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm

referred to as the Advanced Clean Cars program (Cal. Code Regs., tit. 13, §§ 1962.1, 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles. The Advanced Clean Cars Program also includes amendments to the low emission vehicle (LEV) amendments (referred to as the LEV III regulations; Cal. Code Regs., tit. 13, § 1900 et seq.), a zero emission vehicle (ZEV) regulation, and a regulation referred to as the Clean Fuels Outlet Regulation.

In May 2016, ARB prepared the Mobile Source Strategy, which addresses the current and proposed programs for reducing all mobile source emissions including GHG emissions. The Mobile Source Strategy identifies programs that the state and federal government have or will adopt, which further the goals of the Scoping Plan. Some programs provide incentives to facilitate increased purchase of new, lower emission light-, medium-, and heavy-duty vehicles to aid the state in achieving emission reduction goals. Other programs such as the On-Road, Low-NOx and Zero-Emission Technology Program require vehicle manufacturers to offer engines that reduce NOx emissions 90 percent from current levels. This will have a co-benefit for reducing GHG emissions depending on how this goal is met (ARB 2016). These programs calling for more stringent emissions limits are required by state and federal law and monitored by ARB or US EPA.

In 2002, California initially established its Renewables Portfolio Standard (RPS), with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the AB 32 Scoping Plan. In April 2011, SB 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent RPS by December 31, 2020, to all retail sellers of electricity and establishes renewable energy standards for interim years prior to 2020. On October 7, 2015, SB 350 was signed into law, establishing new clean energy, clean air and greenhouse gas reduction goals for 2030 and beyond. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.

A Regulation for Reducing SF_6 Emissions from Gas Insulated Switchgear was implemented as part of AB 32, mandating utility-wide reduction of SF_6 emissions to a 1 percent leak rate by 2020 (Calif. Code of Regs., tit. 17, §§ 95350 to 95359). In amendments to these sections dated November 16, 2017, ARB proposes to phase out using SF_6 in switchgear effective January 1, 2025 with formal rule-making to occur in the fall of 2018 (ARB 2017b).

SB 1383 of 2016 (Stats. of 2016) sets forth legislative direction for control of short lived climate pollutants (SLCP). It requires ARB, no later than January 1, 2018, to approve and begin implementing its SLCP strategy to achieve the following reductions in emissions by 2030 compared to 2013 levels: methane by 40 percent, hydrofluorocarbons by 40 percent, and black carbon (non-forest) by 50 percent.

Regional

The BAAQMD adopted the 2017 Bay Area CAP on April 19, 2017 (BAAQMD 2017a). The 2017 CAP provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the BAAQMD will continue its progress toward attaining all state and federal ambient air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHGs reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

BAAQMD publishes CEQA guidelines (updated May 2017 [BAAQMD 2017b]) to assist lead agencies in evaluating a project's impacts on air quality. The CEQA Guidelines document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction of the project, the project is not subject to local (i.e., city and county) discretionary regulations affecting GHG emissions.

5.7.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APM for GHG Emissions as part of the project to minimize or avoid GHG impacts during construction:

APM GHG-1: Minimize GHG Emissions

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
- Maintain construction equipment in proper working conditions in accordance with PG&E standards.

The operation and maintenance activities required for the reconductored power line would not change from those currently required for the existing line. Therefore, no operation-related impacts from the project would occur and no GHG APMs are proposed by PG&E.

Methodology

Refer to **Section 5.3, Air Quality** for a full description of the methodology. More detailed emissions calculations can be found in **Appendix B**.

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

BAAQMD published the 2017 CEQA Air Quality Guidelines (BAAQMD 2017b), which include thresholds for operational-related GHG emissions. The thresholds of significance for operational-related GHG emissions are: 1,100 metric tons per year (MT/yr) of CO_2e for land use development projects and 10,000 MT/yr of CO_2e for stationary-source projects.

Because construction emissions would cease once construction is complete, they are considered short-term. The BAAQMD CEQA Guidelines do not identify a GHG emissions significance threshold for construction-related emissions, instead, BAAQMD recommends that GHG emissions from construction be quantified and disclosed. The BAAQMD further recommends incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable. BMPs may include use of alternative-fueled (e.g., biodiesel, electric) construction vehicles and equipment for at least 15 percent of the fleet, use of at least 10 percent of local building materials, and recycling or reusing at least 50 percent of construction waste or demolition materials.

Construction and Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Construction of the project would generate GHG emissions over the four-month (September-December 2020) construction period. Construction-related emissions would result from off-road construction equipment and machinery, helicopter activity, and from vehicular traffic generated by commuting workers and material hauling. Following project completion, all construction emissions would cease.

Table 5.7-2 shows the estimated GHG emissions associated with construction activities of the project. As described in **Table 5.7-2**, the project construction activities would generate about 105 $MTCO_2e$ of emissions. These emissions amortized over an assumed project life of 30 years equal approximately 3.5 $MTCO_2e$ per year.[5] The project would require no change to PG&E's existing operation and maintenance activities, and would result in no net change in long-term vehicle or equipment exhaust emissions. No new operational GHG emissions would be emitted. The annual GHG emissions are substantially less than the operational significance threshold of 10,000 $MTCO_2e$ per year for stationary sources or 1,100 $MTCO_2e$ per year for land use development projects; these thresholds are applied here because there is no BAAQMD quantitative threshold for construction GHG emissions. PG&E would implement **APM GHG-1** to further minimize GHG emissions during construction. **APM GHG-1** is consistent with current BAAQMD CEQA guidelines, which require use of BMPs. Therefore, the GHG emissions impact from construction and operation of the project would be less than significant.

[5] Amortization of construction GHG emissions over the project life, e.g., 30 years is a reasonable approach to analyzing the significance of short-term construction emissions. See, e.g., SCAQMD 2008.

Table 5.7-2 ESTIMATED CONSTRUCTION GREENHOUSE GAS EMISSIONS

GHG Emissions by Phase [a]	CO_2 Equivalent Emissions ($MTCO_2e$) [b]
Staging Area – Receiving, Distribution	9
Work Area Establishment and Removal	9
Foundation Work	21
Guard Structures	1
Conductor Installation	22
Right-of-Way Cleanup	0.2
Worker Trips	15
Helicopter Operations	28
Total GHG Emissions	105
Amortized Construction Emissions (30-year period [$MTCO_2e$/yr])	3.5

Sources: PGE 2018b and the CPUC analysis of the revised construction activities in the May 11, 2018 revised project description (PGE 2018e)
Notes: [a] The emissions from the vehicle trips during the Tower Modification phase were conservatively accounted for in the CalEEMod emission estimates for the Guard Structures phase.
[b] The CPUC noticed that: 1) to calculate the CO_2e emissions from construction equipment, PG&E used CalEEMod (version 2016.3.1), which used the GWPs over 100 years (25 for CH_4 and 298 for N_2O) from the IPCC Fourth Assessment Report (IPCC 2007); and 2) to calculate the CO_2e emissions from the helicopter operations, PG&E used the GWPs (21 for CH_4 and 310 for N_2O) from the IPCC Second Assessment Report (IPCC 1995). The CPUC considered the GWPs (28 for CH_4 and 265 for N_2O) from the most recent IPCC document (IPCC 2013) to re-calculate the CO_2e emissions. However, the total CO_2e emissions would decrease about 0.01 MT from the value shown above (105 $MTCO_2e$). Therefore, even though the GWPs used for the project are outdated and inconsistent, the total GHG emissions estimates shown in the table above are still slightly more conservative than those using the most updated GWPs. The CPUC does not believe there is need to update the GHG emissions estimates using the most updated GWPs from the IPCC 2013 document.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. The project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The project's minimal short-term construction GHG emissions would not interfere with the state's ability to achieve long-term goals of AB 32, SB 32, or EO S-3-05.

The vehicles used during construction of the project are required to comply with the applicable GHG reduction programs for mobile sources. The project would conform to relevant programs and recommended actions detailed in the AB 32 Scoping Plan, Mobile Source Strategy, and 2017 Scoping Plan Update. Similarly, the project would not conflict with regulations adopted to achieve the goals of the Scoping Plans. Also, the project would not conflict with the BAAQMD 2017 CAP because GHG emissions would be below the BAAQMD operational significance thresholds for GHGs.

No impact would occur because the project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions.

Operation and Maintenance

NO IMPACT. The project would require no change to PG&E's existing operation and maintenance activities. Emissions generated by equipment and vehicles during operation and maintenance of the

project would not be greater. PG&E would need to comply with the Scoping Plan SF_6 reduction and phase out regulation (if adopted) with or without the project. No impact from the project would occur.

Required Mitigation Measures: None.

5.7.3 References

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ARB 2017a – California Air Resources Board (ARB). California Greenhouse Gas Emission Inventory – 2017 Edition, June 2017, https://www.arb.ca.gov/cc/inventory/data/data.htm, Accessed March 2018.

ARB 2017b – California Air Resources Board (ARB). Sulfur Hexafluoride (SF_6) Emission Reductions from Gas Insulated Switchgear, https://www.arb.ca.gov/cc/sf6elec/sf6elec.htm, dated November 16, 2017, Accessed April 2018.

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PGE 2018b – Pacific Gas & Electric Company (PGE). Responses to Data Requests, Set No. 1, dated 2/14/2018. March 13, 2018.

http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/Data%20Deficiency/Responses/RCL_CPUC%20Data%20Request%20No.1_PGE%20Response_031318.pdf

PGE 2018e – Pacific Gas & Electric Company (PGE). Project Description Refinement. May 11, 2018. http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/PDFs/Project%20Description%20Refinements_PGE_rev_051118.pdf

SCAQMD 2008 – South Coast Air Quality Management District (SCAQMD). Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-9.

5.8 Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

Environmental criteria established by CEQA Guidelines, Appendix G.

5.8.1 Setting

Hazardous Waste and Substances Sites

PG&E hired Environmental Data Resources, Inc. (EDR) to conduct a database analysis to determine the location of hazardous wastes and hazardous material release sites within 0.25 mile of the project. EDR's analysis involved searches of 117 databases prepared by local, state, federal, and tribal agencies, in addition to EDR's proprietary database, related to the generation, storage, handling, transportation, and treatment of wastes and the remediation of contaminated soil and groundwater sites. The EDR search was augmented by searches of the SWRCB's GeoTracker database and the California Department of Toxic Substance Control's (DTSC) EnviroStor database. The search revealed that several open contaminated sites were located within 0.25-mile of the project as summarized in **Table 5.8-1**. Most of the found sites are listed in multiple databases. Detailed descriptive information of the databases searched may be found in the EDR report (EDR 2017).

TABLE 5.8-1 ACTIVE CONTAMINATION SITES

Site	Address	Distance and Direction from Project	Primary Contaminants and Impacted Media	Cleanup Status	Listing Databases
1990 Bay Road Site (formerly Rhone-Poulenc) StarLink Logistics, Inc.	1990 Bay Road and surrounding areas, East Palo Alto	Within Tower 9 work area and staging area SA4	Arsenic and other metals in soil; arsenic in groundwater	Open – remediation, verification monitoring, and land use restrictions	CALENVIROSTOR
Romic Environmental Technologies/Bay Road Holdings	2081 Bay Road, East Palo Alto	Approximately 0.1 mile north of Tower 9	Arsenic in soil; trichloroethene in groundwater	Open – remediation and verification monitoring; RCRA cleanup site	FTTS INSP ICIS
264 Tara	264 Tara Road, East Palo Alto	Approximately 0.12 mile southwest of Tower 7	Petroleum hydrocarbons and additives in soil and groundwater	Open – site assessment and land use restrictions	CA SLIC CA DEED SWRCB
TWC TARA LLC	151 Tara Road, East Palo Alto	Approximately 0.12 mile northwest of Cooley Landing Substation	Petroleum hydrocarbons and lead in soil	Open – land use restrictions, including Soil Management Plan	CA NPDES CA SLIC CA DEED SWRCB
Pulgas and Bay	1950 Bay & 2470 Pulgas Road East Palo Alto	Approximately 0.12 mile west of Cooley Landing Substation	Petroleum hydrocarbons, lead, and trichloroethene in soil and groundwater	Open – land use restrictions; 2016 closure request	CA SLIC CA DEED
Rhone Poulenc South of Weeks (associated with 1990 Bay Road site)	1200 Weeks Road, East Palo Alto	Approximately 0.25 mile south of Cooley Landing Substation	Arsenic and organochlorine pesticides in soil	Open – verification monitoring	CA SLIC
Cooley Landing / Ravenswood Area	2100 Bay Road East Palo Alto	Approximately 0.22 mile east of Tower 8	Arsenic, polychlorinated biphenyls, polynuclear aromatic hydrocarbons (PAHs), petroleum hydrocarbons	Open – ongoing cap maintenance	CA RGA LF RCRA-SQG FINDS CA SWF/LF CA NPDES CA SLIC CA HAZNET ECHO

The EDR report and information obtained from GeoTracker and EviroStor indicated that soil and groundwater contamination exists at the 1990 Bay Road Site upon which the project's Staging Area 4 and Tower 9 Work Area would be located.

The 1990 Bay Road Site (former Rhone-Poulenc facility) and nearby land is currently owned by StarLink Logistics, Inc. Agricultural chemicals were created at a facility formerly located at 1990 Bay Road in East Palo Alto. There was soil and groundwater pollution at both the facility and adjoining properties. While arsenic is the primary contaminant, other metals, including cadmium, lead, zinc, mercury, and selenium, have been found in higher concentrations as well. The site is approximately 23 acres and includes the 4.9-acre 1990 Bay Road property; partly-developed commercial properties to the north, south, and west;

residential and mixed-use properties to the south; and, a portion of the PG&E pole yard west of Cooley Landing Substation. The pole yard is the proposed Staging Area 4. The nontidal upland and marsh property east and south of Cooley Landing Substation, which includes the Tower 9 work area. Site investigation and cleanup activities have been ongoing since the early 1980s and are continuing pursuant to the San Francisco Bay Regional Water Quality Control Board Order No. R2-2016-0037 (RWQCB 2016). Following removal and treatment of arsenic-impacted soils, an asphalt cap was constructed on the PG&E pole yard property in 1993, and a geosynthetic clay liner cap was installed on the nontidal marsh property east and south of Cooley Landing Substation in 1999. The San Francisco Bay RWQCB Order requires implementation of a site management plan (SMP) for all soil disturbances within the site, and adherence to a Covenant and Environmental Restriction on Property deed restriction on record with the County of San Mateo (RWQCB 2016). The deed restriction applies to subsurface work within the specified property boundaries and requires notification of the San Francisco Bay RWQCB prior to any subsurface work within the site.

The San Francisco Bay RWQCB-required SMP for the site requires that any contaminated soil brought to the surface is managed in accordance with the SMP, in addition to applicable local, state, and federal laws (RWQCB 2016). The SMP also includes requirements for notification of local agencies, implementation of dust control measures, sampling and analysis of soil and water removed from excavations, and provisions for reuse and disposal of excavation materials (PGE2017a). No other sites in the project area overlap with, or are closer than, 0.1-mile to any planned project work areas, making it unlikely that their contamination would be encountered. While contaminated soil or groundwater migration from these sites could be encountered during ground disturbance at project work areas, the implementation of **APMs HAZ-1, HAZ-2,** and **HAZ-3** would ensure that the proper procedures are in place to protect the workers from hazardous materials and that any contaminated soil or groundwater would be contained, analyzed, and disposed of in compliance with local, state, and federal requirements.

Airports

The Palo Alto Airport, a public airport, is located within 2 miles of the project. Towers 4 through 9 are subject to the FAA Regulations Part 77 imaginary surfaces for height restrictions mapped in the Comprehensive Land Use Plan (CLUP 2016) for the Palo Alto Airport. The proposed heights for all the modified towers in the project area are less than the Federal Aviation Regulations Part 77 height restrictions.

The Cooley Landing substation and towers 8 and 9 are also located within the northern extent the Traffic Pattern Zone shown on the Airport Safety Zone in the Comprehensive Land Use Plan for the Palo Alto Airport. The Traffic Pattern Zone is the portion of the airport area routinely overflown by aircraft operating in the airport traffic pattern.

Schools

There are no schools located within 0.25-mile of the project site. The closest school, East Palo Alto Charter School, is located approximately 0.5-mile southwest of the project site.

Emergency Evacuation Routes

The San Mateo County Hazard Mitigation Plan (TetraTech 2016) identifies hazards and provides a risk assessment for all the potential natural hazards that could impact the county. The plan does not identify any specific evacuation routes that would be impacted by the project.

Wildfire Hazards

The California Department of Forestry and Fire Protection (CAL FIRE) identifies and maps areas of significant fire hazards based on fuels, terrain, and other relevant factors. CAL FIRE maps indicate that the project area and vicinity are within an incorporated Local Responsibility Area (LRA) within which the local government is responsible for wildland fire protection. Within the LRA, the project work areas have not been rated by CAL FIRE, indicating that they have less than moderate susceptibility to wildland fires (CALFIRE 2018).

Regulatory Background

Hazardous substances are defined by federal and state regulations that aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), and also in Title 22, California Code of Regulations, Section 66261, which provides the following definition:

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered to be a hazardous waste if it exceeded specific Title 22, California Code of Regulations criteria or criteria defined in CERCLA or other relevant federal regulations. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials occurs; it may also be required if certain other activities occur. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal

Resource Conservation and Recovery Act. The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act.

Comprehensive Environmental Response, Compensation, and Liability Act. The federal Comprehensive Environmental Response, Compensation, And Liability Act (CERCLA), including the Superfund program, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous

substances, pollutants, and/or contaminants. The National Contingency Plan also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Department of Transportation. The United States Department of Transportation is the primary federal agency responsible for regulating the proper handling and storage of hazardous materials during transportation (Code Fed. Regs., tit. 49 §§ 171-177 and 350-399).

State

California EPA. The California EPA was created in 1991, which unified California's environmental authority in a single cabinet-level agency and brought ARB, SWRCB, RWQCBs, Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation under one agency. These agencies were placed within the California EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

The California Hazardous Waste Control Law. The California Hazardous Waste Control Law (HWCL) is administered by California EPA to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California program, both the state and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Department of Toxic Substances Control. DTSC is a department within California EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

San Francisco Bay Conservation and Development Commission. The BCDC was established by the California legislature as a result of the McAteer-Petris Act passed in 1965. The BCDC is a management and regulatory agency for the San Francisco Bay, the Bay's shoreline, and the Suisun Marsh. Jurisdiction of the BCDC covers a 100-foot-wide band along the shoreline of the Bay. Shoreline projects that have the potential to impact plant habitat or water quality in the Bay or certain tributaries, salt ponds, or managed wetlands, as well as the Suisun Marsh require coverage under BCDC maintenance permit no. M87-74(A). The purpose of the permit is to ensure that project activities would not result in water quality or habitat impact to the BCDC jurisdictional waters and habitats. Detailed discussion and analysis of the permit is included in **Section 5.4, Biological Resources**.

California Occupational Safety and Health Administration*.* The California Occupational Safety and Health Administration OSHA) is the primary agency responsible for worker safety related to the handling and use of chemicals in the workplace. California OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Cal. Code Regs., tit. 8, §§ 337-340). The regulations specify requirements for

employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

Department of California Highway Patrol. Department of California Highway Patrol is the primary agency responsible for enforcing the regulations related to the transport of hazardous materials on California roads and highway (Cal. Code Regs., tit. 13, §§ 1160-1167).

CPUC General Order 95: Rules for Overhead Electric Line Construction. CPUC GO 95, Section 35, covers all aspects of design, construction, operation, and maintenance of overhead electrical lines and safety hazards, the application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

5.8.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APMs for hazards and hazardous materials as part of the project.

APM HAZ-1: Hazardous Substance Control and Emergency Response. PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. 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 through operation. 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 on-site. If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Safety Data Sheets will be maintained and kept available on-site, as applicable.

Potential soil and groundwater contamination was identified within the vicinity of project work areas. Soils or groundwater removed during drilling or other activities will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or 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 hazardous wastes 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 at that location and contacting the Fire Department and Environmental Health Division immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the agencies.

PG&E will complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.

APM HAZ-2: Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE). PG&E will provide this environmental awareness program to staff prior to construction. This program will include the following components related to hazards and hazardous materials:

- PG&E Health, Safety, and Environmental expectations and management structure.
- Applicable regulations.
- Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.
- Summary of the primary workplace hazards to which workers may be exposed.
- Overview of the measures identified in **APM HAZ-1.**
- Overview of the controls identified in the SWPPP under **APM HYD-1.**

APM HAZ-3: Adherence to Applicable Site-specific SMPs. In addition to following its own project-specific procedures during the construction phase, PG&E will adhere to any applicable site-specific plans such as the Site Management Plan (SMP) for the 1990 Bay Road Site (see Section 3.8.3.3[3]).

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

Construction

LESS THAN SIGNIFICANT IMPACT. Hazardous materials would be used during construction and operation of the project. Construction of the project would involve the limited use of hazardous materials such as gasoline, diesel fuel, motor oil, transmission fluids, hydraulic fluids and lubricants, paints, solvents, adhesives and cleaning chemicals. When not in use, any hazardous material would be stored in designated construction staging areas in compliance with local, state, and federal requirements. The volume of stored materials located in the staging areas would be small. There would not be any above ground storage tanks or 55-gallon drums of material at the staging areas. The maintenance and servicing of construction vehicles would occur offsite. Transportation of hazardous materials would be conducted in compliance with Department of Transportation and California Highway Patrol requirements.

The routine use of hazardous materials could result in an accidental spill, which could pose a significant impact to the public. However, the implementation of **APM HAZ-1** and **HAZ-2** would ensure that the proper procedures are in place to protect the workers from hazardous materials and to mitigate any spill that might occur during construction. Additionally, **APM HAZ-1** would require that construction workers are trained in the safe handling of hazardous materials before the start of any construction activity.

Approximately 100 feet of OPGW conduit would be installed in a trench at the Ravenswood and Cooley Substations, which would produce some temporary spoils. Similarly, temporary stub pole placements would produce some temporary spoils. While pile placements for would occur at four of the work areas, they would be compaction piles that displace their volume laterally in the soil, and would not produce spoils of potentially contaminated soil needing safe disposal. Any groundwater pumped from trenching, pole or pile setting activities would be contained, analyzed, and disposed of

[3] Section 3.8.3.3 pf the PEA.

in accordance with **APM-HAZ-3.** Per **APM HAZ-3**, in addition to following its own project-specific procedures during the construction phase, PG&E is required to adhere to any applicable site-specific plans such as the SMP for the 1990 Bay Road Site. With the implementation of **APMs HAZ-1 HAZ-2**, and **HAZ-3,** public and environmental impacts associated with the routine transport, use or disposal of hazardous materials would be less than significant.

Operation and Maintenance

NO IMPACT. Any routine transport, use, or disposal of hazardous materials for the reconductored power lines would be the same as for the existing power lines. There would be no impact.

Required Mitigation Measures: None.

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?

Construction

LESS THAN SIGNIFICANT IMPACT. As described under the discussion for impact criterion (a), project construction would require the limited use of hazardous materials, such as fuels, lubricants, and solvents. The storage and use of hazardous materials during construction could result in the accidental release of small quantities of hazardous materials typically associated with minor spills or leaks. Spills and leaks could degrade soil, groundwater and surface water quality.

As discussed in impact criterion (a), hazardous materials would be stored, handled, and used in accordance with applicable regulations. The impact could be significant if proper procedures are not followed to contain and clean up leaks or spills of hazardous materials. The implementation of **APMs HAZ-1, HAZ-2,** and **HAZ-3** would provide personnel with instructions on health and safety precautions and procedures to follow in the event of a release of hazardous materials. All equipment and materials storage must be routinely inspected for leaks. Records must be maintained for documenting compliance with the storage and handling of hazardous materials.

For the above reasons and with implementation of **APMs HAZ-1, HAZ-2,** and **HAZ-3** the project impacts would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power lines would be the same as the ones for the existing power lines. There would be no impact.

Required Mitigation Measures: None.

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?

Construction

NO IMPACT. There are no schools located within a quarter mile of the project work and therefore, there would be no impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power lines would be the same as the ones for the existing power lines. There would be no impact.

Required Mitigation Measures: None.

d. Would the project be located on a site that 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?

Construction

LESS THAN SIGNIFICANT IMPACT. According to the EDR report and review of the Envirostor and GeoTracker databases, the Staging Area 4 and the Tower 9 work area are located on the StarLink Logistics Inc., 1990 Bay road site. This site is listed on the hazardous materials sites compiled pursuant to Government Code Section 65962.5. Arsenic and other heavy metals are present in the soil and groundwater. The site is considered open by the San Francisco Bay RWQCB and has a deed restriction and implementation of an SMP for activities that include excavation of the subsurface soil.

Ground disturbing activities associated with construction of the project would have the potential to encounter contaminated soil and groundwater associated with the 1990 Bay Road site. The foundation work at Tower 9 would include the installation of two Tubex soil displacement piles. The use of the Tubex soil displacement method allows the installation of the rebar cages needed for reinforcing the tower without any spoils being produced. The process would start with a 16-inch diameter pile, going to a depth of 80 to 100 feet, using a track mounted drill rig. The steel casing is pushed by the drill rig and grout is injected into the void created by the pile casing as the drill progresses. Utilizing the following pile installation method would limit the potential for the project to encounter any contaminated soil. The installation of wood pole guard structures and snub poles would require auguring to a depth of 5 to 7 feet. The auguring could encounter contaminated soil from the above listed site resulting in a potentially significant impact. However, **APM HAZ-1** would require soils or groundwater removed during auguring or other activities to be tested, and if contaminated above hazardous waste levels, to be contained and disposed of at a licensed waste facility. **APM HAZ-2** would require the proper worker safety procedures for identifying and handling contaminated soil and **APM HAZ-3** would require adherence to the 1990 site SMP imposed by the San Francisco Bay RWQCB. Additionally, where BCDC has jurisdiction, the project's BCDC permit requirements would further ensure the project activities would not cause unmitigated adverse impacts to the water quality of San Francisco Bay. With the implementation of **APMs HAZ-1**, **HAZ-2,** and **HAZ-3,** the impact of construction of the project would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities would not involve excavation activities and would therefore have no impact.

Required Mitigation Measures: None.

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?

Construction

LESS THAN SIGNIFICANT IMPACT. The closest airport is the Palo Alto Airport, which is located approximately 0.8 mile southeast of the southern end of the project. There are parts of the project that fall into the existing Comprehensive Land Use Plan Safety Zones for the Palo Alto airport. PG&E has submitted the required Notice of Proposed Construction and Alteration Application for all nine towers. The project has received a Determination of No Hazard to Air Navigation from the FAA (FAA 2018).

Helicopter flight paths would generally be limited to the existing power line right of way and project specific landing zones. Helicopter use would be in accordance with all applicable federal, state, and local aviation rules and regulations. Accordingly, the project would not result in a safety hazard for people working or residing in the area and would have a less than significant impact.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities would not require additional aerial inspections beyond those conducted under existing conditions and would have a less than significant impact to people working or residing in the area.

Required Mitigation Measures: None.

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?

Construction

NO IMPACT. There are no private airstrips near the project site. Therefore, no impact from the construction of the project would occur.

Operation and Maintenance

NO IMPACT. There are no private airstrips near the project site. Therefore, no impact from the operation or maintenance of the project would occur.

Required Mitigation Measures: None.

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

Construction

LESS THAN SIGNIFICANT IMPACT. The review of the San Mateo County Hazard Mitigation Plan and the Menlo Park Emergency Operations Plan revealed no specific mapping or delineation of emergency evacuation or access routes. The plans identified that the area police, fire department, and other emergency services would implement their emergency response or evacuation plans according to their communications protocols and hazard mitigation programs. Although permitted and temporary lane closures would occur during project construction, alternative routes would be available. During

project construction, the impact on an adopted response plan or emergency evacuation plan would be less than significant.

Operation and Maintenance

NO IMPACT. After construction, no lane closures would be needed, and no impact on a response plan or emergency evacuation plan would occur.

Required Mitigation Measures: None.

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?

Construction

LESS THAN SIGNIFICANT IMPACT. All of the project area is within an incorporated Local Responsibility Area defined by CAL FIRE, and is within a mapped Fire Hazard Severity Zone designated as "LRA Unzoned" indicating that it has less than moderate susceptibility to wildland fires. The area is not adjacent to wildlands. Although equipment and vehicles used during construction, as well as welding activities, have the potential to ignite dry vegetation, the project is not located within a zoned fire hazard area and the vegetation for the majority of the project is located in wetlands. As such, the risk of project-related construction igniting a wildfire is low. Impacts from wildland fires would be less than significant for construction activities for the project.

Operation and Maintenance

NO IMPACT. Operation and maintenance of the project would resemble those currently administered by PG&E under CPUC General Order 165, which requires inspections of transmission facilities to ensure safe and high-quality electrical service. The project area is also not located in a high hazard fire area. Therefore, there would be no impact from wildland fires during the operation and maintenance of the project.

Required Mitigation Measures: None.

5.8.3 References

CALFIRE 2008 - California Department of Forestry and Fire Protection (CALFIRE). 2008 *San Mateo County – Very High Fire Hazard Severity Zones in Local Responsibility Area*. Department of Forestry and Fire Protection. Projection Albers, NAD 1927, Scale 1: 100,000 at 34" x 42".

CLUP 2016 - Santa Clara County Airport Land Use Commission (CLUP). *Comprehensive Land Use Plan, Santa Clara County, Palo Alto Airport.* Adopted November 19, 2008. Amended November 16, 2016. Available at: https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_PAO_CLUP.pdf

DTSC 2018 - Department of Toxic Substances Control (DTSC). Envirostor Database. Available at: http://www.envirostor.dtsc.ca.gov/public/ Accessed on April 23, 2018.

EDR 2017 - Environmental Data Resources (EDR). 2017. *EDR DataMap™ - Corridor Study, Cooley Landing – Ravenswood*. Inquiry Number: 4958074.5s. June 7, 2017.

FAA 2018 – Federal Aviation Administration (FAA). Aeronautical Study (pursuant to 49 U.S.C. Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77)- Determination of No Hazard to Air Navigation. Dated June 7, 2018.

PGE 2017a - Pacific Gas & Electric Company (PGE). Proponents Environmental Assessment. December 15, 2017. http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/PDFs/Ravenswood_Cooley%20Landing_Final%20PEA.pdf

PGE 2018b - Pacific Gas & Electric Company (PGE). Responses to Data Requests, Set No. 1, dated 2/14/2018. March 13, 2018. http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/Data%20Deficiency/Responses/RCL_CPUC%20Data%20Request%20No.1_PGE%20Response_031318.pdf

SWRCB 2018 - State Water Resources Control Board (SWRCB). GeoTracker Database. Available at: http://geotracker.waterboards.ca.gov/ Accessed on April 23, 2018.

TetraTech 2016 - Tetra Tech. *San Mateo County Hazard Mitigation Plan.* July 2016.

5.9 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., 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, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site?	☐	☐	☐	☒
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☐	☒
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☐	☒
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	☐	☐	☐	☒
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	☐	☒
j. Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental criteria established by CEQA Guidelines, Appendix G.

5.9.1 Setting

Hydrologic Basin

The project area is located in the San Francisco Bay Hydrologic Region, which covers approximately 2.88 million acres (4,500 square miles) and includes all of San Francisco and portions of Marin, Sonoma, Napa, Solano, San Mateo, Santa Clara, Contra Costa, and Alameda counties. Groundwater basins underlie approximately 896,000 acres (1,400 square miles) or about 30 percent of the entire San Francisco Bay Hydrologic Region. A total of 28 named groundwater basins are present in the region. Two of these, the Napa-Sonoma Valley and the Santa Clara Valley groundwater basins, are further divided into three and four subbasins, respectively.

The project area is located near the southeastern end of the San Mateo Plain subbasin, which is one of the four subbasins of the Santa Clara Valley groundwater basin and is designated by the California

Department of Water Resources (DWR) as basin number 2-9.03 (DWR 2003). The San Mateo Plain subbasin consists of unconsolidated alluvial sediments underneath a coastal plain. A broad band of flat intertidal marshland is present along the San Francisco Bay shore, including the project vicinity. Along the inland edge of the coastal plain, bedrock hills ascend to the west. The width of the coastal plain varies, and is near its greatest (approximately five miles) in the project vicinity. The project vicinity is flat with elevation ranging from approximately 5 to 10 feet above MSL. Most of the project vicinity consists of preserved bayside marshland, including the Baylands Nature Preserve adjacent to the south of Cooley Landing, the Ravenswood OSP adjacent to the north of Cooley Landing, and the Don Edwards San Francisco Bay NWR north of that and surrounding the Ravenswood substation. The project area crosses levees associated with these marshlands at Cooley Landing (Bay Road), at the northern boundary of Ravenswood Open Space (Bay Trail), at the southern boundary of Don Edwards San Francisco Bay NWR, and at SR 84 (Data Basin 2017).

Groundwater

Groundwater use in the San Francisco Bay Hydrologic Region accounts for only a small portion (less than 10%) of the region's estimated average water supply for agricultural and urban uses. Potable water supply in the project area is exclusively surface water obtained through the SFPUC Regional Water System.

Flooding

According to the Federal Emergency Management Agency Flood Insurance Rate Maps for the area where the project is located, the project lies within Flood Zone AE, or the 100-year flood hazard zone (see **Figure 5.9-1**). Flood Zone AE is defined as areas of 1.0 percent annual chance of flood with average depths of one foot or higher. Properties in Zone AE area considered to be at high risk of flooding under the National Flood Insurance Program. Construction in these areas must meet local floodplain zoning ordinance requirements, including evidence that principle structures are above the Base Flood Elevation as shown on the adopted Flood Insurance Rate Map.

The potential for seiches and tsunamis that affect the adjacent San Francisco Bay may result in a higher risk of flooding at the project area. A seiche is defined as a surface water free or standing wave oscillation that is contained within a partially or completely enclosed basin. Seiches are initiated by some meteorological, geologic, event occurring within an enclosed basin such as San Francisco Bay, which results in sloshing of water within the basin as it reflects off the perimeter of the basin.

A tsunami is a series of waves generated in a body of water by a rapid disturbance (e.g., submarine seismic, volcanic, or landslide event) that vertically displaces water. Tsunamis affecting the Bay Area can result from on and offshore earthquakes within the Bay Area.

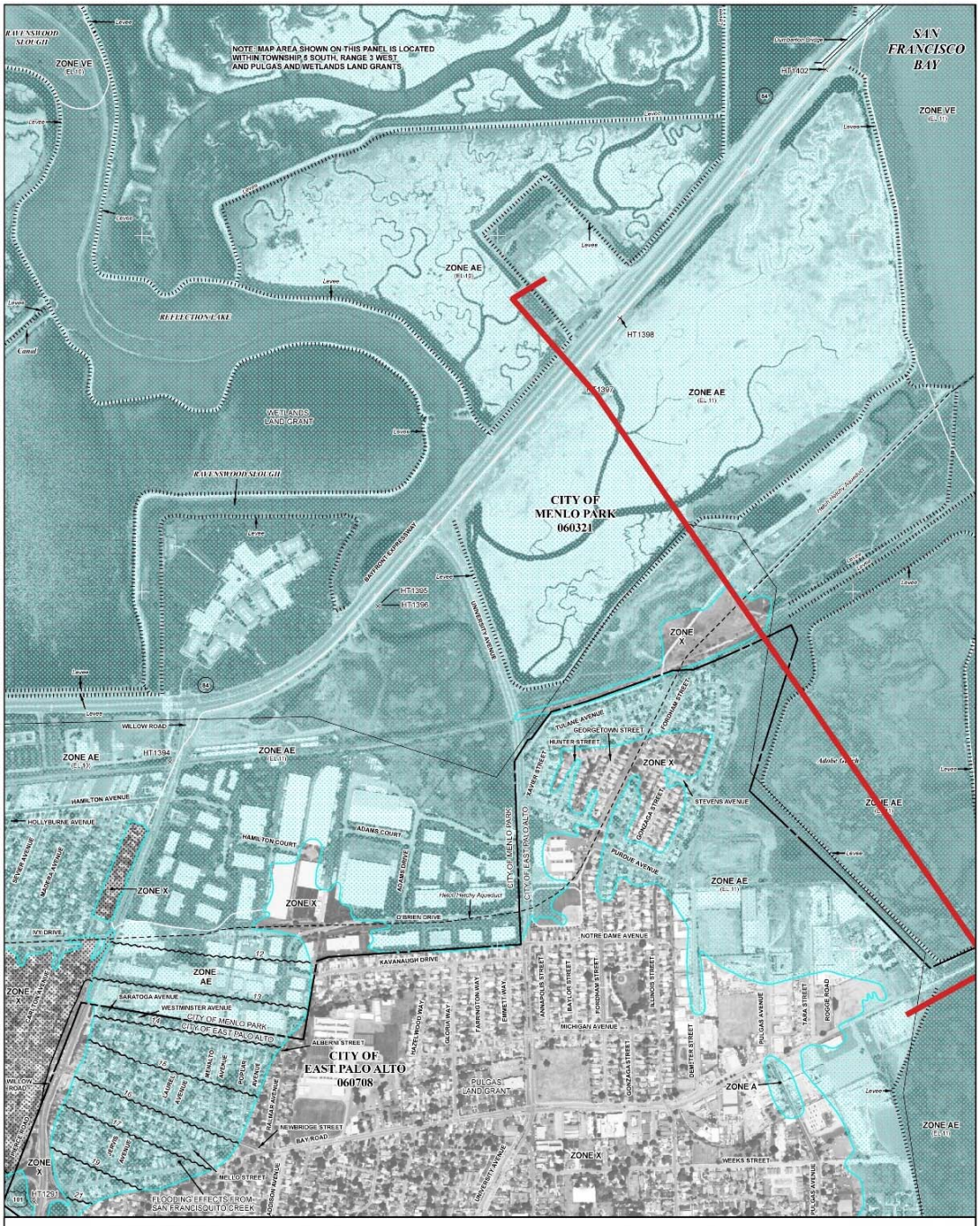

Figure 5.9-1
Hydrology and Water Quality

Sources: Flood Insurance Rate Map, San Mateo County, California and Incorporated Areas, Panel 307 of 510, Effective Date: October 16, 2012

Water Quality

Several small, unnamed sloughs and manmade channels connected to the San Francisco Bay are present in the project area. Historically, channels of the San Francisquito Creek discharged directly to the San Francisco Bay in the project vicinity. In the late 1920s, levees were constructed to re-route the creek through a new engineered channel, which is located approximately one-mile south of the project area. The headwaters of the San Francisquito watershed are in the Santa Cruz Mountains above Menlo Park, approximately 2,000 feet above the Bay. After exiting the foothills, the creek runs in an incised channel in a broad alluvial fan before draining into the Bay through the engineered channel. The creek's watershed is approximately 40 square miles and includes areas of San Mateo and Santa Clara counties west of the project area. The water quality of San Francisquito Creek and other creeks is influenced by pollutants contained in storm water runoff. Storm water from urban uses typically contains conventional pollutants such as metals, pesticides, herbicides, oil, grease, asbestos, lead, and animal wastes. San Francisquito Creek is currently listed on the USEPA's Section 303(d) Listed Waters for California for sediment, diazinon, and trash. The San Francisquito Creek and marshland adjacent to the project drain into the San Francisco Bay South. The San Francisco Bay South is identified as polluted with pesticides, dioxin and furan compounds, invasive species, mercury, polychlorinated biphenyls, and selenium (SWRCB 2017).

Regulatory Background

The statutes that govern the activities related to the Project that could affect water quality are the federal CWA (33 U.S.C. §1251) and the state Porter-Cologne Water Quality Control Act (Porter-Cologne) (Water Code §13000 et seq.). The National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection.

Federal

Clean Water Act. CWA, formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the NPDES permit process (CWA Section 402).

State

Clean Water Act. The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality under the NPDES framework (CWA Section 402), described above, to the SWRCB and its nine RWQCBs. The Proposed Project is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Regional Board 2).

Projects that disturb one or more acres are required to obtain NPDES coverage under the California General Permit for Discharges of Storm Water Associated with Construction Activity. The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP describes BMPs the discharger would use to protect stormwater runoff. The SWPPP must contain a visual monitoring program and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs.

Under Section 303(d) of the CWA, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating water quality standards. Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce future water quality degradation.

San Francisco Bay Conservation and Development Commission Permit. The BCDC was established by the California legislature as a result of the McAteer-Petris Act passed in 1965. The BCDC is a management and regulatory agency for the San Francisco Bay, the Bay's shoreline, and the Suisun Marsh. Jurisdiction of the BCDC covers a 100-foot-wide band along the shoreline of the Bay. Shoreline projects that impact plant habitat or water quality in the Bay or certain tributaries, salt ponds, or managed wetlands, as well as the Suisun Marsh require coverage under BCDC maintenance permit no. M87-74(A). The purpose of the permit is to ensure that project activities would not result in water quality or habitat impact to the BCDC jurisdictional waters and habitats. The BCDC permit addresses any activities that involve placing or removing fill material, such as riprap, or that can result in debris material falling in the water.

The BCDC permit also specifies BMPs that the project developer must follow to ensure that there would be no impact to the water quality of the Bay Water or the Suisun Marshland. Such BMPs include 1) debris removal such that all construction debris is removed to an authorized location outside the jurisdiction of the Commission, and 2) performing construction operations in a way that would not result in any construction material falling, washing, or blowing into the Bay. The BCDC permit requires that the project proponent immediately remove debris material at its expense or risk revocation of all or parts of the permit. Since portions of the project are within BCDC jurisdiction, BCDC permits and approvals are required for project construction.

The project proponent submitted a copy of BCDC Permit No. M87-74(A) that was valid for 10 years and expired in March 2018. In its Response to Data Request No. 2, PG&E stated that they had submitted the necessary paperwork for renewal of the permit (PGE 2018c). Detailed discussion and analysis of the permit is included in **Section 5.4, Biological Resources**.

5.9.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APM for hydrology and water quality as part of the project.

APM HYD-1: Storm Water Pollution Prevention Plan PG&E will prepare and implement a SWPPP to prevent construction-related erosion, sediment runoff, and discharge of other pollutants into adjacent waterways and onto neighboring properties. Because project activities will result in ground disturbance of more than one acre, PG&E will obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (and as amended by 2010-0014-DWQ and 2012-006-DWQ). To obtain coverage under the permit, PG&E will develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, construction drawings, certification by Legally Responsible Person (LRP), contractor contact information, and annual fee—to the State of California's Stormwater Multi-Application Report Tracking System (SMARTS) database and obtain a Waste Discharger Identification (WDID) number prior to initiating construction activities.

PG&E will implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP will outline implementation of BMPs for each

activity that has the potential to impact neighboring properties or degrade surrounding water quality through erosion, sediment runoff, dewatering, and discharge of other pollutants.

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

Construction

LESS THAN SIGNIFICANT IMPACT. Construction-related impacts on water quality result from several different sources. Among these sources would be contamination from fuels or other hazardous materials, and increased erosion caused by excavation or vegetation clearing that could lead to increased sedimentation. Vegetation may need to be cleared or mowed to improve existing access roads or establish overland access routes, work areas, pull sites, or landing zones for construction and reconductoring. The project has the potential to temporarily adversely affect water quality as a result of erosion and subsequent sedimentation that could result from the increased use of off-road vehicles or earth-disturbing activities. Two of the nine tower foundations (Towers 1 & 2) are partially submerged in the San Francisco Bay water and would require temporary matting for pile installation equipment access. However, depending on site-specific conditions at the time of construction, other construction methods may be employed, which may include placing temporary fill to set a drilling rig on for pile construction or construction of cofferdams to keep the pile construction area dry. There could be accidental release of hazardous materials that are used during construction such as diesel fuel, hydraulic fluid, or oils and grease. The impact of accidental releases of hazardous materials that would be used during construction and associated APMs are discussed in more detail in **Section 5.8, Hazards and Hazardous Materials.** If there is a spill to soil or water during project construction, impacts from project construction would be less than significant with implementation of **APMs HAZ-1** and **HAZ-3.**

Additionally, there exists a potential for increased erosion due to surface-disturbing activities associated with project construction. Significant sources of erosion and sedimentation from the project would be disturbance and spoils from drilling of foundation improvements for existing towers and support of the 2 new TSP's, and trench excavations for the OPGW conduit at the Ravenswood and Cooley Landing Substations. However, erosion potential would be limited by the scale of construction activities, and because the project site is relatively flat. The planned foundation improvement method would limit generation of spoils. Work areas would either be established by placing protective matting over the ground surface, by mowing existing vegetation, and in some areas by working on paved surfaces wherever they exist. The use of mats and existing paved surfaces would reduce the potential for erosion and subsequent sedimentation. Also, if groundwater is encountered during pile installation or shallow trench excavation, any uncontrolled discharge could result in impacts to water resources. However, given the in-place construction method for the piles and the relatively short and shallow trenches that would be excavated, a limited volume of water would be produced. Any water pumped from the cofferdams and pile casings would be contained in Baker Tanks and discharged in accordance with the SWPPP after testing and characterization.

PG&E would develop a SWPPP that addresses potential water quality concerns. The SWPPP would specify measures for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, and the presence of other pollutants. Any water from dewatering would be contained, analyzed, and discharged in accordance with the SWPPP. Additionally, where BCDC has jurisdiction, their permit requirements would further ensure the project activities would not cause unmitigated adverse impacts to the water quality of San Francisco Bay. Therefore, discharge of

dewatering waste, erosion, or sedimentation would not cause a water quality or waste discharge violation. The impact would be less than significant.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance and, therefore, there would be no violation of water quality standards or waste discharge requirements.

Required Mitigation Measures: None.

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 (i.e., 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)?

Construction

LESS THAN SIGNIFICANT IMPACT. The project would not use groundwater. Water needed for project construction activities including dust suppression would be transported to the project site using water trucks, typically with a capacity of 4,000 gallons. The water is expected to be obtained from local municipal sources, which are typically supplied through surface water reservoirs, not groundwater (SFPUC 2011). In addition, the project would not result in an increase in impervious surfaces or other areas that could substantially interfere with groundwater recharge. Also, given the limited depth and dimensions of the foundation improvements at the two new TSPs, Towers 1, 2, 8, and 9, and OPGW trench excavations, there would be no change in groundwater flow to wells in the area. If groundwater is encountered during pile installation or shallow trench excavation, any groundwater that would be pumped out would be handled in accordance with the SWPPP. However, given the small total volume of the pile shafts and in-place construction method, the volume of water that would be pumped out would be negligible and would be insignificant compared to the total groundwater in the underlying aquifer. Therefore, the impact to groundwater resources during construction of the project would be less than significant.

Operation and Maintenance

NO IMPACT. Project operation and maintenance water use would not change from current operation and maintenance, therefore, there would be no depletion of groundwater supplies or groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. No impact would occur.

Required Mitigation Measures: None.

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 off site?

Construction

NO IMPACT. There are several small, unnamed sloughs and manmade channels in the project area that are connected to the San Francisco Bay. However, there are no major rivers or streams that currently

flow in the project area. Reconductoring and foundation improvements for the project would occur above and below grade outside the influence of any drainages, streams, or rivers. The proposed pile caps near the surface at the four existing towers (Towers 1, 2, 8 and 9) and two new TSP's would encompass about 100 square feet each and would be constructed in areas that have already been disturbed and have minor previously modified and established drainage patterns. If cofferdams are needed for construction, they would be short term installations that would divert tidally influenced surface water slowly flowing around the pile caps. These diverted flows would not affect the submerged drainage patterns on the site in a manner that would result in substantial erosion or siltation on or offsite. Trenching for the OPGW conduit would occur in previously graded areas in the substation yards and trenches would be backfilled and compacted to eliminate any loose spoils that could affect existing drainages. Pile construction would not involve any surface grading. Likewise, staging areas are relatively flat and would not require significant grading. Thus, the project is not expected to alter the drainage course of the site or the course of any rivers or streams. No impact would occur.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance. Although two new TSP's would be added at the Ravenswood and Cooley Landing Substations, they would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site. All other construction would be above or below grade and would not result in ongoing erosion or siltation on or offsite. No impact would occur.

Required Mitigation Measures: None.

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 that would result in flooding on or off site?

Construction

NO IMPACT. There are several small, unnamed sloughs and manmade channels in the project area that are connected to the San Francisco Bay. However, there are no major rivers or streams that currently flow in the project area. The project involves reconductoring an existing power line and constructing eight foundation piles at each of four towers in addition to two TSPs at the two substations for the OPGW. The TSPs would be constructed on concrete pads that are about 100 square feet. Pile construction for the towers would be below grade and would not affect existing drainage. The TSPs would be constructed in areas that have already been disturbed and have minor previously modified and established drainage patterns. Construction of the foundation piles or the TSPs would not involve any surface grading that has the potential to alter existing drainage patterns of the project site or any rivers or streams. If cofferdams are needed for construction, they would be short term installations that would divert tidally influenced surface water slowly flowing around the pile caps. The cofferdams would not alter existing drainage patterns therefore they would not result in an increase in surface runoff or flooding. Trenching for the OPGW conduit would occur in previously graded areas in the substation yards and trenches would be backfilled and compacted to eliminate any loose spoils that could affect existing drainages. Placement of fill for access roads and work surfaces at the towers would be temporary and would not be placed in drainages or channels in the project area. Furthermore, the project would not create or increase the extent of existing impervious areas, nor

would it involve activities that have the potential of increasing surface water runoff rates to on- or off-site areas. Thus, the project is not expected to cause an increase to on- or off-site flooding potential. No impact would occur.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance. Although two new TSP's would be added they would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. All other construction would be above or below grade and would not contribute to flooding. No impact would occur.

Required Mitigation Measures: None.

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?

Construction

LESS THAN SIGNIFICANT IMPACT. The project would reconductor an existing power line, strengthen four tower foundations to support the new conductor, construct two new TSPs, and excavate trenches for the OPGW conduit. The project would not involve any activities that would contribute runoff to existing or planned stormwater drainage systems. The project would be located in and along the San Francisco Bay where stormwater would be directly discharged. The existing local stormwater systems are located upstream of the site and also ultimately discharge to the bay. Any stormwater flowing across the project would not be directed into the local stormwater systems and would not provide substantial sources of pollutants. PG&E would apply for and obtain coverage under the General Construction Storm Water Permit including preparation and implementation of a SWPPP in accordance with General Order No. 2009-0009-DWQ. The SWPPP would include measures to prevent or minimize contamination of stormwater by pollutants from construction activities including stockpiling of any fill or spoil materials. Discharges into the San Francisco Bay would not be substantial. Therefore, project construction would not cause a significant impact on the capacity of existing or planned stormwater drainage systems or contribute substantial additional sources of polluted runoff.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance. Although two new TSP's would be added they would not 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. All other construction and reconductoring would be above or below grade and would not contribute runoff that would impact stormwater systems or water quality.

Required Mitigation Measures: None.

f. Would the project otherwise substantially degrade water quality?

Construction

NO IMPACT. Other than the less-than-significant impacts discussed above in relation to stormwater pollution, there are no other project construction methods or reconductoring activities that would otherwise substantially degrade water quality.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance and, therefore, there are no other activities that would otherwise substantially degrade water quality.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. As shown in **Figure 5.9-1**, the existing towers are located within Flood Zone AE, or the 100-year flood hazard zone. Flood Zone AE is defined as areas of 1.0 percent annual chance of flood with average depths of one foot or higher. The project would not construct any housing. This project would not result in placing housing in a 100-year flood zone. Therefore, no impact would occur.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance. There would be no new housing within a 100-year floodplain, as mapped on a Flood Insurance Rate Map, or other flood hazard delineation map. No impact would occur.

Required Mitigation Measures: None

h. Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?

Construction

LESS THAN SIGNIFICANT IMPACT. The project would reconductor an existing power line, strengthen four tower foundations to support the new conductor, construct two new TSPs, and excavate trenches for the OPGW conduit. While the project area is located within Flood Zone AE, a 100-year flood hazard zone, reconductoring and foundation improvements would not result in placing any new structures in the 100-year flood zone that would impede or redirect flood flows. The conductor would be placed above the flood plain on the existing towers and the foundation improvements for towers would be below grade and beneath the flood plain. The two TSPs would be new construction in the floodplain. The TSPs would be constructed on concrete pads with a footprint of about 100 square feet each. The total footprint area of the TSPs and pads would not impede or redirect flood flows in the flood plain area. No change in flood flows from the project would be measureable. The project would not result in conditions that would impede or redirect flood flows. Therefore, there would be less than significant changes to flood flows during construction.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance. Although two new TSP's would be constructed in the floodplain the footprint is small and there would be no significant changes that would impede or redirect flood flows. No impact would occur.

Required Mitigation Measures: None.

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?

Construction

NO IMPACT. The project area is within a 100-year flood hazard area. However, the project does not involve modification of existing access roads used during construction. Temporary work and staging areas and helicopter landing pads (staging areas) would be restored after project completion. The project does not include construction of residential or any structures where people live or work in a flood or inundation hazard area. The project involves reconductoring which would occur above the flood plain. Foundation improvements for the towers would be constructed below grade beneath the flood plain. The two new TSPs would have substantial foundation supports that would resist erosion and impacts from flooding. The project is not expected to affect existing levees, dams, or other flood control mechanisms, or affect the potential for significant risk of loss, injury, or death resulting from flooding. Levees along portions of the site are landward of the project and do not protect the project site. Project construction would not affect these levees. Furthermore, given the short duration of project construction which would occur during a dry portion of the year, there would be no significant risk of loss due to flooding as a result of project construction. Therefore, no impact is expected to occur during project construction.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance and, therefore, the project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. No impact would occur.

Required Mitigation Measures: None.

j. Would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

Construction

NO IMPACT. A tsunami inundation map for the County of San Mateo shows that a portion of the existing transmission line is located in an area mapped as a tsunami inundation area (CGS 2009). Given the location of the transmission line in a semiconfined portion of the San Francisco Bay the existing towers could also be subject to the effects of seiche. However, the project is not expected to cause impacts from potential inundation due to seiche, tsunami, or mudflow. The tower foundation improvements would be below grade and would not impede flow or exacerbate inundation of other adjacent structures. The two new TSPs would encompass a very small area in the existing substations and would have a negligible effect on inundation due to seiche or tsunami. The conductor would be

constructed above the bay elevations and would not impede flows. In addition, there are few structures near the towers that could be affected by inundation. Moreover, the project does not involve modification of existing access roads used during construction.

A majority of the existing transmission line where the project improvements would occur is located in and adjacent to clay or 'mud' deposits of the San Francisco Bay. However, the new conductor and foundation improvements would be located above and below the ground surface, respectively, and the project area is also relatively flat. Therefore, project construction activities would have no potential to cause inundation by mudslide. The two new TSPs would be located in previously graded areas of the substations. These substations are relatively flat and there is no potential for mudslides to occur. Therefore, the project is not expected to cause impacts related to inundation from tsunami, seiche, or mudflow during construction. No impact would occur.

Operation and Maintenance

NO IMPACT. Project operation and maintenance would not change from current operation and maintenance and, therefore, there would be no change in impact related inundation by seiche, tsunami, or mudflow. No impact would occur.

Required Mitigation Measures: None.

5.9.3 References

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5.10 Land Use and Planning

LAND USE PLANNING Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.10.1 Setting

The project, which consists entirely of modifications to an existing power line, is in southeastern San Mateo County between PG&E's Ravenswood Substation and Cooley Landing Substation in the cities of Menlo Park and East Palo Alto. The northwest-southeast oriented power line passes through the Don Edwards San Francisco Bay NWR, the Ravenswood OSP, and the Baylands Nature Preserve. Single-family residential neighborhoods and industrial uses are to the west, and the San Francisco Bay is to the east. The overall project location and general existing land uses are shown on **Figure 4-1** in **Section 4, Project Description**.

Regulatory Background

Federal

Habitat Conservation Plan. Section 10 of the federal ESA allows for the creation of HCPs to protect listed and candidate species in connection with the issuance of an Incidental Take Permit for federally listed species. PG&E has an HCP for minor construction and operations and maintenance activities within the Bay Area. PG&E's Bay Area Operation and Maintenance Habitat Conservation Plan covers the operations and maintenance activities for PG&E's electric and gas transmission and distribution systems within nine counties, including San Mateo County. The project is within the boundaries of this HCP and does not fall within any other HCP boundaries (PGE 2017b).

Don Edwards San Francisco Bay National Wildlife Refuge. The Don Edwards San Francisco Bay NWR provides habitat for millions of migratory waterfowl and shorebirds along the Pacific Flyway as well as resident wildlife. The Don Edwards San Francisco Bay NWR is managed by the USFWS. The project area is within the Don Edwards San Francisco Bay NWR's West Bay Unit, which extends from Redwood City to the Faber Tract in East Palo Alto. Easements including PG&E facilities are included in the Comprehensive Conservation Plan description of the West Bay Unit. The project crosses lands owned by the Don Edwards San Francisco Bay NWR in the north and adjacent to Cooley Landing Substation and lands managed by Don Edwards San Francisco Bay NWR as part of an agreement between Cargill Salt and USFWS. The project does not cross any lands leased by the Don Edwards San Francisco Bay NWR from the California State Lands Commission (DESFNWR 2012 and PGE 2017a).

PG&E performs operation and maintenance of its infrastructure in the Don Edwards San Francisco Bay NWR under the conditions of a Special Use Permit issued by the USFWS. The Special Use Permit includes conditions pertaining to protection of Don Edwards San Francisco Bay NWR infrastructure, habitats, and species that must be implemented during operation and maintenance activities (PGE 2017a).

State

California Public Utilities Commission. The CPUC has exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of electrical transmission facilities, pursuant to Article XII, Section 8 of the California Constitution. The CPUC is the Lead Agency for CEQA review for this project and has authority over the discretionary project approval.

Natural Community and Conservation Plans. Similar to Section 10 of the ESA, the Natural Community Conservation Planning Act (California Fish and Wildlife Code Section 2800 et seq.) allows for the creation of Natural Community and Conservation Plans (NCCPs) to protect state-listed species, usually in connection with the issuance of a Section 2081 take permit under the California Endangered Species Act (Public Resources Code Section 2080 et seq.). While take of fully protected species may be authorized by the California Department of Fish and Wildlife under an NCCP, PG&E activities are not covered by an NCCP so this permitting option is not available (PGE 2017a).

San Francisco Bay Conservation and Development Commission. The San Francisco BCDC is a California state planning and regulatory agency committed to protecting and enhancing the San Francisco Bay and to encourage the Bay's responsible and productive use. The BCDC was created in 1965 and its authority is found in the McAteer-Petris Act, the San Francisco Bay Plan, and other special area plans, laws, and policies. BCDC's jurisdiction includes the San Francisco Bay, shoreline band extending 100 feet landward, salt ponds, managed wetlands, and certain waterways (SFBCDC 2012 and SFBCSC 2018). Portions of the project are within BCDC jurisdiction. PG&E would be required to coordinate with the BCDC regarding project segments within BCDC jurisdiction (see **Table 4.5-1** in **Section 4, Project Description**).

Regional

Midpeninsula Regional Open Space District. The MROSD is an independent special district that has preserved over 63,000 acres of public land and manages 26 open space preserves. The MROSD was founded in 1972 to preserve the regional greenbelt in northwestern Santa Clara County. The voters expanded the MROSD in 1976 to include southern San Mateo County. In 2004 the MROSD's boundary was extended to the Pacific Ocean in San Mateo County. The MROSD's purpose is to create a regional greenbelt of unspoiled public open space lands in order to permanently protect the area's natural resources and to provide for public use and enjoyment. The Ravenswood Open Space Preserve is managed by the MROSD (MRSOD 2018).

Local

The project is located within the city boundaries of Menlo Park and East Palo Alto. As stated above, the CPUC has exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of electric transmission facilities, and the CPUC's General Order 131-D, section XIV.B, provides that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Therefore, the project is not subject to local discretionary regulations. However, as part of the CEQA impact assessment, this analysis addresses the compatibility of

the project with local policies for informational purposes only, and the CPUC expects PG&E to work collaboratively to address local agencies' concerns. **Figure 5.10-1** shows general plan land use designations in the project area and its vicinity for both the City of Menlo Park and City of East Palo Alto. **Figure 5.10-2** shows zoning designations for each jurisdiction.

Menlo Park General Plan. The Menlo Park General Plan serves as the City of Menlo Park's "constitution" for development and the use of its land. It is a comprehensive, long-term document, detailing proposals for the physical development of the city, and of any land outside its boundaries but within its designated "sphere of influence." The Menlo Park General Plan is currently being updated, and the Land Use Element was approved in 2016.

The Menlo Park General Plan Land Use Element designates the project area located within the city boundaries as Baylands. The Baylands designation is intended to provide for the preservation and protection of wildlife habitat and ecological values associated with the marshlands and former salt ponds bordering San Francisco Bay and similar and compatible uses. The Ravenswood Substation has no general plan land use designation (City of Menlo Park 2016).

The Open Space and Conservation and Noise and Safety elements of the Menlo Park General Plan (City of Menlo Park 2013) include the following goals and policies related to the project area and/or utilities:

Goal OSC1 – Maintain, protect, and enhance open space and natural resources

- Policy OSC1.1 – Natural Resources Integration with Other Uses. Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.

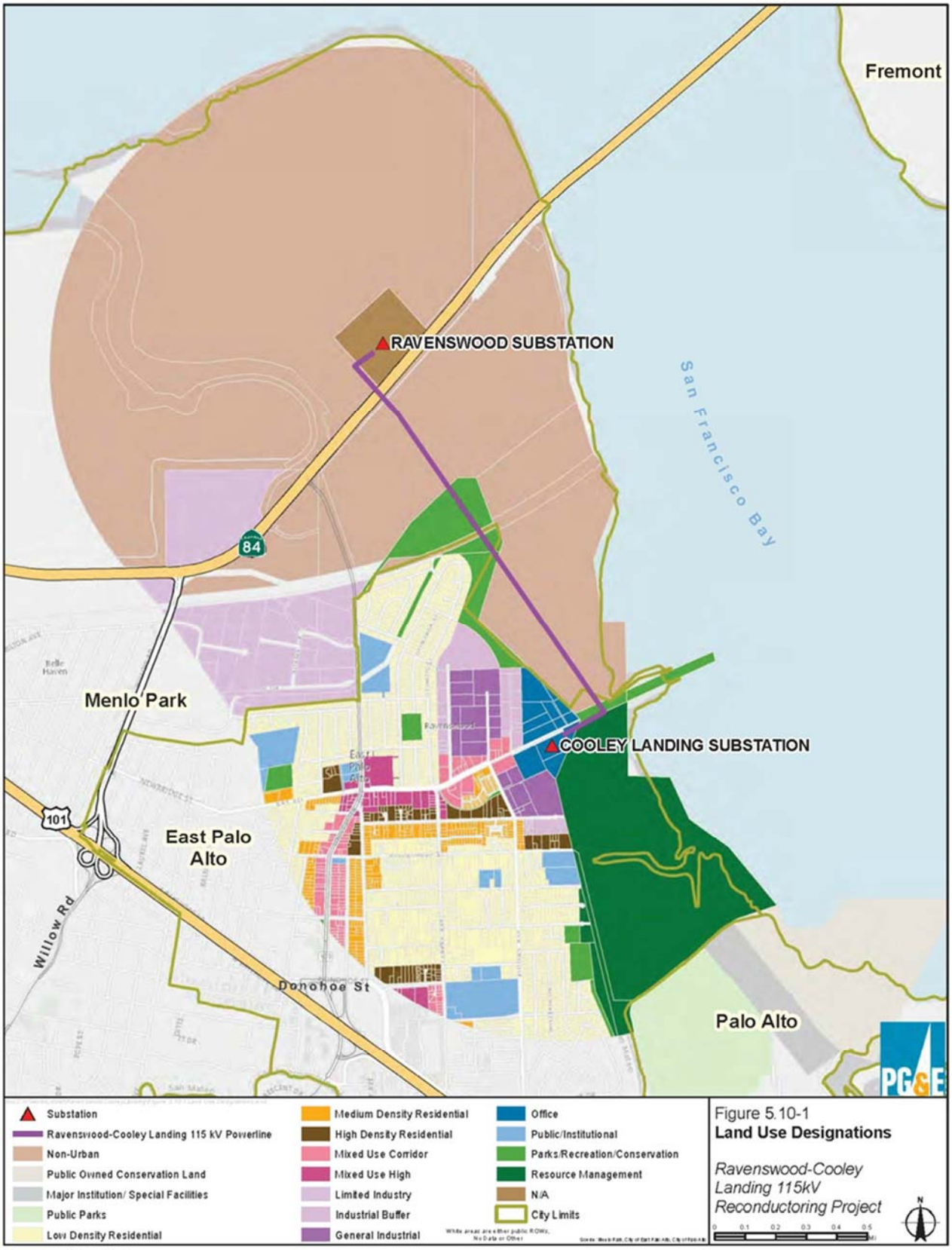
Goal S1 – Assure a safe community

- Policy OSC1.1 – Design and Location of Utilities. Monitor appropriate location, design, construction, maintenance, and inspection standards for utility systems traversing hazard areas within the City limits. This would include evaluation and upgrading outdated systems and infrastructure, coordination with the State Public Utilities Commission and locating new utility systems away from potential hazard areas.

Menlo Park Zoning Ordinance. Within the Menlo Park city boundaries, the Ravenswood Substation is zoned Unclassified (U) and the rest of the project area is zoned Flood Plain (FP) under the Menlo Park Zoning Ordinance (City of Menlo Park 2015). The maximum amount of development allowed under the FP zone (5,000 square feet of building floor area per parcel) does not apply to the project. Section 16.76.010 of the Menlo Park Zoning Ordinance indicates that utility transmission facilities shall be allowed in all zoning districts, without limitation as to height (City of Menlo Park 2017).

East Palo Alto General Plan. The City of East Palo Alto General Plan guides growth and land development, for both the current period and long term. The General Plan is the foundation for establishing goals, purposes, zoning, and activities allowed on each parcel to provide compatibility and continuity to the entire region as well as each individual neighborhood. The 2035 General Plan was adopted October 2016 and finalized March 2017.

The Land Use and Urban Design Element of the East Palo Alto General Plan designates the project area at Cooley Landing as Parks/Recreation/Conservation (PRC), the project area south of Cooley Landing as Resource Management (RM), and the Cooley Landing Substation is designated as Office (OC).



Source: PGE 2017a

Figure 5.10-2
Zoning Designations

The PRC designation is intended to provide for public parks such as local, community, and regional parks. Trails, community gardens, and other similar uses that provide open space resources to surrounding neighborhoods, communities, and the region are permitted.

The RM designation is intended for the conservation and preservation of environmentally sensitive open space lands. These areas are designated to retain their natural biological function serving as defensive barriers to waves, high tides, and storm surge and providing habitat for plants and animals. The designation includes creeks and other protected wetlands. There are no allowed uses in this designation except those required for the maintenance and security of the natural landscape.

The OC designation is intended to diversify the job and economic base of the City of East Palo Alto and to provide the opportunity for more residents to work in the city. Specific uses allowed in this designation include medium- and large-scale uses such as professional, legal, medical, financial, high-tech, and research and development uses. Other supporting uses such as restaurants, medical services, community facilities, and similar uses which together create concentrations of office employment or community activity are also allowed.

Within a half-mile of the project area, additional land use designations include Low Density Residential (LDR), General Industrial (I-G), and Industrial Buffer (I-B).

The East Palo Alto General Plan includes the following goal and policy related to the project area and/or utilities:

Goal POC-1 – Create new parks and open spaces throughout the City.

- Policy 1.12 – Opportunistic conversions. Work to convert unused utility rights-of-way (including the Hetch Hetchy right-of-way), railroad rights-of-way (including the Union Pacific Spur), and alleys into attractive open space corridors.

East Palo Alto Zoning Ordinance. Within the East Palo Alto city boundaries, Cooley Landing is zoned Ravenswood Open Space (ROS) and the project area south is zoned Resource Management (RM) under the East Palo Alto Zoning Ordinance. The Cooley Landing Substation is zoned Waterfront Office (WO) and is covered in the Ravenswood/4 Corners transit oriented development specific plan.

The purpose of the ROS zone is for the conservation of existing open space and development of traditional parks, linear parks, and other "public" spaces within the Specific Plan Area. The purpose of the RM zone is to provide for the conservation and preservation of environmentally sensitive open space lands in a natural condition. The purpose of the WO zone is to support the construction of Class A offices within the specific plan area. This zone accommodates professional offices and limited supporting retail or other uses.

Within a half-mile of the project area, additional zoning descriptions include Single Family Residential (R-1), Ravenswood Flex Overlay (R-Flex), and Ravenswood Employment Center (REC) under the East Palo Alto Zoning Ordinance.

Ravenswood/4 Corners Transit Oriented Development Specific Plan. The Ravenswood/4 Corners Transit Oriented Development Specific Plan is the City of East Palo Alto's plan for implementing new development, increased parklands/open space, enhanced economic activity, and an improved jobs-housing balance. The plan would convert surrounding lands adjacent to the Cooley Landing Substation to office uses.

Palo Alto Airport Comprehensive Land Use Plan. The Comprehensive Land Use Plan (CLUP) is intended to protect the public from the adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable airspace. The implementation of this CLUP is intended to prevent future incompatible development from encroaching on the airport and allow for its development in accordance with the current airport master plan (SCCLUP 2008). The Palo Alto Airport is located approximately 0.8 mile from the southern end of the project area. See **Section 16, Transportation and Traffic**, for further analysis of potential project impacts to air transit.

5.10.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for Land Use and Planning as part of the project.

a. Would the project physically divide an established community?

Construction

NO IMPACT. The project would replace the conductors on an approximately 1.6-mile power line within an existing PG&E right-of-way. Project activities would also include raising the nine existing towers several feet, ranging from approximately 3.6 to 14.5 feet. Two new TSPs would be constructed; one in each substation. The modification and replacement of related equipment would be completed within the existing fence line of Cooley Landing Substation.

The project would pass through the Ravenswood OSP which is managed by MROSD. The project would be compatible with the district's management and preservation of open space land. The project would result in no impact on established communities.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductered power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

b. Would the project 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?

Construction

NO IMPACT. The project would replace the conductors on an existing power line extending approximately 1.6 miles between the Ravenswood Substation in the City of Menlo Park and the Cooley Landing Substation in the City of East Palo Alto. The project would be entirely within PG&E's existing right-of-way.

As explained above, the CPUC has preemptive jurisdiction over the siting and design of the project. Thus, although the project would be located in the City of Menlo Park and the City of East Palo Alto, these cities do not have land use jurisdiction over the project and none of their land use plans, policies, or regulations apply to the project. Therefore, the project would not conflict with any applicable land

use plans, policy, or regulation of an agency with jurisdiction over the project. Nevertheless, this analysis describes and addresses the project's consistency with land use plans, policies, and regulations that pertain to the project areas to determine if inconsistency would result in an environmental impact.

The project would not conflict with the general plan land use designations, policies, and zoning ordinance regulations that pertain to the project within the City of Menlo Park. Replacing the conductors on the existing power line would not constitute a change in existing land uses and the zoning ordinance indicates that utility transmission facilities shall be allowed in all zoning districts without limitation as to height. The project would not conflict with Menlo Park General Plan Policy OSC1.1 regarding natural resources integration with other uses, such as utility corridors, because the project would be within an existing PG&E right-of-way utility corridor. Additionally, the project would not conflict with Policy OSC1.1 regarding design and location of utilities, as the project would be located to utilize existing utility towers and the zoning ordinance does not limit the height of utility transmission facilities.

Further, the project would not conflict with the general plan land use designations, policies, zoning ordinance, and specific plan that pertain to the project areas within the City of East Palo Alto because replacing the conductors on the existing power line would not constitute a change in existing land uses. The Ravenswood/4 Corners Transit Oriented Development Specific Plan proposes to convert the lands adjacent to the substation to office uses. The project would not conflict with East Palo Alto General Plan Policy 1.12 regarding opportunistic conversions of unused utility rights-of-way because the project would be within an existing used PG&E right-of-way.

The project would be consistent with the McAteer-Petris Act and the San Francisco Bay Plan by complying with the permit terms relating to maintenance activities within the 100-foot shoreline band and coordinating with the San Francisco Bay Conservation and Development Commission.

Although PG&E is not subject to local discretionary permitting, ministerial permits would be secured, as required. **Table 4.17-1** in **Section 4, Project Description** lists the authorizations that may be required for project construction. The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, and no impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductered power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Construction

NO IMPACT. PG&E's Bay Area Operation and Maintenance Habitat Conservation Plan is the only HCP that applies to the project. There is no applicable NCCP. The HCP covers 19 wildlife and 13 plant species for minor construction and operations and maintenance activities for PG&E's electric and gas transmission and distribution systems within nine counties, including San Mateo County. Minor

construction activities covered by the HCP include installing new or replacement structures to upgrade existing facilities. When conducted in natural vegetation that contains suitable habitat for covered species, upgrades to existing facilities and new electric or gas line extensions are limited to two miles or less from an existing line.

The project would consist of replacing the conductors on an approximately 1.6-mile existing power line facility within PG&E's existing right-of-way. Therefore, the project's construction activities would be conducted in compliance with the HCP. The project would not conflict with any applicable HCP or NCCP, and no impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductered power line would not change from current practices. Therefore, the project's operation and maintenance activities would be conducted in compliance with the HCP. The project would not conflict with any applicable HCP or NCCP, and no impact would occur.

Required Mitigation Measures: None.

5.10.3 References

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5.11 Mineral Resources

MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental criteria established by CEQA Guidelines, Appendix G.

5.11.1 Setting

Information on mineral resources was compiled from published literature, maps, and review of aerial photographs, including information from the California Department of Conservation, Division of Mines and Geology and the United States Geological Survey. Impacts to mineral resources from project construction and operational activities were evaluated qualitatively based on the area occupied by the project, site conditions, expected construction practices, anticipated materials used, and the locations and duration of project construction and operational activities.

Mineral resources in San Mateo County include Cretaceous quartz diorite, rocks of the Franciscan Complex, Franciscan Complex sandstone, greenstone, and Calera Limestone (USGS 2017). San Francisco and San Mateo Counties have approximately 1.6 billion tons of Cretaceous quartz diorite and Franciscan Complex sandstone, greenstone, and Calera Limestone. The Calera Limestone, which is associated with rocks of the Franciscan Complex, occurs as a discontinuous zone of limestone bodies extending southeasterly from Pacifica (California Department of Conservation Division of Mines and Geology 1987).

The project area, along with most of San Mateo County, is classified by the California Department of Conservation, Division of Mines and Geology as being within MRZ-1 (California Department of Conservation Division of Mines and Geology 1987). Areas classified as MRZ-1 are areas for which data sufficiently indicate that no significant mineral deposits are present. Therefore, the project would not be within areas that have active mining or proposed mining activities (California Department of Conservation Division of Mines and Geology 2000).

Regulatory Background

Federal

No federal regulations related to mineral resources apply to the project.

State

Surface Mining and Reclamation Act. The California Surface Mining and Reclamation Act of 1975 requires that the State Geologist classify land into Mineral Resource Zones (MRZ) or Scientific Zones according to the known or inferred mineral potential of the land (Pub. Resources Code §§ 2710-2796). MRZ are defined as the following (Stinson and others 1986):

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates that significant deposits are present, or where it is judged that a high likelihood for their presence exists. The guidelines set forth two requirements to be used to determine if land should be classified MRZ-2:

- The deposit must be composed of material that is suitable as a marketable commodity. The deposit must meet threshold value.
- The projected value (gross selling price) of the deposit, based on the value of the first marketable product, must be at least $5 million (1978 dollars).

Although not specified in the guidelines, the following criteria were applied to each deposit to test its suitability for inclusion in an MRZ-2 zone:

- The presence of an operating quarry within the deposit is considered proof that Condition 1 has been met.
- An average value of $2.00 per ton (all aggregate types) and a conversion factor of 2,500 tons per acre-foot of material (0.065 ton per cubic foot with 10 percent waste) require a minimum amount of 1,000 acre-feet of material within the deposit, exclusive of overburden and fill material, to meet suggested threshold value.
- A deposit of aggregate material must have an overburden-to-ore ratio of less than 1 to 1 in order for mining to become economic at the present time.

MRZ-3: Contain mineral deposits, but their significance cannot be evaluated from available data.

MRZ-4: Areas where available information is inadequate for assignment to any other MRZ category.

Scientific Zone: Areas containing unique or rare occurrence of rocks, minerals, or fossils that are of outstanding scientific significance shall be classified in this zone.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction (GO 131-D), the project is not subject to local discretionary regulations. This section includes a summary of local land use plans that delineate locally important mineral resource recovery sites for informational purposes and to assist with the CEQA review process.

San Mateo County regulates development within and adjacent to significant mineral resource areas by permitting land uses that are compatible with mineral resource extraction operations and within existing mineral resource areas. The project area does not cross any property where planned or active mineral extraction is occurring (San Mateo County General Plan 1986).

The City of East Palo Alto and City of Menlo Park General Plans do not designate any locally important mineral resources in the project area (City of East Palo Alto 2017 and City of Menlo Park 1994).

5.11.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for mineral resources as part of the project.

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?

Construction

NO IMPACT. The existing Ravenswood-Cooley Landing Line, and its associated substations, are not located in a mineral resource area; the project area is classified as MRZ-1, where no significant mineral deposits are present. Loss of availability of a known mineral resource of value to the region and state would not occur; therefore, no construction impacts would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

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?

Construction

NO IMPACT. Because the project area is designated MRZ-1, where no significant mineral deposits are present, construction or operation and maintenance of the project would not result in the loss of availability of a locally important mineral recovery site; therefore, no construction impacts would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. No impact would occur.

Required Mitigation Measures: None.

5.11.3 References

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5.12 Noise

NOISE Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of applicable 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 ground-borne vibration or ground-borne 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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G

5.12.1 Setting

Fundamentals of Noise and Vibration

Noise is defined as unwanted and objectionable sound. **Table 5.12-1** contains definitions of acoustical terms used in this analysis.

TABLE 5.12-1 DEFINITION OF ACOUSTICAL TERMS

Term	Definition
Noise	Unwanted sound, which occurs as a rapid fluctuation of air pressure above and below the atmospheric pressure. There are two important characteristics of noise: frequency and loudness. The number of pressure variations per second is called the frequency of sound and is measured in Hertz. The higher the frequency, the more high-pitched a sound is perceived to be. Loudness is measured in decibels, which are defined further below.
Decibel	Noise is measured in terms of sound-pressure level using units called decibels (dB). Since the range of intensities that the human ear can detect is large, the scale is based in multiples of 10, the logarithmic scale. Each interval of 10 dB indicates a sound energy 10 times greater. Each interval is perceived by the human ear as being roughly twice as loud.
A-Weighted Decibel (dBA)	The most common system used by regulatory bodies for noise measurement is the A-weighted decibel (dBA) scale. This scale measures sound as an approximation of how a person perceives or hears sound. A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (Leq).
Statistical Noise Measurement	Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by Lxx, where xx represents the percentage of time the sound level is exceeded. For example, L90 represents the noise level exceeded during 90 percent of the measurement period. Similarly, L10 represents the noise level exceeded for 10 percent of the measurement period.
Equivalent Sound Pressure Level (Leq)	The average noise level, on an equal energy basis over a stated period of time. Sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn).

TABLE 5.12-1 DEFINITION OF ACOUSTICAL TERMS

Term	Definition
Day–Night Average Sound Level (Ldn) Noise Level	The Ldn, or day-night average sound level (DNL), is equal to the 24-hour A-weighted equivalent sound level that is weighted with a 10 dBA penalty to account for differences in noise levels and the elevated perception of noise during nighttime hours (10 p.m. to 7 a.m.). Most household noise also decreases at night and exterior noise becomes more noticeable.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 dBA to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 dBA to sound levels in the night between 10 p.m. and 7 a.m.
A-weighted Maximum Noise Level (Lmax)	Lmax is the maximum sound level recorded over a stated period of time. Lmax is often used as a measure of the most obtrusive facet of the noise. However, it may only occur for a very short time.

Notes: Noise levels in communities usually relate to the intensity of nearby human activity. Noise levels are generally considered to be low at levels below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA.

Table 5.12.2 identifies various common indoor and outdoor noise sources and their associated sound levels.

TABLE 5.12.2 COMMON OUTDOOR AND INDOOR SOUND LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
Threshold of hearing	0	

Source: Caltrans 2013, California Department of Transportation, Division of Environmental Analysis, Environmental Engineering, 2013.

The general human response to changes in noise levels that are similar in frequency content (e.g., equivalent noise level [Leq]) are summarized as follows (Kryter 1970):

- A 1-dBA change in sound level generally cannot be perceived, except in carefully controlled laboratory experiments.
- A 3-dBA change in sound level is considered a barely noticeable difference.
- A 5-dBA change in sound level is typically noticeable.
- A 10-dBA change is considered to be a doubling in loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a linear scale; it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A logarithmic scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise sources, the resulting noise level equals 70.4 dBA.

Nighttime noise can potentially affect sleep. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening. (LAWA 2012). Although nighttime awakenings occur independent of noise, Fidell, et al., provided the following summary of night awakenings: “Depending on the definition adopted for ‘awakening,’ people may awaken for reasons having nothing to do with noise many times per night, at moments which may or may not closely coincide in time with the occurrence of noise events.” According to Basner et al., “people exhibit an average of 21 electro physiologically detectable arousals per hour of sleep, or about 144 spontaneous arousals per night.” Counting both shifts from deeper to lighter sleep states and momentary awakenings, Ollerhead et al., reported about 45 “awakenings or arousals” per night, of which only 40 percent were thought to represent even momentary awakenings. People commonly attain full waking consciousness two or three times per night for reasons having nothing to do with noise exposure.

Health effects from noise have been studied around the world for nearly 30 years. Scientists have attempted to determine if high noise levels can adversely affect human health apart from auditory damage. These research efforts have covered a broad range of potential impacts from cardiovascular response from fetal weight to mortality. While a relationship between noise and health effects seems plausible, it has yet to be convincingly demonstrated--that is, shown in a manner that can be repeated by other researchers while yielding similar results. In a review of 30 studies conducted worldwide between 1993 and 1998, a team of international researchers concluded that, while some findings suggest that noise can affect health, improved research concepts and methods are needed to verify or discredit such a relationship. The team of international researchers called for more study of the numerous environmental and behavioral factors than can confound, mediate, or moderate survey findings. Until science refines the research process, a direct link between a single source noise exposure and non-auditory health effects remains to be demonstrated (LAWA 2012).

Ambient Noise Levels in the Project Area

Ambient noise from traffic and other transportation sources in the project area varies from less than 55 dBA Community Noise Equivalent Level (CNEL) to greater than 65 dBA CNEL (City of Menlo Park 2013 and City of East Palo Alto 2016), and are considered representative of existing conditions. The existing background noise level at the fixed residential receptors nearest located approximately 500 feet from the project alignment ranged from 61 to 63 dBA CNEL, with typical daytime Leq noise levels of 53 to 66 dBA and nighttime Leq noise levels of 44 to 60 dBA (City of East Palo Alto 2016b2016b). The sources of existing ambient noise in the environment primarily consist of continuous sounds of traffic along highways and city roads, railway noise, airplane noise, sounds emanating from neighborhoods, and naturally occurring sounds. In addition, the Palo Alto Municipal Airport is approximately 0.8 mile from the project and the project site is within the 55 dBA and 60 dBA CNEL contours (CLUP 2016). No other airports are located within five miles of the project.

Noise-Sensitive Receptors

Noise-sensitive receptors generally are defined as locations where people reside or where the presence of unwanted sound may adversely affect the existing land use. Typically, noise-sensitive land uses include residences, hospitals, places of worship, libraries, performance spaces, offices, and schools, as well as nature and wildlife preserves, and recreational areas.

The nearest noise-sensitive receptors to the project area are residences along Fordham and Illinois Streets in East Palo Alto, some of which are located approximately 500 feet from the existing Ravenswood-Cooley Landing Line. No schools or hospitals are located within 0.25 mile of the existing power line or designated work areas. Iglesia Pan De Vida church (2526 Pulgas Ave) and Union Star Missionary Baptist Church (1898 Bay Road) are located approximately 650 feet and 980 feet, respectively, from the helicopter landing zone at Staging Area 4 near Cooley Landing Substation. The closest park, Cooley Landing Park (2100 Bay Road), is located approximately 660 feet east of the project alignment. All of these noise-sensitive receptors occur within the City of East Palo Alto.

The project alignment traverses two nature preserves and one wildlife refuge: the Ravenswood OSP and the Baylands Nature Preserve in City of East Palo Alto, and the Don Edwards San Francisco Bay NWR in the City of Menlo Park. These three wildlife recreational areas contain hiking and bicycle trails in close proximity to the alignment and project work areas. Potential noise and vibration impacts to wildlife are addressed in **Section 5.4, Biological Resources**.

With the exception of the Don Edwards San Francisco Bay NWR, there are no noise-sensitive receptors within 0.25 mile of the project in the City of Menlo Park. The Facebook campus (1 Hacker Way) is located approximately 2,800 feet from the Ravenswood Substation.

The summaries of sensitive receptors provided above are not intended to list every specific individual sensitive receptor, but are intended to provide an overview of the types of uses in the vicinity of the project. As noted above, the noise measurement locations are considered representative of other sensitive receptors located throughout the vicinity of the project site.

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the geometric spreading loss (Caltrans 1998). The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of

noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as excess ground attenuation. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noises such as a street with moving vehicles (a "line" source) would typically attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict.

Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance. However, for a vegetative strip to have a noticeable effect on noise levels, it must be dense and wide. For example, a stand of trees must be at least 100 feet wide and dense enough to completely obstruct a visual path to the roadway to attenuate traffic noise by 5 dBA (Caltrans 1998). A row of structures can shield more distant receivers depending upon the size and spacing of the intervening structures and site geometry. Similar to vegetative strips discussed above, noise barriers, which include natural topography and sound walls, reduce noise by blocking the line of sight between the source and receiver. Generally, a noise barrier that breaks the line of sight between source and receiver will provide at least a 5-dBA reduction in noise.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA 2006). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earth-moving equipment. The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. In areas like the project site, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV).

Regulatory Background

CEQA does not specify a numerical threshold for substantial increases in noise. Additionally, there are no state or federal regulations that limit overall environmental noise levels; however, federal guidance documents address environmental noise and regulations for specific sources (e.g., aircraft or federally funded highways). These standards are not directly applicable to utility construction projects. The East Palo Alto and Menlo Park city codes uphold the same or similar policy framework for addressing potential noise impacts.

Federal

Occupational Safety and Health Act. Under the Occupational Safety and Health Act of 1970, the Department of Labor, Occupational Safety and Health Administration (OSHA) adopted regulations Title 29 section 1910.95, designed to protect workers against the effects of occupational noise exposure.

These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing protection program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

Guidelines are available from the US EPA to assist state and local government entities in developing state and local LORS for noise, but these guidelines are not applicable because there are existing local LORS that apply to this project.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of architectural damage for conventional sensitive structures is a peak particle velocity of 0.2 inches per second (in/sec).

State

California Government Code section 65302, subdivision (f), encourages each local governmental entity to perform noise studies and implement a noise element as part of its general plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

California Office of Noise Control. The State of California, Office of Noise Control, prepared the Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards.

California Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (Cal OSHA) has adopted occupational noise exposure regulations (California Code of Regulations Title 8 §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to federal OSHA standards.

Caltrans. In September 2013, Caltrans released the Transportation and Construction Vibration Guidance Manual[3]. This manual includes the FTA method and findings. The manual uses a method based on the force of the pile driver as well as soil considerations in the calculation of vibration levels. The Caltrans manual states that for construction activities that generate vibration, e.g., pile driving, the threshold of human response begins at a peak particle velocity of 0.16 in/sec. This is characterized by Caltrans as a "distinctly perceptible" event with an incident range of transient to continuous (Caltrans 2013).

Local

Pursuant to CPUC GO No. 131-D, the CPUC has exclusive jurisdiction over the siting and design of the project, and local discretionary land use regulations are preempted and would not apply to the proposed project.

City of East Palo Alto. The East Palo Alto City Code of Ordinance section 8.52.320 establishes operational noise limits for sensitive receptors, summarized in **Table 5.12-3**. Section 8.52.350 specifically exempts noise sources associated with construction activities from these noise limits between the hours of 7:00 a.m. and 8:00 p.m., Monday through Sunday, and exempts any activity that has been preempted by state or federal law.

Noise variances are permissible under Palo Alto Municipal Code Section 8.52.410 for regulated activities. Such variances are based upon the magnitude of the nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of equipment, the general public interest and welfare, whether strict compliance with the requirements of this chapter will cause practical difficulties, unnecessary hardship or unreasonable expense and any other relevant considerations, including but not limited to, the fact that a commercial or industrial facility as defined in Section 8.52.040 and Section 8.52.160 commenced development prior to the existence of a resident affected by noise from such facility, and the extent to which a commercial or industrial applicant has endeavored to reduce noise during the three-year transition period as specified in Section 8.52.360 of this chapter.

The project would use helicopters to remove and install the conductors, set the cage-top extensions and OPGW peaks, and transport laborers and materials to the towers. Section 8.06.050(a) specifically exempts sound generated by aircraft from the noise limits in section 8.06.030.

According to East Palo Alto City Code of Ordinance section 8.52.32, it is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any single or multiple family residence, school, hospital, church or public library situated in either the incorporated or unincorporated area adjacent to the city to exceed the noise level standards as set forth in **Table 5.12-3**.

[3] Available at http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf

TABLE 5.12-3 NOISE LEVEL STANDARDS AT RECEIVING LAND USE: SINGLE OR MULTIPLE FAMILY RESIDENCE, SCHOOL, HOSPITAL, CHURCH OR PUBLIC LIBRARY PROPERTIES

Cumulative Noise Level Category	Cumulative Number of Minutes in Any One Hour Time Period	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
1	30	55 dBA	50 dBA
2	15	60 dBA	55 dBA
3	5	65 dBA	60 dBA
4	1	70 dBA	60 dBA
5	0	75 dBA	70 dBA

Source: City of East Palo Alto 2004, Section 8.52.320

The following further explains the cumulative noise level categories provided in this table. For each category, the noise level limit is adjusted to account for shorter period of noise exposure. The noise level generated must not exceed:

1. The allowable noise level for a cumulative period of more than 30 minutes in any hour;
2. The allowable noise level plus 5 dBA for a cumulative period of more than 15 minutes in any hour (for example, for daytime, 55 dBA plus 5 = 60 dBA as compared to the 30-minute interval);
3. The allowable noise level plus 10 dBA for a cumulative period of more than 5 minutes in any hour;
4. The allowable noise level plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
5. The allowable noise level plus 20 dBA for any period of time.

Construction between 7 a.m. and 8 p.m. is exempt from the noise standards. As shown in **Table 5.12-3**, the allowable noise levels are lower for nighttime hours than daytime hours.

City of Menlo Park. Menlo Park City Code of Ordinance section 8.06.030 establishes a maximum noise level at residential properties of 60 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m. Section 8.06.040(a)(1) exempts construction activities from these noise limits between the hours of 8:00 a.m. and 6:00 p.m., Monday through Friday, with the provision that no powered equipment shall generate noise in excess of 85 dBA at 50 feet. Section 8.06.040(a)(2) further exempts residents/property owners personally undertaking construction activities to maintain or improve their property on Saturdays, Sundays or holidays between the hours of 9:00 a.m. and 5:00 p.m. These regulations are not applicable to sound generated by motor vehicles and not applicable to City and state construction work performed by the city and/or the state, their respective agents or contractors, for city and/or state maintenance, repair or construction projects which cannot be performed from 7:00 a.m. to 6:00 p.m. Monday through Friday (City of Menlo Park Municipal Code Section 8.06.050.)

For projects subject to Menlo's Park's noise regulations, activities can be exempted if an applicant can demonstrate that a diligent investigation of available noise abatement techniques indicates that compliance with the requirements of this chapter would be impractical or unreasonable, pursuant to Menlo Park Municipal Code Section 8.06.060.

The project would use helicopters to remove and install the conductors, set the cage-top extensions and OPGW peaks, and transport laborers and materials to the towers. Section 8.06.050(a) specifically exempts sound generated by aircraft from the noise limits in section 8.06.030.

5.12.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APM for noise as part of the project.

APM NO-1: Noise-Reducing Practices during Construction. PG&E shall employ standard noise-reducing construction practices such as the following:

- Ensure that all equipment is equipped with mufflers that meet or exceed factory new-equipment standards.
- Locate stationary equipment as far as practical from noise-sensitive receptors.
- Limit unnecessary engine idling.
- Limit all construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime project construction be necessary because of planned clearance restrictions, affected residents shall be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.

a. Would the project result in exposure of persons to or generation of noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

NO IMPACT. Project construction is expected to last approximately four months, with work typically occurring between 7 a.m. and 7 p.m., Monday through Friday; however, work at individual towers would take much less than four months. Nighttime construction is not anticipated, except for certain construction procedures that cannot be interrupted because of safety considerations or to take advantage of line clearances during off-peak hours. One activity, a rolling stop, would occur during the early morning hours on a Sunday and several rolling-stops, less than 15 minutes in duration, would occur during the nighttime hours.

The City of East Palo Alto explicitly exempts construction noise from the noise ordinance limits between 7 a.m. to 8 p.m., every day of the week, as well as any activity that has been preempted by state or federal law. As a result, construction noise would not be subject to the City of East Palo Alto's noise regulations.

The City of Menlo Park explicitly exempts construction noise from the noise ordinance limits between 8 a.m. to 6 p.m., Monday through Friday, and helicopter noise during anytime. The closest noise receptor to the project in the City of Menlo Park is the Facebook campus, approximately 2,800 feet away. At this distance, noise from land-based construction activities would be inaudible (less than 3 dBA increase).

In accordance with CPUC GO No. 131-D, the CPUC has exclusive jurisdiction over the siting and design of the project, exempting the project from compliance with local municipal code regulations.

The local regulations are not applicable to this project; therefore, the project's noise would not be in excess of applicable standards. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power lines would not change from current practices. The new conductor would not change the amount of noise generated by operation of the power lines when compared to existing conditions. No permanent increase in ambient noise levels would occur in the project vicinity. Therefore, there would be no impact.

Required Mitigation Measures: None.

b. Would the project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Construction

LESS THAN SIGNIFICANT IMPACT. Construction activities, such as drilling and movement of heavy construction equipment, may generate localized ground-borne vibration and noise. Due to adequate distances to noise-sensitive receptors, heavy equipment operation is not anticipated to result in excessive ground-borne vibration.

Some types of construction equipment can produce vibration levels that can cause architectural damage to structures and be annoying to nearby sensitive receptors. Vibration levels generated during construction of the project would vary during the construction period, depending upon the construction activity and the types of construction equipment used. Typical vibration levels for the construction equipment types that would generally result in the highest vibration levels (e.g., drill rig, large bulldozers) are presented in **Table 5.12-4**.

TABLE 5.12-4 VIBRATION SOURCE LEVELS FROM CONSTRUCTION EQUIPMENT

Distance (feet)	Peak Particle Velocity (in/sec) Drill Rig, Large Bulldozer
50	0.031
75	0.017
100	0.011
150	0.006

Source: FTA 2006

This analysis relies on PPV threshold identified by Caltrans to determine the significance of vibration impacts related to adverse human reaction and risk of architectural damage to buildings. The threshold of human response begins at a PPV of 0.16 in/sec. This is characterized by Caltrans as a "distinctly perceptible" event (Caltrans 2013). The PPV level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

The nearest historical resource is the BDPL Nos. 1 and 2 Historic District, located approximately 200 feet to the closest segment of the project, or Tower 4. There would be no construction-related activities (i.e., no modifications to the tower footings) that would generate vibration at Tower 4, and there would be no vibration impact to this historical resource.

As shown in **Table 5.12-~~6~~4**, the PPV would be 0.006 at 150 feet. The nearest residential receptor to construction equipment would be at least 500 feet away, where the PPV would be much less than that and far less than the threshold of 0.16 in/sec for human response. Also, ground-borne vibration would occur during short-term periods. Therefore, heavy equipment operation used during construction of the project is not anticipated to result in excessive ground-borne vibration. The impact would be less than significant.

Operation and Maintenance

NO IMPACT. Equipment used during operation and maintenance of the project would not change from current practices and would similarly produce no ground-borne vibration. No impact would occur.

Required Mitigation Measures: None**.**

c. Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction

NO IMPACT. Project construction would be temporary and would not result in a permanent increase in ambient noise levels.

Operation and Maintenance

Maintenance Activities

NO IMPACT. Operation and maintenance activities for the reconductored power lines would not change from current practices. No permanent increase in ambient noise levels would occur in the project vicinity. Therefore, there would be no impact.

Corona Noise

LESS THAN SIGNIFICANT IMPACT. Corona noise is crackling, hissing, or humming noises generated from operation of high-voltage transmission lines during foggy or rainy weather. Audible noise levels from the reconfigured 115-kV line segments are expected to be relatively low, generally less than 34 dBA directly below the conductor in rainy conditions. The power line reconfiguration would not increase voltage or require co-location of conductors or new structures that would increase the corona effect. Therefore, corona noise generated by the reconfigured power lines would be the same as the existing power lines and so would not generate new noise and would not exceed the existing ambient noise levels at the project's noise-sensitive receptors, including residences and recreationalist in the wildlife refuge. The impact would be less than significant.

Required Mitigation Measures: None.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. Construction noise would occur during establishment of access and work areas, foundation work, reconductoring, tower modifications, and right-of-way (ROW) cleanup. For the purposes of this analysis, a temporary increase in ambient noise

level of more than 10 dBA is considered substantial at a permanent sensitive receptor location (US EPA 1993).

Assuming a scenario under which multiple pieces of the loudest equipment are used, **Table 5.12-5** summarizes the maximum land-based construction equipment noise levels at various distances from the project during the different construction phases.

TABLE 5.12-5 CONSTRUCTION LEQ NOISE LEVELS (DBA) FOR ALL CONSTRUCTION ACTIVITIES BY PHASE OR DISTANCE

Distance from Construction Activity (feet)	Staging Areas	Establishing Access and Work Area	Foundation Work	Tower Modifications	Conductor Installation (Reconductoring)	Cleanup
50	82	82	83	51	82	76
100	76	76	77	45	76	70
250	68	68	69	37	68	62
500	62	62	63	31	62	56
1,000	56	56	57	25	56	50
2,000	50	50	51	19	50	44
Construction Equipment	• Boom truck • Forklift • Generators • Water tender w/ pickup truck	• Boom Truck • Forklift • Tractor with mower • Light-duty pickup truck	• Drill rig • Forklift • Skid steer • Concrete truck • Light-duty pickup truck • Grout injector (concrete pump) • Generators	• Light-duty pickup truck • Medium helicopter (see Table 5.12-5)	• Tensioner • Puller • Boom truck • Bucket truck • Man lift • Line truck w/ wire reel • Light helicopter (see Table 5.12-~~5~~6)	• Dump truck • Skid steer • Light-duty pickup truck

Note: Not all construction equipment would necessarily be used simultaneously. Source: PG&E 2017a

Table 5.12-6 presents the maximum sound levels from helicopter use at various distances. Helicopters would be used to remove and install the conductors, to set the cage-top extensions and OPGW peaks, and transport laborers and materials to the towers. Helicopters would generally fly directly from landing zones to the alignment, and would follow the alignment to each tower site.

TABLE 5.12-6 MAXIMUM HELICOPTER NOISE LEVELS BY DISTANCE AND PHASE

Equipment Description/ Construction Activity	Flight Phase	Lmax at 100 feet (dBA)	Lmax at 250 feet (dBA)	Lmax at 500 feet (dBA)	Lmax at 1000 feet (dBA)	Lmax at 2,000 feet (dBA)
Light Helicopter (MD500)/ Conductor Installation	Take-off	88	80	74	68	62
	Landing	91	83	77	71	65
	Level Flight	87	79	73	67	61
	Hover	85	77	71	65	59
Medium Helicopter (Bell 206)/ Tower Modifications	Take-off	87	79	73	67	61
	Landing	92	84	78	72	66
	Level Flight	87	79	73	67	61
	Hover	85	77	71	65	59

Source: PG&E 2017a

Recreational Daytime Ambient Noise

Recreational users at Ravenswood OSP, the Baylands Nature Preserve, and the Don Edwards San Francisco Bay NWR could be exposed to construction and helicopter noise levels exceeding 80 dBA when using trails that cross beneath the existing line or that are within 100 feet of tower work areas. However, these activities would only occur up to a few days per location. Recreationalists are transitory, and would be able to move away from noisy areas with little impact on their experience. The construction impact would be less than significant.

Residential Daytime Ambient Noise

The existing daytime ambient noise level at the closest noise-sensitive receptors is on average 59.5 dBA Leq (City of East Palo Alto 2016b). The closest noise-sensitive receptors to project construction activities are the residences along Illinois and Fordham Streets in the City of East Palo Alto, approximately 500 feet from the alignment. Land-based construction noise could be as high as 63 dBA Leq at the nearest sensitive receptors. Thus, land-based construction activities are not expected to increase the existing background noise by up to 10 dBA. The impact would be less than significant.

The longest period of time helicopter noise would occur at any given location would be during hovering. Helicopter hovering may last up to 3 hours per day during helicopter operations (PGE 2017a). This activity, in combination with other land-based conductor installation equipment, could generate noise levels as high as 71.5 dBA Leq at the nearest sensitive receptors located approximately 500 feet away. These noise levels would result in an increase of up to 12 dBA over the existing ambient noise levels at the nearest residential receptors, and the noise level would exceed the temporary noise threshold by causing noise levels to increase by more than 10 dBA. Helicopter activities would only occur up to a few hours per day for one to two days per location. The increases in the ambient noise levels due to construction activities would create a significant temporary impact on ambient noise levels.

While **APM NO-1** requires notification of residents in the event of nighttime construction and use of noise reduction practices, the APM does not require residents to be notified of daytime helicopter activities or provide specific recommendations for residents to minimize the effects of noise. **MM NO-**

1 supersedes **APM NO-1** and requires PG&E to notify residents and business owners within 1,500 feet of the helicopter landing zones and flight paths nearest to the area's residential receptors at least 7 days prior to daytime use of helicopters. The notice will include recommendations that residents can follow to minimize noise impacts including closing windows. Typically, exterior noise attenuation to interior spaces is 15 to 20 dBA with windows closed as a result of residential building code noise insulation standards (Cal. Code of Regs., tit. 24 [or CBC], §§1207 and 1207.4). These noise levels are accomplished through various noise attenuation features, including insulation, required by CBC section 1207. The CBC is applicable to all development in California (Health and Safety Code, § 17950). Consequently, interior noise levels during project construction would range from 51.5 to 56.5 dBA Leq. The implementation of **MM NO-1** would minimize the impact on sensitive receptors from temporary increases in ambient noise to less than significant through implementation of various noise controls outlined in greater detail below, including sound barriers.

Residential Nighttime Ambient Noise

The existing nighttime ambient noise level at the closest noise-sensitive receptors is on average 52 dBA Leq (City of East Palo Alto 2016b). Any nighttime work related to reconductoring could potentially affect sleep, however it would be infrequent and short-term (one or two days at a time). Nighttime work may involve tower modification or reconductoring, resulting in a projected noise level up to 62 dBA Leq at the closest residential receptors located approximately 500 feet from the alignment, which would be a 10 dBA increase in nighttime ambient noise levels and a significant impact. Helicopter activities during reconductoring could result in noise levels as high as 73 dBA when landing near receptors. The nighttime noise level from helicopter use would increase by as much as 21 dBA, which would exceed the 10 dBA noise threshold resulting in a significant impact. While **APM NO-1** requires notification of residents in the event of nighttime construction and use of noise reduction practices, the APM does not provide specific recommendations to minimize the effects of noise or limit use of helicopters to daytime only. **MM NO-1** supersedes **APM NO-1** and limits helicopter activities to daytime only and requires use of noise barriers for night-time land-based construction activities. Furthermore, **MM NO-1** requires PG&E to notify residents and business owners within 1,500 feet of active reconductoring sites and staging areas at least 7 days prior to nighttime construction activities. Helicopter noise would not impact sensitive receptors with implementation of mitigation. Acoustic blankets can reduce noise by 5 to 10 dB (FHWA 1974). Noise levels from reconductoring activities, with use of noise barriers as required by **MM NO-1**, would be reduced to between 57 dBA and 52 dBA, which would be below the threshold. The implementation of **MM NO-1** would minimize the impact on sensitive receptors from temporary increases in ambient noise to less than significant through implementation of various noise controls outlined in greater detail below, including limits on helicopter activity and sound barriers.

MM NO-1: Notices, Noise-Reducing Practices, and Complaint Response Process. PG&E shall employ standard noise-reducing construction practices including, but not limited to, the following:

- Ensure that all equipment is equipped with mufflers that meet or exceed factory new- equipment standards.
- Locate stationary equipment as far as practical from noise-sensitive receptors.
- Limit unnecessary engine idling.

- Limit all land-based construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Limit all helicopter activity to daytime hours.
- Notification:
    - Residences and business owners affected by daytime helicopter activities within 1,500 feet of Staging (Landing) Areas 3 and 4 and flight paths shall be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.
    - Residences and business owners within 1,500 feet of active nighttime reconductoring sites and staging areas shall be notified at least 7 days in advance of nighttime work by mail, personal visit, or door hanger, and informed of the expected work schedule.
    - PG&E shall post notices in public areas, including recreational use areas, within 500 feet of the project alignment and construction work areas.
    - In this notice, PG&E shall state that it will perform this activity in a manner to ensure excessive noise is avoided as much as practicable. PG&E shall provide tips to homeowners and business owners on reducing noise intrusion, for example, moving indoors, closing windows and doors facing the construction and helicopter paths. PG&E shall note the efficacy of these tips in reducing noise.
- Temporary sound barriers shall be installed and maintained by the construction contractor for nighttime work conducted within 1,000 feet of sensitive receptors. Temporary sound barriers shall consist of either sound blankets at the noise source or other sound barriers/techniques such as acoustic padding or acoustic walls placed near the noise source. Barriers shall be placed such that the line-of-sight between the construction equipment and adjacent sensitive land uses is blocked. As needed, trucks used during nighttime construction work shall be equipped with either a white noise or variable volume back up alarm. If a low volume alarm cannot be installed, the alarm shall be disabled, and instead, a flagman shall be used for safe movement of trucks.
- PG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. PG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in the above notices and also posted conspicuously at the construction site(s). PG&E shall address any daytime-related noise complaint within one week of when the complaint is filed. If a complaint is related to nighttime construction work, PG&E shall address it within 24 hours of the filing of the complaint. PG&E shall provide monthly reports with records of complaints and responses to the CPUC. These reports shall be provided to CPUC within 15 days of the end of the month.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power lines would not change from current practices. The new conductor would not change the amount of noise generated by operation of the power lines when compared to existing conditions. No temporary increase in ambient noise levels would occur in the project vicinity. Therefore, there would be no impact.

Required Mitigation Measures: MM NO-1

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?

Construction

LESS THAN SIGNIFICANT IMPACT. The project is 0.8 mile from the Palo Alto Airport Comprehensive Land Use Plan area. However, the project alignment is outside of the 65 dB noise contour at ground level. Therefore, project construction workers and area residents would not be exposed to excessive noise levels from airport operations.

Operation and Maintenance

NO IMPACT. Operation and maintenance of the reconductored Ravenswood – Cooley Landing Line would not change from current practices. With no changes from current practices, no impact would occur to people residing or working in the project area from excessive noise.

Required Mitigation Measures: None.

f. For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?

Construction

NO IMPACT. No private airstrips are located within two miles of the project. Therefore, no impact would occur.

Operation and Maintenance

NO IMPACT. No private airstrips are located within two miles of the project. Therefore, no impact would occur.

Required Mitigation Measures: None**.**

5.12.3 References

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5.13 Population and Housing

POPULATION AND HOUSING Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.13.1 Setting

The following are the study areas for population and housing related project impacts:

- Cities where the project is located and adjacent cities where residential areas are in close proximity to the project:
    - Cities of East Palo Alto and Menlo Park in San Mateo County and the City of Palo Alto in Santa Clara County
- Local workforce - residing within a two-hour commute[1] for project construction and a one-hour commute for project operation:
    - San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area[2] (MSA) (San Benito and Santa Clara counties)

The project transects the cities of East Palo Alto and Menlo Park, and at the southern extent of the project there is a residential neighborhood in close proximity to the project within the City of Palo Alto. Each of these cities could be impacted by the project through population growth or impacts to housing. The City of East Palo Alto has planned for a population increase of 7,515 by the year 2035 (City of East Palo Alto 2017). Similarly, the City of Menlo Park has planned for a population increase from 32,679 in 2013 to 38,100 in the year 2040 (City of Menlo Park 2014). The City of Palo Alto has planned for a population increase from 66,638 in 2013 to 84,000 in 2035 (City of Palo Alto 2017).

Table 5.13-1 presents the projected employment growth for the San Jose-Sunnyside-Santa Clara MSA, in which the project is proposed.

[1] Workers with a greater commute would be considered non-local and would tend to seek lodging closer to the project site (temporarily during construction or permanently during operations).

[2] A Metropolitan Statistical Area (MSA) consist of the county or counties (or equivalent entities) associated with at least one urbanized area of at least 50,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties (US Census 2018).

Table 5.13-1 PROJECTED EMPLOYMENT GROWTH

Area	Year 2014	Year 2040	Annual Average Percent Change
San Jose-Sunnyvale-Santa Clara MSA Construction and Extraction trades	40,320	49,540	2.3

Source: CA EDD 2016

Table 5.13-2 presents housing supply data for the project area. Year 2017 housing estimates indicated 14,437 vacant housing units within San Mateo County representing a vacancy rate of 5.2 percent (CA DOF 2017). Nearby Palo Alto and Santa Clara County, have vacancy rates of 6.4 and 4.4 percent, respectively. A housing vacancy rate of five percent is an industry accepted indication that there is sufficient housing available for occupancy (Virginia Tech 2006).

Table 5.13-2 HOUSING SUPPLY ESTIMATES IN THE PROJECT AREA

Housing Supply		2017	
		Total	Vacant
East Palo Alto	Number	7,860	749
	Percent	100	9.5
Menlo Park	Number	13,921	791
	Percent	100	5.7
San Mateo County	Number	277,189	14,437
	Percent	100	5.2

Source: CA DOF 2017.

Regulatory Background

There is no regulatory background information relevant to addressing project-related impacts on population and housing.

5.13.2 Environmental Impacts and Mitigation Measures

PG&E would not implement any APMs for population and housing as part of the project.

a. Would the project 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)?

Construction

NO IMPACT. The project would not directly induce substantial population growth as it does not propose new homes or businesses.

While the project would provide updated electrical infrastructure, it would replace existing infrastructure with the goals of addressing existing overload issues, addressing forecasted future load growth, and meeting the reliability standard (PGE 2017a). The continued availability of electric capacity does not normally encourage or ensure growth within a particular area. Rather, growth is more likely to occur based on other factors such as economic conditions, availability of land, and local planning policies. Thus, the project would not directly or indirectly induce substantial population growth. No impact would occur.

Operation and Maintenance

NO IMPACT. As there are no changes from current operation and maintenance practices of the reconductored power line, no permanent workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

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

Construction

NO IMPACT. The project site is located within an existing transmission line right-of-way corridor and would not extend beyond; thus, the project would not displace any existing housing. The project would not result in the need for construction of replacement housing elsewhere. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance of the reconductored power line would occur within the existing right-of-way so no housing would be displaced. No impact would occur.

Required Mitigation Measures: None.

c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

Construction

NO IMPACT. The project site is located within an existing transmission line right-of-way corridor and would not extend beyond; thus, the project would not directly displace people.

PG&E would employ approximately 25 workers during construction peak, some of whom would likely come from existing local PG&E staff, with the remaining from neighboring cities. As **Table 5.13-1** shows, there would be ample construction and extraction workers to supply the project. No people would be displaced and no replacement housing would be necessary. No impact would occur.

Operation and Maintenance

NO IMPACT. As there are no changes from current operation and maintenance practices of the reconductored power line, no permanent workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

5.13.3 References

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5.14 Public Services

PUBLIC SERVICES 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:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

For an impact to be considered significant under these thresholds the project would have to result in adverse physical impacts to the environment not already addressed in the other individual resource sections of this CEQA document.

5.14.1 Setting

Fire Protection

The project is in the jurisdiction of the Menlo Park Fire Protection District (City of Menlo Park FPD 2018). The district serves an area approximately 29 square miles (including 4 square miles of marshland, 8 square miles of bay water, and 17 square miles of land) (CEC 2018k). The district serves over 100,000 people who live in Atherton, East Palo Alto, Menlo Park, and unincorporated San Mateo County areas. The district responds to over 900 emergencies, with approximately 60 percent of the calls for emergency medical incidents (CEC 2018k).

Stations 2 and 77 provide fire protection and emergency medical services to the City of East Palo Alto and the City of Menlo Park, which are in the southernmost part of the district. Three captains and six firefighters are on duty daily at Stations 2 and 77. A minimum of three personnel must be licensed paramedics.

Station 2 is the busiest station in the district and is staffed with five personnel on duty daily with two response units consisting of a light rescue and fire engine.

Station 77 is staffed with four personnel daily who staff a Quint combination aerial ladder truck/fire engine.

The emergency response time standard per Fire Board Resolution 1818 is seven minutes for a single unit and 11 minutes for a multiple unit response. The district does not have an official service standard.

At the closest point to the project linear, Station 2 is approximately 0.9-mile southwest of the project.

Police Protection

The project and nearby roads are in the jurisdiction of the City of East Palo Alto Police Department and the Menlo Park Police Department. Depending upon where in the project a response was needed, officers from either the East Palo Alto or Menlo Park police department would respond. The roads in close proximity to the project are patrolled by both the Menlo Park Police Department and the East Palo Alto Police Department.

The East Palo Alto Police Department has one station. The department has a total of 40 sworn officers (East Palo Alto PD 2018). The department has a response time of approximately 2 minutes for an emergency and 15 minutes or less for a non-emergency call (CEC 2018c). The department's service standard is 1 officer for 1,500 residents. With a current estimated population of 30,340, approximately 20 officers would be required to meet service standards (CA DOF 2017). With 40 officers, the East Palo Alto Police Department meets their service standards.

The Menlo Park Police Department has one main station and a community service center in the Belle Haven neighborhood. The department has a total of 54 sworn officers (CEC 2018i). The department has a response time of approximately 6-7 minutes for an emergency. The department's service standard is 1.1 officers for 1,000 residents. With a current estimated population of 35,670, approximately 39 officers would be required to meet service standards. With 54 officers, the Menlo Police Department meets their service standards (CA DOF 2017).

Schools

The project is in the Sequoia Union High and Ravenswood City Elementary school districts. The Sequoia Union High School District had an enrollment of 9,911 students in the 2016/2017 year (CDE 2017). This district includes six high schools and two charter high schools. The Ravenswood City Elementary School District had an enrollment of 3,853 students in the 2016/2017 year (CDE 2017). This district includes one charter school, six public elementary schools, one magnet school, and one private school. At the closest point to the project linear, the closest school in either district is East Palo Alto Charter School, approximately 0.4-mile south of the project.

Parks

The project is in the city boundaries of East Palo Alto and Menlo Park. East Palo Alto has five parks and one nature preserve (City of East Palo Alto 2018a). Park amenities include baseball/softball fields, barbecue pits and tables, and a playground. The Cooley Landing Park is the closest park facility to the project, approximately 600 feet away. The park has a new educational center and plans for an outdoor classroom, picnic areas, interpretive signs, and additional trails within this approximately 15-acre park (City of East Palo Alto 2018b). East Palo Alto has a parkland dedication/in lieu standard of 3 acres per 1,000 residents. Current 2017 population estimates for East Palo Alto is 30,340, translating to a need for 91 acres of parkland to meet their standard (CA DOF 2017). At 33 acres, East Palo Alto has approximately 1.1 acre per 1,000 residents and does not meet their park standard.

The project is within the Ravenswood OSP, a 376-acre preserve comprised of two non-contiguous areas located south of the Dumbarton Bridge and adjacent to San Francisco Bay. Ravenswood Preserve has 1.3-miles of trails.

At the north end of the project is the Don Edwards San Francisco Bay NWF, a 30,000-acre wildlife refuge offering wildlife viewing, hiking trails, a visitor center, an environmental education center, waterfowl

hunting, and fishing (USFWS 2018). The wildlife refuge is within the city limits of East Palo Alto, is owned by the City of Palo Alto, and managed by the USFWS (CEC 2018h).

At the south end of the project are the Baylands Nature Preserve and the Lucy Evans Baylands Nature Interpretive Center. The 1,940-acre nature preserve includes 15 miles of multi-use trails that provide access to a unique mixture of tidal and fresh water habitats (City of Palo Alto 2018).

The San Francisco Bay Trail is a planned 500-mile walking and cycling path around the entire San Francisco Bay. Over 350 miles of the trail is in place (San Francisco Bay Trail 2018). In the project area, segments of the Bay Trail extend parallel to and then south from SR 84, through the Don Edwards San Francisco Bay NWF and into the Ravenswood OSP and Baylands Nature Preserve. The project transmission line crosses the Bay Trail in five locations (PGE 2017a).

Menlo Park has 221 acres of parkland distributed among 13 parks, 3 community centers, 2 public pools, 3 childcare centers, 1 gymnasium, and 1 gymnastics center (City of Menlo Park Comm. Services 2018). Included in the parks and recreation areas are tennis courts, dog parks, softball diamonds, picnic areas, playgrounds, soccer fields, a skate park, shared use of a performing arts center and open space. Menlo Park has adopted a goal of maintaining a ratio of five acres of developed parkland per 1,000 residents (City of Menlo Park GP 2013). Current 2017 population estimate for Menlo Park is 35,670, translating to a need for 178 acres of parkland to meet their standard (CA DOF 2017). At 221 acres, Menlo Park has approximately 6.2 acres per 1,000 residents and does meet their park standards.

Other Public Facilities

Menlo Park has two libraries, the main branch and Belle Haven branch (City of Menlo Park Library 2018). The Belle Haven branch is closer to the project site and also has more limited hours compared with the main library. East Palo Alto has one library, the East Palo Alto library (San Mateo County Libraries 2018).

Regulatory Background

Federal

No federal regulations apply to the project with respect to public services.

State

No state regulations apply to the project with respect to public services.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

City of East Palo Alto. The general plan has the following park-related policy (City of East Palo Alto GP 2017):

- **Policy 1.1 New parks and open space.** Maintain a park standard of 3 acres per 1,000 residents. Undertake a program to add 79 acres of new formalized park spaces, prioritizing the areas of the City currently underserved by parks (Weeks, Kavanaugh, Willow, and Woodland).

City of Menlo Park. The general plan has the following park-related policy (City of Menlo Park GP 2013):

- **Policy POSC2.4 Parkland Standards.** Strive to maintain the standard of 5 acres of parkland per 1,000 residents.

5.14.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for public services; however, **APM HAZ-1** would ensure hazardous substance control and emergency response procedures are in place and followed, thus ensuring the safety of the public and project workers during construction. See **Section 5.8, Hazards and Hazardous Materials** for a full description of **APM HAZ-1.** Also **MM TRA-1** would require that emergency access be maintained at all times and that local emergency service providers are notified prior to and during construction and reconductoring activities. See **Section 5.16, Transportation and Traffic** for a full description of **MM TRA-1**.

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:

a) Fire protection?

Construction

NO IMPACT. Project construction would require approximately 25 workers during the peak construction period, some of whom would either be drawn from PG&E workers from the local area or from workers who commute from the neighboring cities (PGE 2017a).

Project construction activities that could pose a risk for fire or the need for fire protection response due to heated exhaust or sparks, including helicopter operation, helicopter refueling, grinders, cranes, excavation equipment, vehicles, and bulldozers. Other construction activities with a potential fire risk due to heat sources or open flames could include torches or welding. However, the project is not located in a fire hazard area and the vegetation for the majority of the project is located in wetlands. Also, PG&E would implement **APM HAZ-1** which would ensure the safety of the public and site workers during construction. This APM also ensures that emergency response procedures are identified (including fire response) and implemented.

As discussed in **Section 5.16, Transportation and Traffic**, reconductoring activities associated with crossing over SR 84 and Bay Road would require temporary lane closures which may significantly impact emergency access, including fire service response. **MM TRA-1** requires notification of local emergency service providers prior to and during construction and reconductoring activities and to maintain emergency access on project roadways at all times; thereby reducing the potentially significant transportation and traffic impact to less than significant. See **Section 5.16, Transportation and Traffic** for a full description of **MM TRA-1**.

While there may be a slightly increased need for fire protection response during project construction and the project could have an impact on emergency response due to the temporary lane closures, these effects would not be sufficient to induce the construction of new or physically altered governmental facilities that could result in significant environmental impacts. Also, Menlo Park Fire Protection District indicated that in the event of a fire or medical emergency at the project, emergency

response time would be within the Menlo Park Fire Protection District's response standards (CEC 2018k). No impact would occur.

For discussion of emergency vehicle access during construction, please refer to **Section 5.16, Transportation and Traffic**.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. As there would be no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site so there would be no permanent increased demand. No impact would occur.

Required Mitigation Measures: None.

b) Police Protection?

Construction

NO IMPACT. As discussed above for fire protection, no temporary or permanent workers would relocate closer to the project site and thus would not permanently increase the demand for police protection.

Construction areas without existing fencing would be secured with temporary chain-link fencing and security gates (PGE 2017a). Therefore, between the existing fencing and temporary fencing around staging areas, theft or vandalism would be deterred.

The temporary lane closures on SR 84 and Bay Road during project construction may significantly impact emergency access, including law enforcement response. **MM TRA-1** would reduce the transportation and traffic impact to less than significant by requiring the notification of local emergency service providers prior to and during construction and reconductoring activities and to maintain emergency access on project roadways at all times.

The project's short construction would not likely pose a high demand for police protection response from either the Menlo Park Police Department or East Palo Alto Police Department. Menlo Park Police Department indicated the emergency response time of 6 to 7 minutes would be a consistent response time at the project site. The response goals for both police departments would not likely be significantly affected by the project. The traffic delays and impacts to response goals would not be sufficient to induce construction of new or physically altered government facilities, such as police stations that would result in significant environmental impacts. No impact would occur.

For related discussion of emergency vehicle access during construction, please refer to **Section 5.16, Transportation and Traffic**.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. As there would be no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

c) Schools?

Construction

NO IMPACT. As school impact fees[3] are collected based on the square footage of covered, enclosed commercial/industrial space and the project does not propose this type of space, no fees would be applicable to the project.

Because the project would not cause local population growth, it would not have indirect impacts related to school attendance or school facilities. See **Section 5.13, Population and Housing** for more information regarding population growth. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. As there would be no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

d) Parks?

Construction

NO IMPACT. The project would have approximately 25 construction workers on-site at any time during peak construction due to work carried out concurrently, with 15 workers on site on a typical work day (PGE2017a). Construction workers would be sourced from either the existing PG&E staff in the local area or workers who commute from the neighboring cities (PGE 2017a). The construction workers from neighboring cities are not likely to temporarily locate closer to the project site or visit the nearby parks. Therefore, the project would not affect the park standards or increase the demand for park facilities.

As discussed in **Section 5.12, Transportation and Traffic**, construction activities could temporarily disrupt the Bay Trail and limit access to the trail and adjacent recreation facilities for a limited period of time. These temporary disruptions would not be sufficient enough to result in the need for new or physically-altered park facilities that would result in significant environmental impacts. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. As there would be no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

[3] Pursuant to Title 7, California Government Code, section 65995.

e) Other Public Facilities?

Construction

NO IMPACT. Like park facilities, construction workers do not generally visit nearby libraries. As the project would not require additional operations and maintenance workers, no new population would be added to the nearby communities. Therefore, the project would not increase the demand for library facilities. No impact would occur**.**

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. As there would be no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

5.14.3 References

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CEC 2018h – California Energy Commission (CEC). Record of Conversation between Lisa Worrall, Staff Analyst, and Kamal Fallaha, P.E., Public Works Director. City of East Palo Alto. April 5, 2018.

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5.15 Recreation

RECREATION	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.15.1 Setting

There are several recreational resources in close proximity to the project. The project is within the Don Edwards San Francisco Bay NWR, the Ravenswood OSP, and the Baylands Nature Preserve. Other recreational resources include the San Francisco Bay Trail and Cooley Landing Park. The project transmission line is oriented northwest-southeast and extends through the cities of East Palo Alto and Menlo Park within San Mateo County.

Don Edwards San Francisco Bay NWR is at the north end of the project. This wildlife refuge is 30,000 acres and offers wildlife viewing, hiking trails, a visitor center, an environmental education center, waterfowl hunting, and fishing (US FWS 2018). Approximately 0.5-mile of the project transmission line is within the wildlife refuge (PGE 2017a).

The Ravenswood OSP is a 376-acre preserve comprised of two non-contiguous areas located south of the Dumbarton Bridge and adjacent to San Francisco Bay. Ravenswood Preserve has 1.3-miles of trails (MROSD 2018). Approximately 0.7-mile of the project transmission line is within the open space preserve (PGE 2017a).

The Baylands Nature Preserve and Lucy Evans Baylands Nature Interpretive Center are at the south end of the project. The 1,940-acre nature preserve includes 15 miles of multi-use trails that provide access to a unique mixture of tidal and fresh water habitats (City of Palo Alto 2018). Approximately 0.1-mile of the project transmission line is within the Baylands Nature Preserve (PGE 2017a).

The San Francisco Bay Trail is a planned 500-mile walking and cycling path around the entire San Francisco Bay. Over 350 miles of the trail is in place (San Francisco Bay Trail 2018). In the project area, segments of the Bay Trail extend parallel to and then south from SR 84 through the Don Edwards San Francisco Bay NWR and into the Ravenswood OSP and Baylands Nature Preserve. The project transmission line crosses the Bay Trail in five locations (PGE 2017a).

Cooley Landing Park is an approximately 15-acre park on a peninsula at the eastern end of Bay Road. It has a new educational center and plans for an outdoor classroom, picnic areas, interpretive signs, and additional trails (City of East Palo Alto 2018b). This park is approximately 660 feet east of the project transmission line (PGE2017a).

Regulatory Background

There is no regulatory background information relevant to addressing project-related impacts on recreation.

5.15.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APM for Recreation as part of the project:

APM REC-1: Coordination with Park Management and Signage. PG&E will coordinate closely with the Association of Bay Area Governments (ABAG), the Midpeninsula Regional Open Space District, cities of Palo Alto and East Palo Alto, and the U.S. Fish and Wildlife Service (USFWS) to communicate potential park and trail disruptions during project construction activities. Signs advising recreational facility users of construction activities will be posted at entrances and parking areas associated with open space areas (including Don Edwards San Francisco Bay National Wildlife Refuge, Ravenswood Open Space Preserve, and Palo Alto Baylands Nature Preserve), at the Cooley Landing Park Education Center, and at designated areas along the Bay Trail. During construction activities that could limit trail access, PG&E will provide a flagman at trail crossings to ensure public safety and safe passage through the project area.

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?

Construction

NO IMPACT. The project would have approximately 25 construction workers on-site at any time during peak construction due to work carried out concurrently, with 15 workers on site on a typical work day (PGE 2017a). Construction workers would be sourced from either the existing PG&E staff in the local area or workers who commute from the neighboring cities (PGE 2017a). The construction workers from neighboring cities are not likely to temporarily locate closer to the project site or visit the nearby parks. Therefore, the project would not increase the use of existing parks or recreational facilities.

As discussed in **Section 5.12, Transportation and Traffic**, construction activities could temporarily disrupt the Bay Trail and limit access to the trail and adjacent recreation facilities. With **APM REC-1**, flagmen would be used at trail crossings to ensure public safety and safe passage throughout the project area. Also with **APM REC-1**, notification of the organizations that oversee the Bay Trail and adjacent recreational facilities of potential park and trail disruptions during project construction activities would alert users of these facilities to the temporary trail disruptions. While it is possible that trail disruptions during project construction may divert some users of the trails to other trails or recreational facilities, trail disruptions would be temporary and likely not for an extensive period. Large numbers of users are not likely to seek an alternative trail or recreational facility during project construction. There would not be a substantial physical deterioration of the other trails or recreational facility and there would not be an acceleration of physical damage. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. With no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

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?

Construction

NO IMPACT. The project does not propose recreational facilities and only includes reconductoring an existing transmission line and associated work. No construction or expansion of recreational facilities would be required; therefore, no associated environmental impacts would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. With no changes to operations and maintenance, no workforce would be hired or relocate closer to the project site. No impact would occur.

Required Mitigation Measures: None.

5.15.3 References

City of East Palo Alto 2018 – City of Palo Alto. East Palo Alto Community and Economic Development Department, Projects in Process, Cooley Landing Park and Education Center Project, accessed Feb. 27, 2018. https://www.ci.east-palo-alto.ca.us/index.aspx?NID=446

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USFWS 2018 – US Fish & Wildlife Service (USFWS). Don Edwards San Francisco Bay National Wildlife Refuge, Last updated February 13, 2018. https://www.fws.gov/refuge/Don_Edwards_San_Francisco_Bay/

5.16 Transportation and Traffic

TRANSPORTATION AND TRAFFIC Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G

5.16.1 Setting

Highways

The regional transportation system in the project area consists of United States (US) Highway 101 and SR 84. US 101 is a north-south, eight-lane freeway located west of the project. The construction and operation workforces would use the Willow Road or Marsh Road US 101 exits to access the project area from the west and the University Avenue US 101 exit to access the project area from the south. SR 84, also known as the Bayfront Expressway, is a six-lane expressway located in the northern portion of the project area. SR 84 provides direct access to the Ravenswood Substation and work areas. There are also two minor state routes in the project area (SR 109 and SR 114) that are commonly referred to by their street names, University Avenue and Willow Road. In this analysis, SR 109 and SR 114 will be referred to as University Avenue and Willow Road, respectively.

US 101, SR 84, Willow Road, and the northern portion of University Avenue are maintained by the California Department of Transportation (Caltrans). These roads are included in the San Mateo County Congestion Management Program (CMP), which has established level of service standards that vary by road segment. **Table 5.16-1** summarizes the characteristics of the relevant regional and local roadways in the project area. **Table 5.16-2** shows the same information for project intersections.

TABLE 5.16-1 STUDY AREA ROADWAY CHARACTERISTICS

NO.	Roadway Segment	Physical Relationship to Power Line	Classification	Lanes	Agency or Agencies with Jurisdiction	Existing ADT Traffic Volume[5]	Applicable LOS Standard	2017 CMP AM/PM LOS Conditions
1	US 101 (Whipple Avenue to Santa Clara County Line)	Access Road	Interstate	8	Caltrans , San Mateo County Congestion Management Agency	202,000-221,000	LOS F[1]	F/F
2	SR 84 (US 101 to Willow Road)	Access Road	Expressway	6	Caltrans , San Mateo County Congestion Management Agency	45,000-63,000	LOS D[1]	D/C
3	SR 84 (Willow Road to University Avenue)	Access Road				45,000-70,000	LOS E[1]	F/F
4	SR 84 (University Avenue to Alameda County Line)	Access Road, Overhead Crossing				70,000-72,000	LOS F[1]	F/F
5	University Avenue (Kavanaugh Drive to SR 84)	Access Road	Arterial	4	Caltrans , San Mateo County Congestion Management Agency	24,000	LOS E[1]	C/D
6	University Avenue (Kavanaugh Drive to US 101)	Access Road	Arterial	4	City of East Palo Alto	24,000	LOS D [2]	N/A
7	Willow Road (US 101 to SR 84)	Access Road	Arterial	4	Caltrans ,San Mateo County Congestion Management Agency, City of Menlo Park, City of East Palo Alto	51,000	LOS E[1]	B/C
8	Marsh Road	Access Road	Arterial	4	City of Menlo Park	-	LOS C[3]	N/A
9	Bay Road	Overhead Crossing	Collector	2/4 [4]	City of East Palo Alto	-	LOS D[2]	N/A
10	Pulgas Avenue	Access Road	Collector	2	City of East Palo Alto	-	LOS D[2]	N/A
11	Donohoe Street	Access Road	Arterial	4	City of East Palo Alto	-	LOS D[2]	N/A

Notes: [1] San Mateo County CMP LOS standard. [2] City of East Palo Alto General Plan LOS standard. [3] City of Menlo Park General Plan LOS standard. [4] Bay Road is a four-lane collector between University Avenue and Pulgas Street. East of Pulgas Street, Bay Road is an undivided, two-lane roadway. [5] Caltrans 2016, N/A Not available.

TABLE 5.16-2 PEAK HOUR INTERSECTION LOS

NO.	Intersection	Agency or Agencies with Jurisdiction	Applicable LOS Standard	2017 CMP AM/PM LOS Conditions
1	SR 84/University Avenue	Caltrans , San Mateo County Congestion Management Agency	LOS F [1]	F/F
2	SR 84/Willow Road	Caltrans , San Mateo County Congestion Management Agency	LOS F[1]	C/F
3	SR 84/Marsh Road	Caltrans , San Mateo County Congestion Management Agency	LOS F[1]	F/F

Note: [1] San Mateo County CMP LOS standard

Arterial Roads

University Avenue

University Avenue is a four-lane, north-south arterial roadway that connects US 101 and SR 84. University Avenue provides direct access to the SFPUC service road and to Bay Road where the Cooley Landing Substation is located.

Marsh Road

Within the project area, Marsh Road is an east-west arterial roadway between US 101 and SR 84. This portion of Marsh Road has two lanes traveling in each direction and has a posted speed limit of 35 miles per hour.

Willow Road

Between US 101 and SR 84, Willow Road has three lanes traveling in each direction and is an east-west arterial roadway. This portion of Willow Road is state-controlled and designated as SR 114 with a posted speed limit of 40 miles per hour.

Local Roadways

Local roadways in the project area include Bay Road east of University Avenue, Pulgas Avenue, Donohoe Street, and University Avenue between Kavanaugh Drive and US 101. These roads are maintained by the City of East Palo Alto. Marsh Road north of US 101, Willow Road north of Alburni Street, and University Avenue north of Kavanaugh Drive are within the City of Menlo Park. One service road, maintained by the SFPUC, is located off of University Avenue north of Purdue Avenue. This service road would be used to access Staging Area 3.

Bay Road

Bay Road is a four-lane collector street from University Avenue to Pulgas Avenue. East of Pulgas Avenue, Bay Road transitions into an undivided two-lane street that terminates at the Cooley Landing Educational Center. This road provides direct access to the Cooley Landing Substation.

Donohoe Street

Donohoe Street is an east-west arterial roadway. In the project area, Donohoe Street would be used to access University Avenue from the US 101 University Avenue exit.

Pulgas Avenue

Pulgas Avenue is a north-south, two-lane, neighborhood collector street with a posted speed limit of 25 miles per hour. Pulgas Avenue would provide direct access to Bay Road.

Figure 5.16-1 illustrates the regional and local roadways in the project area.

Mass Transit

The San Mateo County Transit District (SamTrans) and Alameda-Contra Costa Transit District (AC Transit) offer bus services throughout the project area. SamTrans Routes 81, 280, 281, 296, 297, and 397 use some of the project access roads, including University Avenue (south of Bay Road), Bay Road (west of Pulgas Avenue), Pulgas Avenue, and Donohue Street. SamTrans bus stops are located between Pulgas Avenue and University Avenue along Bay Road, with the closest stop approximately 1,000 feet west of the Cooley Landing Substation (City of East Palo Alto 2017). AC Transit operates three regional bus routes, the Dumbarton Express lines DB and DB1 and the U line, which provide service from the East Bay to the Peninsula. All routes cross the project alignment at SR 84 and use Willow Road.

Parking

There are two public parking areas for Ravenswood Open Space Preserve and Cooley Landing Park visitors located approximately 0.25-mile east of the Cooley Landing Substation on Bay Road. On-street parking is not available on the portion of Bay Road between Tower 7 and Tower 8 locations. Vista Point, located approximately 0.5-mile north-east of the Ravenswood Substation, provides a public parking area and an entry point for Ravenswood Open Space Preserve visitors. On-street parking is not available along SR 84, between Tower 1 and Tower 2 where reconductoring activities would occur.

Two of the five staging areas are located on PG&E property adjacent to the Ravenswood and Cooley Landing Substations; two are adjacent to eastbound SR 84 on either side of the San Francisco Bay Trail (Bay Trail); and one is located on SFPUC property east of the SFPUC's Ravenswood Valve Lot. These locations do not provide public parking.

Pedestrian Facilities

Pedestrian facilities in the project area consist of the Bay Trail and Cooley Landing Park. One sidewalk, located north-east of Cooley landing Substation, provides access to the Bay Trail from the public parking area. Adjacent to the trail entrance is a crosswalk connecting the northern and southern segments of the trail across Bay Road.

The Bay Trail is a planned 500-mile-long cycling and walking path that traverses the entire San Francisco Bay. Currently 354 miles of the trail have been established, with 227 miles of the trail paved and 127 miles consisting of natural surface (SFBT 2018). Access to the Bay Trail is located adjacent to the Cooley Landing Substation on Bay Road and at the intersection of University Avenue and SR 84.

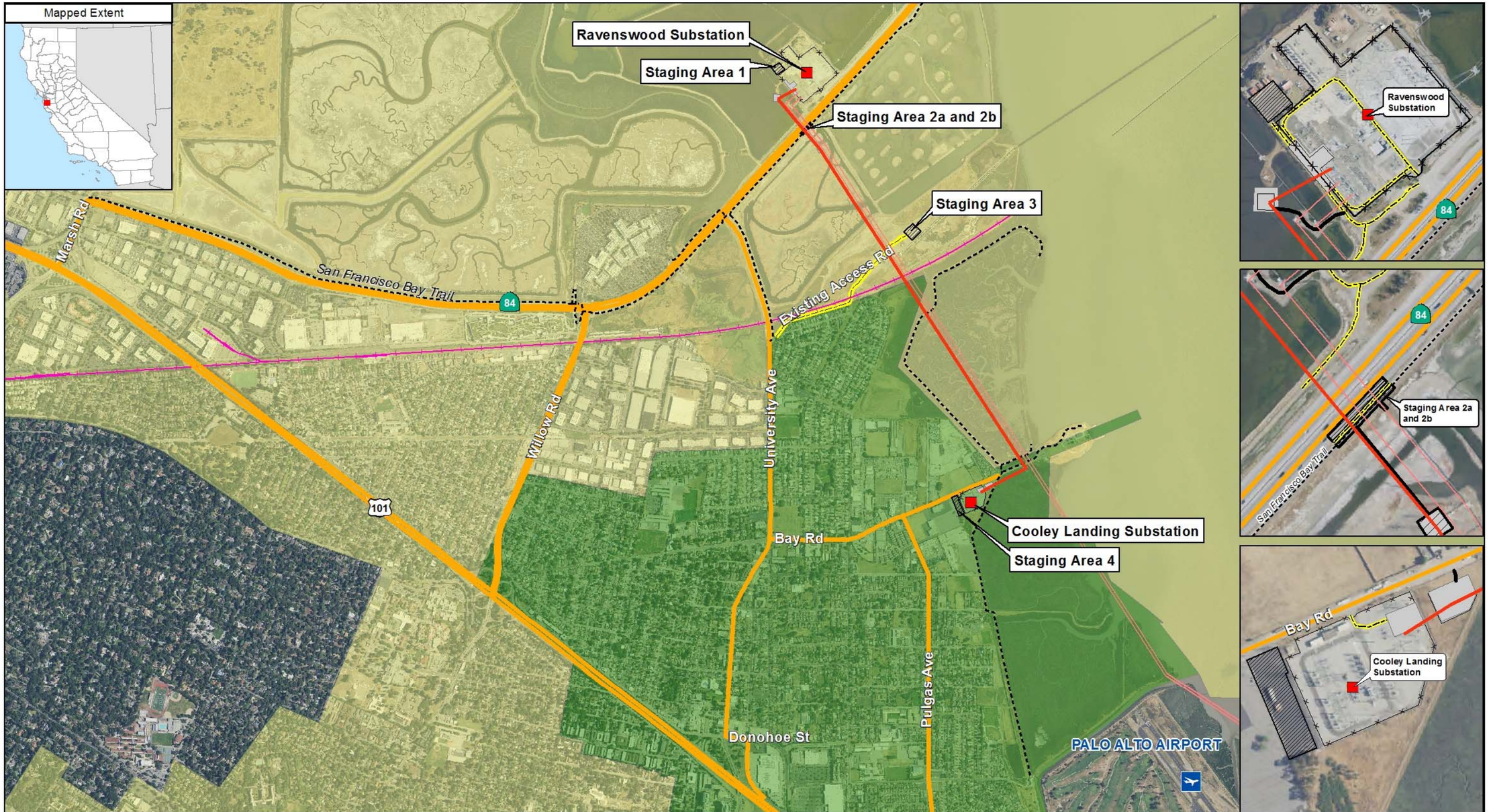

Figure 5.16-1
Transportation and Traffic

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Cooley Landing Park is located where Bay Road terminates, east of the Cooley Landing Substation. The park provides access to the Cooley Landing Education Center and provides a variety of pedestrian facilities such as: picnic tables, an event space rental, and parking for visitors (CL 2018). The park is managed by the City of East Palo Alto.

Bicycle

The San Mateo County Comprehensive Bicycle and Pedestrian Plan, the City of Menlo Park Comprehensive Bicycle Development Plan, and the City of East Palo Alto General Plan Transportation Chapter describe current and planned bicycle facilities within the project area. Bikeway classifications include Class I, Class II, and Class III bikeways. Class I bikeways, typically referred to as bike paths or trails, provide a separate ROW for the exclusive use of bicycles and pedestrians. Class II bikeways, or bike lanes, provide a striped lane for one-way bike travel on a street or highway, and Class III bikeways provide a shared use with pedestrians or vehicles. The Bay Trail is a designated Class I bikeway. Class II bikeways are located along: Willow Road from US 101 to SR 84; University Avenue from SR 84 to Donohoe Street; and Bay Road from University Avenue to Pulgas Avenue. An extension of the Class II bikeway on Bay Road is proposed from Pulgas Avenue to the Bay Trail. These roadways would be used to access the project's alignment and staging areas.

Rail

The Dumbarton Rail Corridor ROW is located between Redwood Junction and Newark Junction in the cities of Menlo Park and Newark. The road crossing of the ROW nearest the project site is located on University Avenue north of the SFPUC service road entrance. Freight and passenger operations are currently not active on this portion of the corridor (SMCTD 2017).

Air Transportation

Palo Alto Airport, located approximately 0.8 mile southeast of the Cooley Landing Substation, is a public airport owned by the City of Palo Alto. The airport has one paved runway, 13,31, measuring 2,443 feet long. Annually, the airport averages approximately 525 aircraft operations per day. Helicopter parking is authorized and three helicopters are based at the airport (AirNav 2018). Portions of the project are located within the airport's traffic pattern zone and height restriction zones (CLUP 2008).

Regulatory Background

Federal

Federal Aviation Administration. Airspace Regulations, Title 14, Part 77, Section 77.9 of the Code of Federal Regulations CFR requires notification of the FAA of any construction or alterations exceeding 200 feet above ground level. This regulation also requires FAA notification of any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of an airport with a runway less than 3,200 feet in length.

Department of Transportation Hazardous Materials Regulations. Title 49, Code of Federal Regulations Sections 171-177 and 350-399, requires proper handling and storage of hazardous materials during transportation.

State

California Department of Transportation. Caltrans is the lead agency responsible for overseeing state highways in California. Encroachment permits shall be obtained for all work within, under, or over the state highway ROW (Caltrans 2018a). In addition, Caltrans has the discretionary authority to issue special permits for the movement of vehicles or loads exceeding statutory limitations on the size, weight, and loading of vehicles described in Chapters 1–5 of Division 15 of the California Vehicle Code ("Size, Weight, and Load").

Caltrans endeavors to maintain a target level of service (LOS) at the transition between LOS C and LOS D. Caltrans acknowledges this may not always be feasible and recommends the lead agency consult with Caltrans to determine the appropriate target LOS. Furthermore, if an existing state highway is operating at less than the appropriate target LOS, the existing measure of effectiveness should be maintained (Caltrans 2002).

On November 9, 2016, Caltrans issued the Local Development Intergovernmental Review Project Interim Guidance Implementing Caltrans Strategic Management Plan 2014-2020 Consistent with Senate Bill (SB) 743 (Interim Guidance). This document provides guidance to Caltrans staff in regard to commenting on local EIRs in a manner consistent with SB 743. Among other things, it suggests that Caltrans should provide recommendations that strive to reduce vehicle miles traveled (VMT) generation and improve pedestrian, bike, and transit service rather than providing recommendations that primarily accommodate motor vehicle travel. In addition, comments related to the State Highway System should focus on VMT and not vehicle delay or a project's effects on road capacity. Many local agencies have developed screening thresholds to indicate when a detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact (OPR 2018).

Any work within the existing ROW would have to comply with Caltrans permitting requirements. This includes a traffic control plan that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (MUTCD) (Caltrans 2018b). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

Santa Clara County. The Santa Clara County Comprehensive Land Use Plan (CLUP) for the Palo Alto Airport contains guidance to minimize the public's exposure to excessive noise and safety hazards while promoting the orderly expansion of the airport. The CLUP Height Compatibility Policy H-2 requires projects that exceed the FAR Part 77 surface to file FAA Form 7460-1, Notice of Proposed Construction or Alteration.

San Mateo County. The 2017 San Mateo CMP sets LOS standards for the CMP roadway network. LOS standards vary by roadway segment and intersection. The San Mateo County CMP Transportation Impact

Analysis (TIA) policy applies to General Plan updates, Specific Area Plans, and modifications to the CMP roadway network (C/CAG 2017). The project's construction activities are not considered a General Plan update, Specific Area Plan, nor will they modify the CMP roadway network.

City of Menlo Park. The Menlo Park General Plan, Circulation Element, Policy CIRC-3.4 strives to maintain LOS D at most of the city-controlled signalized intersections during peak hours. For the purposes of construction, the City of Menlo Park has not applied the above operational LOS Goal (MP 2017).

City of East Palo Alto. Goal T-7 of the East Palo Alto General Plan's Transportation Chapter, Chapter 6, states that the city strives to maintain LOS D on the city's roadway system. At signalized intersections, an impact is considered significant if the project's operations: causes degradation from LOS D or better to LOS E or LOS F; exacerbates LOS E or LOS F conditions by increasing critical delay by more than 4 seconds and increasing volume to capacity ratio by 0.01 or more; or increases the volume to capacity ratio by more than 0.01 at intersections that exhibit unacceptable operations, even if the calculated LOS is acceptable. At unsignalized intersections, operational impacts are considered significant if they cause operations to degrade to LOS E or LOS F; exacerbate LOS E or LOS F conditions by increasing control delay; or cause traffic volumes under project conditions to exceed the Caltrans Peak Hour Volume Warrant Criteria (EPA2016). For the purposes of construction, the City of East Palo Alto has not applied the above operational LOS Goal (City of East Palo Alto 2018).

5.16.2 Environmental Impacts and Mitigation Measures

PG&E proposes to implement the following APMs for Transportation and Traffic as part of the project.

APM TRA-1: Traffic Management Implementation PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices*, 2017 edition.

APM TRA-2: Air Transit Coordination. PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E's helicopter operator will comply with all applicable FAA regulations and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan within 14 days of helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to ensure compliance with all requirements.
- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction.

Methodology

With respect to traffic and transportation under threshold (a), below, a project may result in a significant impact if the direct or indirect changes in the environment due to the project would cause substantial

disruption or delay to traffic flows on the existing roadway system. Post-construction maintenance activities for the replaced line conductors would not deviate from current practices and would continue to be inspected annually or as needed when driven by an event, such as an emergency. The project is expected to result in less conductor breakage due to corrosion, resulting in fewer events that require emergency response.

Therefore, this analysis focuses on the short-term traffic impacts related to project construction, including increases in traffic volumes, temporary loss of travel lanes, and potential safety effects, and the mitigation measures to reduce these construction effects of the project.

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?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Construction activities associated with the project would include the movement of light-, medium-, and heavy-duty vehicles over US 101, SR 84, University Avenue, Willow Road, and local roads. Construction related vehicles would generally travel to the five temporary staging areas where the base of operations would occur. Temporary staging areas would be used to accommodate construction materials and equipment, worker parking, helicopter landing zones (Staging Areas 1, 3, and 4), and meeting areas for project management and construction workers. Construction workers, equipment, and materials would be transported from the staging areas to work sites. Large equipment would not be moved daily once it is staged at the work areas. Project work areas would be accessed using a combination of public roads, existing paved and gravel roads, overland routes, and matted temporary access routes across marshlands. No new temporary access roads would be constructed for the project, no grading is anticipated, and no permanent access roads would be created.

The project would generate approximately 90 daily vehicle trips[1] (45 one-way trips during the morning peak added to 45 one-way trips during the evening peak) (PGE 2018b). Construction-related traffic trips are not expected to access the project site using the same route but would instead be dispersed on all project roadways allowing workers to access the project's five staging areas. Therefore, the actual increase in traffic on individual roads is expected to be lower than 90 daily peak hour one-way trips. The primary effect from construction traffic would be a minor temporary and intermittent reduction of roadway capacities due to roadway usage by the project's trucks/vehicles.

Project construction activities (e.g. installation of guard structures, OPGW peaks, cage top extensions, K-rails and transport of project materials to Tower 2 and Tower 8) would require temporary lane closures on SR 84 and Bay Road. Temporary closure of travel lanes could significantly impact the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, railroad tracks, pedestrian and bicycle routes, and mass transit. Jurisdictions such as Caltrans and cities potentially affected by the project require implementation of a Traffic Management Plan (TMP) to reduce or avoid impacts caused by project construction and reconductoring activities. TMPs are prepared as part of jurisdictions' encroachment permit

[1] Project trucks and construction employee trips

requirements. **APM TRA-1** requires PG&E to obtain and comply with state and local road encroachment permits for roads crossed by the project. However, **APM TRA-1** lacks sufficient detail about how PG&E would address lane closures. Therefore, impacts associated with temporary lane closures are considered significant without mitigation. To reduce impacts to less than significant, **MM TRA-1** supersedes **APM TRA-1** and requires lane closures occur during off peak traffic times. With implementation of **MM TRA-1**, impacts related to traffic congestion due to lane closures would be less than significant.

Operation and Maintenance

NO IMPACT. The project consists of modifications to existing facilities within an existing utility corridor. No adverse changes in maintenance and operations activities are anticipated with implementation of the project**.** Furthermore, replacement of the Ravenswood-Cooley Landing Line conductors would result in less conductor breakage due to corrosion, resulting in fewer events that require emergency response. Therefore, there would be no impacts related to the performance of the circulation system from operation and maintenance of the project.

MM TRA-1: Transportation Management Plan (Supersedes **APM TRA-1).** PG&E will obtain all necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the SR 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices,* 2018 edition. A Caltrans-approved Transportation Management Plan (Plan) will be prepared to address impacts to vehicular, bicycle, and pedestrian traffic caused by traffic restrictions or detours. The Plan must address the following:

- Pedestrian and bicycle access through the construction site (between Staging Areas 2a and 2b and other locations along the alignment) will be maintained at all times and will adhere to the Americans with Disabilities Act (ADA) regulations and comply with Caltrans' Temporary Pedestrian Facilities Handbook.
- Prior to construction PG&E will survey and photograph portions of the Bay Trail that will be used during construction. If project-related construction activities damage portions of the Bay Trail, PG&E will restore those facilities in compliance with current design standards and ADA regulations.
- Lane closures will occur during off-peak traffic hours (i.e. 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.)
- Advance public notification of lane closures will be provided if transit routes require temporary rerouting. Public notification will include lane closure schedule, location, and duration of public transit reroute.
- Project-related traffic will be required to use northbound University Avenue to enter and depart from the SFPUC service road, unless a flagger is present to direct traffic on University Avenue while the vehicles turn left into or out of the service road driveway.

- PG&E will include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure construction activities and associated lane closures and detours will not significantly affect emergency response vehicles. Emergency service providers will be notified of the timing, location, and duration of construction activities. PG&E will submit verification of its consultation with emergency service providers to the CPUC. All roads will remain passable to emergency service vehicles at all times.

Required Mitigation Measures: MM TRA-1

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?

Construction

LESS THAN SIGNIFICANT IMPACT. The project is located in San Mateo County and spans portions of the city of Menlo Park and the city of East Palo Alto. As noted above in the Regulatory Setting, the CMP transportation impact analysis guidelines do not apply to temporary effects associated with construction projects (like the project) that are transitory in nature. In addition, a VMT analysis is not required for projects that generate less than 110 trips per day, which generally are assumed to cause a less than significant transportation impact (OPR 2018).

Operation and Maintenance

NO IMPACT. The project would be unstaffed during operations. Maintenance activities for the power line would not adversely change from current practices and would continue to be inspected annually or as needed when driven by an event, such as an emergency. Furthermore, replacement of the Ravenswood-Cooley Landing Line conductors would result in less conductor breakage due to corrosion, resulting in fewer events that require emergency response. For these reasons, project operations and maintenance would have no impact.

Required Mitigation Measures: None

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?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The proposed project would require the use of two light duty helicopters and one medium duty helicopter to remove and install conductors, install cage top extensions and OPGW peaks, and transport workers and materials to and from the towers. Heavy loads (e.g., cage top extensions, OPGW peaks) would not be transported over roads or habitable structures (PGE 2017a). Staging Areas 1, 3, and 4 would provide designated areas for temporary helicopter landing zones. All helicopters would be stored overnight at a local airport or another appropriately equipped facility.

Palo Alto Airport is located less than a mile from the southern portion of the project. The CLUP for the airport identifies safety zones and height restriction areas located within the project area. Because local airport land use commissions do not have discretionary authority over existing land uses or PG&E utility projects, the CLUP requirement to review proposed new land uses does not apply to this

project. However, PG&E's project is consistent with CLUP-identified safety zones and height restrictions. Towers 8 and 9 are located within the traffic pattern zone. The CLUP states that the traffic pattern zone is routinely overflown by aircraft operating in the airport traffic pattern. Towers 4 through 9 are located within the airport's height restriction zone that has been established by the CLUP using Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. The height restriction altitude gradually increases as it moves further away from the airport runway, with the most restrictive altitude being closest to the airport runway. The Cooley Landing Substation and Towers 7 through 9 are within the area mapped for a height restriction of approximately 154 feet; moving north the restricted height increases and is approximately 254 feet at Tower 6, approximately 304 feet at Tower 5, and approximately 354 feet at Tower 4. No height restrictions are defined in the project area north of Tower 4.

Title 14, Part 77.9 of the Code of Federal Regulations requires FAA notification for any construction or alteration of navigable airspace exceeding 200 feet above ground level (AGL). It also requires notification for construction or alterations within 10,000 feet of an airport with a runway less than 3,200 feet in length if the height of the construction or alteration exceeds a slope of 50 to 1 extending outward and upward from the nearest point of the nearest runway of the airport. No project towers exceed the 200-foot threshold, including the installation of the cage top extensions and OPGW peaks. Because Towers 3 through 9 are located within 10,000 feet of the airport, the FAA would require notification if a project feature exceeds the FAA's threshold slope height. Of the nine towers, only Towers 6 through 9 exceed the FAA's threshold. One 55-foot tall tubular steel pole (TSP) would be installed at the Ravenswood Substation and one 80-foot tall TSP would be installed at the Cooley Landing Substation. The TSP located at the Cooley Landing Substation would not exceed the FAA's threshold slope height of 89-feet. The TSP located at the Ravenswood Substation is located approximately 11,600 feet from the airport; therefore, this TSP is not subject to the FAA's threshold slope height (PGE 2018e).

PG&E submitted FAA Form 7460-1, Notice of Proposed Construction or Alteration, for all nine towers. All towers received a Determination of No Hazard from the FAA (FAA 2018). PG&E will file FAA Form 7460-2, Notice of Actual Construction or Alteration, within five days after construction reaches its greatest height. If construction equipment is used for the project, such as a construction crane, that exceeds the FAA slope height thresholds, PG&E will file form 7460-1 with the FAA. Towers 8 and 9 are located directly off the departure end of the airport's main runway within the traffic pattern zone where project helicopter activity would occur for the installation of cage top extensions, OPGW peaks, and transmission line reconductoring. Helicopter activity could increase the risk of air traffic collisions, which would be a significant impact. **APM TRA-2** ensures compliance with all applicable FAA regulations as well as coordination with local airports for all project-related helicopter activities before and during construction. However, **APM TRA-2** lacks specific detail in addressing the issuance of a Notice to Airmen (NOTAM). Therefore, impacts would remain significant. **MM TRA-2** would supersede **APM TRA-2** and requires PG&E to coordinate with the Palo Alto Airport manager for the issuance of a NOTAM informing pilots departing from departure runway 31/13 of project-related helicopter activity. Impacts would be less than significant with implementation of **MM TRA-2**.

MM TRA-2: Air Transit Coordination. (Supersedes **APM TRA-2).** PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E's helicopter operator will comply with all applicable FAA regulations~~,~~ and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan at least 14~~

~~days prior to helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to comply with all requirements.

- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.

Required Mitigation Measures: MM TRA-2

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)?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Construction vehicles entering and exiting the SFPUC service road entrance on to University Avenue may pose safety issues to motorists. Construction vehicles heading southbound on University Avenue would turn left, crossing northbound traffic to enter the service road entrance. Construction vehicles exiting the service road to travel southbound on University Avenue would also turn left, crossing northbound traffic. The service road driveway/University Avenue intersection is controlled by a stop sign at the driveway exit and there are no designated turning lanes on this portion of University Avenue which substantially increases potential traffic hazards. This could increase the risk of traffic accidents, which would be a significant impact. As specified in **APM TRA-1,** PG&E will adhere to traffic control guidelines on state highways outlined in the California MUTCD. However, **APM TRA-1** lacks sufficient detail about how PG&E would address hazards from construction traffic accessing the service road entrance to avoid potential traffic hazards on University Avenue. Therefore, the impact would be significant without mitigation. To reduce impacts to less than significant, **MM TRA-1** would supersede **APM TRA-1** and require construction traffic use northbound University Avenue to enter and depart from the service road, unless a flagger is present to direct traffic on University Avenue while construction vehicles turn left heading south into or out of the service driveway. With implementation of **MM TRA-1**, impacts due to traffic hazards would be less than significant.

Operation and Maintenance

NO IMPACT. Traffic from operation and maintenance of the project would not create increase in hazards due to design feature or incompatible uses. There would be no impact.

Required Mitigation Measures: MM TRA-1

e. Would the project result in inadequate emergency access?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Reconductoring activities associated with crossing over SR 84 and Bay Road would require temporary lane closures. Closure of lanes may significantly impact emergency access; therefore, impacts are considered significant without mitigation. **APM TRA-1** requires the use of traffic controls to minimize impacts to emergency access in the project area.

However, the APM does not require notification of local emergency service providers or actions to maintain emergency access on project roadways at all times. To minimize impacts and ensure they are less than significant, **MM TRA-1** requires notification of local emergency service providers prior to and during construction and reconductoring activities to maintain emergency access on project roadways at all times. Implementation of **MM TRA-1** would ensure potential impacts to emergency service provider access would be less than significant.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities associated with the project would not result in permanent closure of roads or lanes. No temporary road or lane closures are planned during operation or maintenance. There would be no impact to emergency access due to operation or maintenance activities.

Required Mitigation Measures: MM TRA-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?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The project could adversely affect public transit as a result of temporary lane closures during project construction and reconductoring. Public transit on Bay Road could be rerouted due to lane closures associated with the transportation of construction equipment and materials to Tower 8. Given the potential for lane closures affecting transit, impacts are considered significant. If lane closures require rerouting of public transportation operations, PG&E, as part of **MM TRA-1,** is required to ensure that lane closures occur during off peak hours and advance public notification is given.

Construction of the project could adversely affect bikeways that would be crossed by the project as a result of increased construction-related traffic along or near the Bay Trail due to reconductoring activities. For example, staging areas 2a and 2b are located on either side of the Bay Trail, which runs parallel to SR 84. This portion of the trail is located in Caltrans ROW. Construction workers and equipment would likely pass over this portion of the trail to complete foundation improvements to Tower 2, which could result in a potential project-related damage to the Bay Trail from the movement of construction equipment over the surface of the asphalt trail. In addition to reconductoring, installation of guard structures, netting, and the OPGW line could result in components falling, inadvertently striking a pedestrian or bicyclist and decreasing user safety. The impact could be significant.

APM REC-1 will ensure PG&E coordinates with ABAG, MROSD, the cities of Palo Alto and East Palo Alto, and the USFWS to disclose potential park and trail disruptions. PG&E will also provide flagmen at sections of the trail where overhead construction and reconductoring activities would take place to ensure public safety and safe passage through the project area. This will alert pedestrians and bicyclists of construction work that would take place along the Bay Trail. It would also assist with pedestrian's safe passage through areas where construction and reconductoring activities would occur. See **Section 5.15, Recreation**, for a full description of **APM REC-1**. **APM TRA-1** requires transportation and encroachment permits from Caltrans and local jurisdictions when performing work within road ROW, as well as adherence to the California MUTCD. However, **APM TRA-1** does not

provide specific details to be included in a TMP related to the safe passage of bicyclists and pedestrians compliant with ADA regulations through the construction worksite and does not address potential damage to the Bay Trail resulting from project-related construction activities. Therefore, impacts would remain significant. As part of **MM TRA-1**, which would supersede **APM TRA-1**, PG&E is required to comply with the Temporary Pedestrian Facilities Handbook to ensure safe passage through the construction work site during short-term project construction. Requirements include: ensuring pedestrian facilities are maintained and kept clear of obstructions, placement of warning signage and installation of traffic control devices (Caltrans 2014). **MM TRA-1** also requires PG&E to survey the trail prior to the start of construction and repair trail damage caused by construction-related activity in compliance with current design standards and ADA regulations. Implementation of **MM TRA-1** and **APM REC-1** would ensure performance and reduce potential safety impacts to bicycle and pedestrian facilities to a less than significant level.

Operation and Maintenance

NO IMPACT. Operation and maintenance of the project would not eliminate alternative transportation corridors or facilities pertaining to bicycle lanes or public transit, nor would it include changes in policies or programs that support modes of alternative transportation. No adverse changes in maintenance and operations activities are anticipated with implementation of the project**.** Furthermore, replacement of the Ravenswood-Cooley Landing Line conductors would result in less conductor breakage due to corrosion, resulting in fewer events that require emergency response. Therefore, there would be no impact to pedestrian or transit facilities associated with operation and maintenance of the project.

Required Mitigation Measures: MM TRA-1

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5.17 Tribal Cultural Resources

TRIBAL CULTURAL RESOURCES Would the project 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:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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)?	☐	☐	☐	☒
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.	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

This section describes the environmental and regulatory settings and impacts on tribal cultural resources that could result from implementing the project. There is a close connection between tribal cultural resources and prehistoric cultural resources. As such, please refer back to **Section 5.5, Cultural and Paleontological Resources** for a more detailed analysis of prehistoric cultural resources. In addition, there is considerable overlap between tribal cultural resources and other types of cultural resources that one might classify as historical or unique archaeological resources under CEQA. As such, laws, regulations, policies, and standards pertaining to cultural resources can apply to tribal cultural resources and are discussed in the Regulatory Setting.

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group, such as Native Americans, or immigrants from Africa, Europe, or Asia. They may include traditional resource collecting areas, ceremonial sites, topographic features, value-imbued landscapes, cemeteries, shrines, or ethnic neighborhoods and structures. Ethnographic resources can also be variations of natural resources and standard cultural resource types. They can be places assigned cultural significance by traditional users, such as subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways.

Tribal cultural resources are a category of historical resources recently introduced into CEQA by Assembly Bill 52 (AB 52) (Stats. 2014). Tribal cultural resources are resources that are any of the following: sites, features, places, cultural landscapes, sacred places, or objects that are included in or determined eligible to the CRHR, or are included on a local register of historical resources as defined in Public Resources Code, section 5020.1, subdivision (k). Tribal cultural resources can be prehistoric, ethnographic or historic, as defined above.

5.17.1 Setting

Approach to Analysis of Tribal Cultural Resources

The information presented in this section was compiled from the PEA, confidential cultural resources appendices to the PEA, and independent research (**PGE 2017a**, **PGE 2018a**, **Stantec 2018**, and **Waechter and Scher 2017**).

Records Search and Historical Research

Records search and historical research are discussed in **Section 5.5, Cultural and Paleontological Resources**.

Buried and Submerged Archaeological Sensitivity

Buried and submerged archaeological sensitivity is discussed in **Section 5.5, Cultural and Paleontological Resources**.

Native American Consultation

AB 52 requires lead agencies to consult with all California Native American tribes that have traditional and cultural affiliation with the geographic area of a project, and that have previously requested consultation. To trigger the requirement to consult under AB 52, a tribe must first send the lead agency a written request for formal notification of any projects within the geographic area with which they are traditionally and culturally affiliated. The CPUC has not received any requests for formal notification from tribes that have traditional and cultural affiliation with the geographic area of the project. Therefore, no formal notification or consultation under AB 52 is required.

Independent of AB 52 requirements, the CPUC contacted the NAHC on December 8, 2017, to obtain a search of the Sacred Lands File and a list of California Native American tribes who could be interested in the project. The NAHC responded on December 20, 2017 (Lienert 2017) that results of the Sacred Lands File search were negative and provided a list of five California Native American tribes to contact. Letters were emailed to the tribes on February 22, 2018 (**Table 5.17-1**). At the request of one tribe, a letter was emailed along with the confidential cultural resources study (Waechter and Scher 2017) for the project to all tribes on March 9, 2018, and paper copies were sent via US Mail on March 12, 2018. **Appendix C** provides pertinent documentation related to tribal consultation.

TABLE 5.17-1 CALIFORNIA NATIVE AMERICAN TRIBES CONTACTED FOR THIS PROJECT

Tribe	Cultural Affiliation	Communication to Date
Amah Mutsun Tribal Band of Mission San Juan Bautista	Ohlone/Costanoan	2/22/18 – CPUC emailed letter 3/09/18 – CPUC emailed letter and confidential document 3/12/18 – CPUC sent letter and confidential document via US Mail
Northern Valley Yokuts Tribe	Ohlone/Costanoan, Northern Valley Yokuts, Bay Miwok	2/22/18 – CPUC emailed letter 3/09/18 – CPUC emailed letter and confidential document 3/12/18 – CPUC sent letter and confidential document via US Mail
Muwekma Ohlone Indian Tribe of the SF Bay Area	Ohlone/Costanoan	2/22/18 – CPUC emailed letter 3/09/18 – CPUC emailed letter and confidential document 3/12/18 – CPUC sent letter and confidential document via US Mail
The Ohlone Indian Tribe	Ohlone/Costanoan, Bay Miwok, Plains Miwok, Patwin	2/22/18 – CPUC emailed letter 2/24/18 – Tribe requested a copy of Phase I literature search and foot survey report 3/09/18 – CPUC emailed letter and confidential document 3/12/18 – CPUC sent letter and confidential document via US Mail
Indian Canyon Mutsun Band of Costanoan	Ohlone/Costanoan	2/22/18 – CPUC emailed letter 3/09/18 – CPUC emailed letter and confidential document 3/12/18 – CPUC sent letter and confidential document via US Mail

Archaeological Survey

Discussion regarding the archaeological survey for the project can be found in **Section 5.5, Cultural and Paleontological Resources**.

Ethnography

The Costanoans have inhabited the Bay Area since time immemorial. The designation Costanoan comes from the Spanish Costaños, or "coast people" (Kroeber 1976). Costanoans are broadly divided by eight separate but related languages and further subdivided by tribelets.

The Costanoan language is similar to Miwok, and is part of the Utian language family within the Penutian stock. Ramaytush is presumably the language spoken by those in the area of the project.

Costanoan tribelets are the basic unit of political organization, with chiefs, either women or men, descending from their patrilineal relative. The Costanoan tribelet is a separate and politically autonomous entity, each consisting of as few as 50 and as many as 500 people who, aside from sharing political identity, also shared a common dialect and economic rights to resource areas in specific territories (Bocek 1992). There is one tribelet in close proximity to the project site, Puichon, or Arroyo de San Francisco (Levy 1978and Milliken 1995).

Each tribelet consisted of one or more villages where tribelet members resided (Levy 1978). Kroeber (1976) indicates that two villages may have been near the project site, *Kino-te* and *Posol-mi*. A common archaeological manifestation of a Costanoan village site is an associated shell mound deposit. Mussels are the primary shells that constitute these mounds (Kroeber 1976).

Like most other Native Americans in California, acorns were the staple food of the Costanoan people in the East Palo Alto and Menlo Park regions. Other nuts such as buckeye, California laurel, and hazelnuts were also eaten. The Costanoans practiced a type of slash and burn agriculture to promote the growth of the nuts and seeds upon which they relied. The primary mammals taken by the Costanoan included the black-tailed deer, elk, antelope, grizzly bear, mountain lion, sea lion, and whale. Waterfowl, salmon, steelhead, and lampreys were also important components of the Costanoan diet (Levy 1978).

Trade was important for the Costanoan groups, and their primary partners in trade were the Plains Miwok, Sierra Miwok, and Yokuts. The Costanoan provided coastal resources such as mussels, abalone shell, dried abalone, and salt to the Yokuts in exchange for pinon pine nuts. The Miwok obtained olive snail shells from the Costanoans. (Davis 1961.) Warfare was conducted both between Costanoan tribelets and also between the Costanoans and the Esselen, Salinan, and Northern Valley Yokuts (Levy 1978).

Thatched, domed houses were the most common type of structure for the Costanoans. They were usually thatched with tule, carrizo, wild alfalfa, grass, or ferns. The Ramaytush also used split redwood or redwood bark for conical houses. Sweathouses along the banks of rivers were also constructed, in addition to dance enclosures and assembly houses (Levy 1978).

While men were typically naked, women wore two short skirts; the front skirt was made of tule or grass and the back skirt made of buckskin or sea otter skins (Kroeber 1976). Woven strips of sea otter, rabbit, or duck skin were used for blankets (Levy 1978).

Coyote, falcon, eagle, and hummingbird are important animals in Costanoan origin stories (Kroeber 1976; Milliken et al. 2009). Redwood trees and the sun, considered sacred objects, play an important role in ceremony (Kroeber 1976). Music was often connected to myth and ritual; Costanoans used single bird-bone tubes to create whistles and pieces of laurel wood to create the split-stick rattle (Levy 1978). Twining was the most important technique in Costanoan basketry traditions (Milliken et al. 2009). The baskets were typically made from willow, rush, tule, and "cut-grass" roots and ornamented with abalone pendants, woodpecker scalps, and quail plumes (Levy 1978). Costanoans also used tule to make rafts used to cross San Francisco Bay (Kroeber 1976).

Bodies were either buried or cremated on the day of death. The Chalon and Rumsen groups likely practiced inhumation, while the Chochenyo and Ramaytush, from the area of the project, usually cremated their dead. Cremation also entailed burning the deceased's property (Kroeber 1976; Levy 1978).

A total of seven Spanish missions were established in Costanoan territory between 1770 and 1797. By 1810 the last Costanoan village was subsumed within the mission system. Missions in the Bay Area mixed together various language and cultural groups including the Esselen, Foothill Yokuts, Plains Miwok, Saclan Miwok, Lake Miwok, Coast Miwok, and Patwin. The missions closest to the project area are San Francisco de Asis, built in 1776 and Santa Clara de Asis, built in 1777. (Levy 1978.) The members of the Puichon tribelet went to Mission San Francisco between 1781 and 1794 and to Mission Santa Clara between 1781 and 1805 (Milliken 1995).

Detailed prehistoric and historic context statements can be found in **Section 5.5, Cultural and Paleontological Resources**, of this document.

Regulatory Background

Federal

National Environmental Policy Act. USACE permitting of the project would constitute a federal action subject to NEPA (42 U.S.C., § 4321 et seq.). NEPA requires federal agencies to consider the environmental impacts—including impacts on cultural resources—of their actions in a public review process before implementation.

National Historic Preservation Act. PG&E would likely need to acquire a permit from the USACE under Section 404 of the Clean Water Act. This federal permit requirement would require the USACE to comply with Section 106 of the National Historic Preservation Act (54 U.S.C., § 3061) and its implementing regulations (36 C.F.R., § 800), which detail how federal agencies are to assess the effects of their undertakings on historic properties (those cultural resources that are eligible for or listed on the NRHP).

State

Assembly Bill 52. AB 52 amended CEQA to define California Native American tribes, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. A "California Native American tribe" is a "Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004" (Pub. Resources Code, § 21073). Lead agencies implementing CEQA are responsible for conducting tribal consultation with California Native American tribes about tribal cultural resources within specific time frames, observant of tribal confidentiality, and if tribal cultural resources could be impacted by project implementation. As discussed above, the CPUC has not received any requests for formal notification from tribes that have traditional and cultural affiliation with the geographic area of the project. Therefore, no formal notification or consultation under AB 52 is required.

Tribal cultural resources are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the CRHR.
    b. Included in a local register of historical resources as defined in the Public Resources Code, section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in the Public Resources Code, section 5024.1(c). In applying the aforesaid criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (Pub. Resources Code, § 21074, subd. (a).)

A cultural landscape that meets the criteria of Public Resources Code, section 21074, subdivision (a), is a tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope (Pub. Resources Code, § 21074(b)). Historical resources, unique archaeological resources, and non-unique archaeological resources, as defined at Public Resources Code, sections 21084.1, 21083.2, subdivision (g), and 21083.2, subdivision (h) may also be a tribal cultural resource if they conform to the criteria of Public Resources Code, section 21074, subdivision (a).

AB 52 also amended CEQA to state that a project with an impact that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2).

California Environmental Quality Act and California Register of Historical Resources

More information on CEQA's provisions for cultural resources and the CRHR can be found in **Section 5.5, Cultural and Paleontological Resources**.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

City of Menlo Park. The City of Menlo Park has goals and policies for the protection of cultural resources, which include tribal cultural resources, in its general plan and zoning ordinance. General plan protections are found in its land use, open space, conservation, noise, and safety elements, as summarized below.

- Policy LU-7.8: Cultural Resource Preservation. Promote the preservation of buildings, objects, and sites with historic and/or cultural significance.
- Policy OSC3.1: Prehistoric or Historic Cultural Resources Investigation and Preservation. Protect and enhance cultural and historical resources for their aesthetic, scientific, educational, and cultural values.
- Policy OSC3.2: Prehistoric or Historic Cultural Resources Preservation. Require significant historic or prehistoric artifacts to be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation, and to ensure compliance with local, state and federal regulations.
- Policy OSC3.3: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal. Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the city identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.
- Policy OSC3.4: Prehistoric or Historic Cultural Resources Found During Construction. Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
- Policy OSC3.5: Consultation with Native American Tribes. Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding general plan amendments and land use policy changes.
- Policy OSC3.6: Identification of Potential Historic Resources. Identify historic resources for the historic district in the zoning ordinance and require design review of proposals affecting historic buildings.

Other local laws and regulations bearing on cultural resources are discussed in **Section 5.5, Cultural and Paleontological Resources**.

5.17.2 Environmental Impacts and Mitigation Measures

The PEA did not include a separate section dedicated to tribal cultural resources; rather a discussion of cultural and tribal cultural resources with respect to the project was provided in the cultural resources section of the PEA.

APM CUL-2, **APM CUL-3**, and **APM CR-4,** described fully in **Section 5.5, Cultural and Paleontological Resources,** are relevant to tribal cultural resources and would be implemented as part of the project. **APM-2** trains construction personnel to recognize exclusion boundaries and potential cultural resources, which improves personnel's ability to avoid damaging historical resources. **APM-3** establishes clear procedures and responsible personnel to handle inadvertent discoveries of cultural resources during

construction; ground disturbing activities within 100 feet of an inadvertently discovered cultural resource would be halted, and construction would not recommence until the resource has been evaluated by a qualified archaeologist and the resource is properly treated. **APM CR-4** requires work to stop within 100 feet of an inadvertent discovery of human remains and protection of the remains until the appropriate authorities are notified and proper treatment of the remains determined and carried out. See **Section 5.5, Cultural and Paleontological Resources,** for full descriptions of **APM CUL-2**, **APM CUL-3**, and **APM CR-4**.

Would the project 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)?

Construction

NO IMPACT. There would not be any impacts to tribal cultural resources that are listed or eligible for listing in the CRHR or local register of historical resources, because none are known to exist in the project area.

Operation and Maintenance

NO IMPACT. There would not be any impacts to tribal cultural resources that are listed or eligible for listing in the CRHR or local register of historical resources, because none are known to exist in the project area.

Required Mitigation Measures: None.

(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?

Construction

LESS THAN SIGNIFICANT. Consultation with California Native American tribes did not result in the identification of any tribal cultural resources that could be impacted by the project. However, background research suggests that the project area is located in an area near ethnographically known villages. Although the project area has potential to contain submerged or buried tribal cultural resources, the amount of ground disturbance (approximately 2 acres) involved in the construction of the project renders the probability of discovery low. Should inadvertent discoveries of submerged or buried, listed or eligible-for-listing, tribal cultural resources occur during construction, implementation of **APM CUL-2**, **APM CUL-3**, and **APM CR-4** would ensure impacts to such resources would be less than significant. **APM CUL-2** trains construction personnel to recognize exclusion boundaries and potential cultural resources, which improves personnel's ability to avoid damaging historical resources. **APM CUL-3** establishes clear procedures and responsible personnel to handle inadvertent discoveries of cultural resources during construction; ground disturbing activities within 100 feet of an inadvertently discovered cultural resource would be halted, and construction would not recommence until the resource has been evaluated by a qualified archaeologist, including oral

interviews (such as with the appropriate California Native American tribes), and the resource is properly treated. **APM CR-4** requires work to stop within 100 feet of an inadvertent discovery of human remains and protection of the remains until the appropriate authorities are notified and proper treatment of the remains determined and carried out.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line would not change from current practices. There would be no further excavation during project operation and maintenance therefore there would be no impact to tribal cultural resources.

Required Mitigation Measures: None.

5.17.3 References

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5.18 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental criteria established by CEQA Guidelines, Appendix G.

5.18.1 Setting

Wastewater Service

Sanitary sewer services in the project area are provided by West Bay Sanitary District (WBSD) and East Palo Alto Sanitary District (EPASD). WBSD provides wastewater collection and conveyance services to the City of Menlo Park, Atherton, and Portola Valley utilizing a sewer system composed of approximately 260 miles of gravity sewer pipelines and 11 lift stations (WBSD 2016). Raw wastewater collected by WBSD is sent to Silicon Valley Clean Water for treatment and discharge to the San Francisco Bay (City of Menlo Park 2017b). EPASD on the other hand, provides wastewater collection and conveyance services for the City of East Palo Alto and parts of the City of Menlo Park (EPASD 2017 and City of Palo Alto 2017). The plant serves the communities of Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford University, and the EPASD (City of Palo Alto 2017). Wastewater collected by EPASD is sent to the Palo Alto Regional Water Quality Control Plant for treatment and disposal to San Francisco Bay or Matadero Creek as permitted by NPDES Permit No. CA0037834.

Water Supply

SFPUC provides up to 184 million gallons of water per day to 27 jurisdictions located in San Mateo, Alameda, and Santa Clara Counties. These entities receive over two-thirds of the SFPUC's Regional Water System watershed supply. Fourteen of the 27 jurisdictions receive 100 percent of their water from the SFPUC, including the City of Menlo Park (SFPUC 2011). SFPUC would be the primary water supplier in the project area.

City of Menlo Park

Water service in the City of Menlo Park is provided by Menlo Park Municipal Water District (MPMWD) which purchases water from the SFPUC. SFPUC delivers water to MPMWD from the San Francisco Regional Water System. In 2015, MPMWD supplied an average of 2.32 million gallons of water per day to more than 16,000 residents through 4,300 service connections within two service areas: the upper zone (near Interstate 280 and includes the Sharon Heights area) and the lower zone (east of El Camino Real) (Menlo Park Municipal Water Department 2015).

For emergency situations, the city has arrangements in place with California Water Service, the Palo Alto Park Mutual Water Company, the O'Connor Tract Cooperative Water District, City of East Palo Alto, and Redwood City to get service through them. (Bay Area Water Supply and Conservation Agency 2017).

City of East Palo Alto

The City of East Palo Alto receives approximately 80 percent of its water from the City of East Palo Alto water system, operated by American Water Enterprises which receives water for the city from the SFPUC. The remaining portion is served by either Palo Alto Park Mutual Water Company or the O'Connor Tract Co-op Water Company. The City of East Palo Alto serves approximately 30,000 people in the city and a small section in the City of Menlo Park (City of East Palo Alto 2010). All the potable water for the City of East Palo Alto comes from the Hetch Hetchy system. The City of East Palo Alto serves an average of 1.96 million gallons per day, for which the city has a supply assurance from SFPUC (City of East Palo Alto 2010).

Stormwater Drainage

San Mateo County

The C/CAG of San Mateo County, along with the San Mateo County and all incorporated cities and towns within the county, created the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) partnership. All these entities are co-permittees of a common NPDES permit (C/CAG 2017) whose goal is to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean. A Stormwater Resource Plan (SRP) was developed in coordination with C/CAG member agencies and was approved by the C/CAG Board of Directors in February 2017. One of the goals of the SRP is to identify and prioritize opportunities to better utilize stormwater as a resource in San Mateo County. Both the City of Menlo Park and the City of East Palo Alto utilize the stormwater management provisions outlined by the SMCWPPP and San Francisco Bay Basin Water Quality Control Plan.

City of Menlo Park

In the City of Menlo Park, the storm drain system consists of 17 individual systems that serve 17 drainage areas, and is maintained by the Menlo Park Public Works Department (City of Menlo Park 2003). The storm drain collection system discharges to two waterways. The area north of Middlefield Road drains to the Bay. The northwest portion of the area south of Middlefield Road drains to Atherton Channel, while the southeast part drains to San Francisquito Creek (City of Menlo Park 2003). The city's Municipal Code includes specific provisions to protect and enhance water quality by eliminating non-stormwater discharges to the storm drain system, controlling the discharge from spills, dumping, or disposal of materials other than stormwater into the storm drain system, and reducing pollutants in stormwater discharges to the maximum extent practicable. New development or redevelopment projects in the city are required to use BMPs to achieve these goals.

City of East Palo Alto

The City of East Palo Alto implements a Storm Drain Master Plan, adopted in 2015, to comprehensively guide storm drain facility development. The city's storm drainage system ultimately discharges to San Francisquito Creek and the San Francisco Bay. Due to its proximity to the San Francisco Bay, tide has significant influence on portions of the drainage system. To overcome the effect of the tide over half of the city is reliant on pumping from the O'Connor pump station (City of East Palo Alto 2017).

Waste Disposal

Two categories of wastes are addressed: hazardous wastes and nonhazardous waste. Hazardous wastes are not expected from project operations, while solid, nonhazardous wastes might be expected in measurable amounts. Hazardous materials and related wastes are primarily addressed in **Section 5.8, Hazards and Hazardous Materials**. The expected solid, nonhazardous wastes would be disposed of in Class III landfills. Landfills are regulated against groundwater contamination. Landfills are also regulated to control the volume available for disposal.

Solid Nonhazardous Waste

Solid waste from the City of Menlo Park and the City of East Palo Alto is collected by several service providers that have to meet specific requirements to collect and haul solid waste to licensed areas. Solid waste from both cities is hauled to Ox Mountain which is a Class III Municipal Solid Waste Landfill. Ox Mountain is prohibited from accepting hazardous waste. The landfill is located at 12310 San Mateo Rd (Highway 92), Half Moon Bay, CA 94019. Ox Mountain is permitted to receive up to 3,598 tons of waste per day. As of 2011, the Landfill received an average of 2,260 tons per day (San Mateo County Public Works Department 2010). The Ox Mountain Landfill has a maximum capacity of 48.3 million cubic yards, and is expected to reach capacity in 2028 (City of East Palo Alto Community and Economic Development Department 2017).

Hazardous Waste

Management and disposal of hazardous waste that may be generated by the project during construction is discussed below in the Regulatory Background section. Additional detailed analysis of hazardous waste management is provided in **Section 5.8, Hazards and Hazardous Materials**.

Regulatory Background

Federal

Clean Water Act. The CWA (33 U.S.C. § 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the NPDES permit process (CWA Section 402).

State

National Pollutant Discharge Elimination System. The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality under the NPDES framework to the SWRCB and its nine RWQCBs. The SWRCB and nine RWQCBs are also responsible for the regulation and enforcement of the water quality protection requirements of the

state's Porter-Cologne Water Quality Control Act (Porter-Cologne). The NPDES is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection. Protection of water quality could be achieved by the project by complying with applicable NPDES permits from the SWRCB or the San Francisco Bay RWQCB. The Regional Wastewater Facility complies with the Clean Water Act through its current NPDES Wastewater Discharge Requirements (WDRs), which were issued by the San Francisco RWQCB in September of 2014.

The RWQCB can also issue site specific clean up orders where there is a threat or known contamination of soil and groundwater. As discussed in detail in the **Section 5.8, Hazards and Hazardous Materials**, the former Rhone-Poulenc facility produced agricultural chemicals at 1990 Bay Road in East Palo Alto. The site is approximately 23 acres and includes the 4.9-acre 1990 Bay Road property; partly-developed commercial properties to the north, south, and west; residential and mixed-use properties to the south; a portion of the PG&E pole yard west of Cooley Landing Substation (area proposed for Staging Area 4); the nontidal upland and marsh property east and south of Cooley Landing Substation (includes the Tower 9 work area).

There was soil and groundwater pollution at both the facility and adjoining properties. While arsenic is the primary contaminant, other metals, including cadmium, lead, zinc, mercury, and selenium, have been found in higher concentrations as well. Site investigation and cleanup activities have been ongoing since the early 1980s and are continuing pursuant to the RWQCB Order No. R2-2016-0037 (RWQCB 2016). The RWQCB Order requires implementation of a soil management plan (SMP) for all soil disturbances within the site, and adherence to a Covenant and Environmental Restriction on Property deed restriction on record with the County of San Mateo (RWQCB 2016). The deed restriction applies to subsurface work within the specified property boundaries and requires notification of the RWQCB prior to any subsurface work within the site. The SMP requires that any contaminated soil brought to the surface be managed in accordance with the SMP, in addition to applicable local, state, and federal laws (RWQCB 2016).

Solid Waste. Since only solid nonhardous wastes are expected in significant amounts, availability of adequate disposal space is important. Local regulations are aimed at minimizing the amount disposed of in any given disposal facility. As with such projects, liquid, hazard waste would not be generated in significant amounts in the construction and operational phases. Management of hazardous waste during routine project construction and operation is discussed in **Section 5.8, Hazards and Hazardous Materials**. However, as discussed above, hazardous soils and groundwater may be present due to previous land use in the project area. Construction activities such as excavation and drilling in Staging Area 4 and Tower 9 could generate hazardous waste that must be managed in accordance with Regional Water Quality Control Board Order No. R2-2016-0037 (RWQCB 2016) described above.

Local

City of Menlo Park. The City of Menlo Park has adopted ordinances related to construction waste salvaging and recycling. The City of Menlo Park Municipal Code Chapter 12.48 specifies landfill diversion requirements of construction and demolition debris. Policy 4.4 of the City of Menlo Park Open Space/Conservation, Noise and Safety Elements encourages all construction projects to divert 80 percent of their construction waste away from landfills.

City of East Palo Alto. The City of East Palo Alto has adopted ordinances related to construction waste salvaging and recycling. The City of East Palo Alto Municipal Code Chapter 15.56 specifies diversion and recycling requirements. For new construction projects, the code specifies at a minimum 55 percent of

waste tonnage including concrete and asphalt and 20 percent of waste tonnage excluding asphalt and concrete need to be recycled. For demolition projects the code specifies that 60 percent of waste tonnage including concrete and asphalt, and 25 percent of waste tonnage excluding concrete and asphalt should be diverted from landfills. Separate calculations are required for projects that involve both demolition and construction (City of East Palo Alto 2018).

5.18.2 Environmental Impacts and Mitigation Measures

PG&E does not propose to implement any APMs for utilities and service systems as part of the project.

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Construction

LESS THAN SIGNIFICANT IMPACT. The project would have a maximum of 25 workers during project construction, and thus the amount of effluent generated would be minimal. Also, construction wastewater demands would be temporary and would be met by portable restroom and hand-washing facilities for construction workers. Wastewater would be handled in accordance with applicable regulations and permits. Any wastewater generated from operation and maintenance of the reconductoring and foundation improvements would be handled the same way as the current transmission line. Waste would be disposed at appropriately licensed off-site facilities. Any water from dewatering during pile or cofferdam construction would be contained and handled in accordance with the SWPPP prepared as part of **APM HYD-1**. Therefore, impacts would be less than significant and no wastewater treatment requirements of the RWQCB would be exceeded.

Operation and Maintenance

NO IMPACT. Project operation and maintenance will not change from current operation and maintenance and, therefore, there would be no impact related to wastewater treatment requirements.

Required Mitigation Measures: None.

b. Would the project 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?

Construction

NO IMPACT. Use of water from SFPUC would be temporary and primarily limited to dust control and concrete mixing during construction. Concrete would be used to construct a total of 34 16-inch diameter piles (8 piles at each of four towers, plus two piles at the substations for installation of TSPs) to a depth of 80-100 feet. Assuming the maximum depth of 100 feet, the total volume of concrete for the 34 piles would be about 19,000 cubic feet, or about 142,000 gallons. On average, typical concrete mixes contain about 15 percent of water by volume. However, since the concrete used for the piles is going to be more of a slurry than typical concrete used for general construction purposes, the water content might be twice as high. Therefore, the amount of water needed for concrete mixing would be about 42,500 gallons, or 0.13 acre-foot (af).

According to Table 2.7-1 and Table 2.7-2 of the PEA (PGE 2017a), the total acreage of the work areas and staging areas would be approximately 4.66 acres. Assuming that dust control would be performed for all those areas, which is an extremely conservative assumption since not all the staging areas would be treated for dust control, and using a typical amount of 1,000 gallons per acre per day, the daily amount of water would be 4,660 gallons per day. Using a duration of 4 months (120 days) as estimated by the project proponent, the maximum amount of water needed for dust control would be approximately 560,000 gallons, or about 1.7 af. Therefore, the total amount needed for project construction would be less than 2.0 af. Bottled water would be used by the small number (25 or fewer) of construction workers; therefore, no local facilities would be needed to meet this small demand.

Wastewater service for the small workforce would be temporary and short-term, and would be met using portable restroom facilities and hand-washing stations. Wastewater from the workforce and other construction related wastewater would be collected and disposed of offsite in accordance with applicable regulations. If water is encountered during pile construction it would be pumped out and handled in accordance with the SWPPP prepared as part of **APM HYD-1**. If cofferdams are used water from the contained area would be also be handled in accordance with **APM HYD-1**. Existing water supply and wastewater facilities in the area would be sufficient to serve the additional temporary construction needs (SFPUC 2011). No impact would occur.

Operation and Maintenance

NO IMPACT. Since operation and maintenance activities for the reconductored power line would not change from current practices, the operations phase of the project would not require new or expanded water or wastewater treatment facilities. Therefore, no new or expanded water or wastewater treatment facilities which could cause significant environmental effects would be required. No impact would occur.

Required Mitigation Measures: None.

c. Would the project 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?

Construction

NO IMPACT. The project would involve reconductoring of an existing power line and underground foundation improvements for four of the nine transmission towers involved. The project would not require stormwater drainage facilities. The project is located in and along the San Francisco Bay where stormwater ultimately discharges from the surrounding region. Therefore, the project would not result in changes to existing stormwater facilities or require the construction of new facilities. Thus the project would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impact would occur.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities for the reconductored power line will not change from current practices. Therefore, the operations phase of the project would not require new or expanded stormwater drainage facilities. No impact would occur.

Required Mitigation Measures: None.

d. Would the project have sufficient water supplies available to serve the Proposed Project from existing entitlements and resources, or would new or expanded entitlements be needed?

Construction

LESS THAN SIGNIFICANT IMPACT. Water needs for sanitary purposes would be met with potable water which would be delivered to the project areas by construction vehicles and equipment. Water for dust suppression and concrete mixing would come from the local supply. The combined water needs would be small, temporary, and short-term, and existing water supplies would be sufficient to satisfy them.

There is sufficient water supply available to serve the project from existing entitlements and resources, and no new or expanded entitlements would be needed. The impact would be less than significant.

Operation and Maintenance

NO IMPACT. Project operation and maintenance will not change from current operation and maintenance and, therefore, there would be no impact from project operation and maintenance in terms of availability of water supplies. No impact would occur.

Required Mitigation Measures: None.

e. Would the project result in a determination by the wastewater treatment provider that serves or may serve the Proposed Project that it has adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments?

Construction

LESS THAN SIGNIFICANT IMPACT. Sanitary needs of construction workers during construction would be served using portable toilets. The sanitary waste generated would be disposed off-site at appropriately licensed facilities in the project area that have adequate capacity to accommodate project needs. Therefore, the project would have a less than significant impact on the capacity of wastewater treatment facilities as a result of project construction.

Operation and Maintenance

NO IMPACT. Project operation and maintenance will not change from current operation and maintenance and, therefore, there will be no change in wastewater volumes or quality that would affect a wastewater treatment provider. No impact would occur.

Required Mitigation Measures: None.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs?

Construction

LESS THAN SIGNIFICANT IMPACT. The project proponent would haul construction debris, including the removed conductor, on a line truck with a trailer to an area service center for recycling or disposal. PG&E would conduct a final survey to ensure that cleanup activities have been successfully completed as required.

Solid waste generated by the project would include food, glass, paper, plastic, and packing materials consumed by the up to approximately 25 construction workers who will be on- site during periods of peak construction activity. Waste from construction materials would also be generated and would include concrete, metal, and wood. Given the extent of the project and the activities involved, the amount of solid waste generated by the project is expected to be small (likely less than 10 tons). In addition, PG&E would comply with the City of Menlo Park and City of East Palo Alto municipal codes which specify construction and demolition waste diversion and recycling requirements. This would further reduce the volume of waste sent to the landfill. The Ox Mountain landfill where project waste will be disposed is permitted to receive up to 3,598 tons of waste per day. The current remaining permitted disposal space for the Ox Mountain landfill for example, is calculated at 22, 030,078 cubic yards as of December 31, 2016 (County of San Mateo 2017), and thus has adequate capacity to accommodate this relatively small amount of solid waste. The project would have a less than significant impact.

Operation and Maintenance

NO IMPACT. Project operation and maintenance will not change from current operation and maintenance and, therefore, there would be no change in waste volume which would affect the capacity of solid waste disposal facilities. No impact would occur.

Required Mitigation Measures: None.

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Construction

NO IMPACT. PG&E would comply with all federal, state, and local statutes (and regulations related to solid waste. During construction, the project proponent would collect and haul construction debris off-site for recycling or disposal. The project would not result in an impact on solid waste collection and there are no special or unique wastes that would not allow the project to comply with federal, state, and local statutes and regulations.

Operation and Maintenance

NO IMPACT. Project operation and maintenance will not change from current operation and maintenance and, therefore, there would be no change in compliance with federal, state, or local statutes and regulations related to solid waste. No impact would occur.

Required Mitigation Measures: None.

5.18.3 References

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5.19 Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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, rare ~~plant or animal~~ or threatened species, 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 will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

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 an ~~rare or~~ endangered, rare or threatened plant or ~~animal~~ species, or eliminate important examples of the major periods of California history or prehistory?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.

Fish and Wildlife Species

As described in **Section 5.4.1, Biological Resources**, the project could result in significant impacts to special-status species and their habitats. The project study area contains suitable habitat for wildlife species. Areas impacted by construction and operation of the project provide foraging and nesting habitat for special status bird and mammal species; however abundant foraging and nesting habitat would still be available surrounding the project area and within range of such species.

The project would have no effect on habitat for fish because (1) the water around Tower 1 is too saline to support fish and (2) Pond R2 is non-tidal, draws down in summer, and is flooded via a weir from Pond R1. Construction activities would result in temporary and permanent impacts on habitat for wildlife. The impact could be significant. Vegetation would be matted and some removed and cleared at tower work areas (**APM BIO-2**). The small loss of habitat around Towers 2, 8, and 9 (e.g., approximately 0.0009 acre) would not substantially reduce the habitat of a wildlife species. Surveys would be conducted prior to construction work and no construction would occur within 600 feet of an active nest (**APM BIO-3**). BMPs would be used to minimize the spread of weeds, as erosion control measures, and to limit soil disturbance (**APM BIO-5**). APMs would reduce the impacts on wildlife species, but not to less than significant. **MM BIO-1** would ensure that all trash containers are animal-proof to minimize the attraction of feral cats and nuisance animals that could prey on special status wildlife in the project area (Salt marsh harvest mouse and Salt marsh wandering shrew). Workers

would receive environmental training and vehicles would be confined to established roadways and existing access roads (**MM BIO-1**). The incorporation of **MM BIO-1** and **MM BIO-2** would reduce impacts to less than significant.

The project therefore would not substantially degrade environmental quality through habitat modification or substantially reduce the habitat of a fish or wildlife population to drop below self-sustaining levels. There are no known native wildlife nursery sites or migratory routes for any native resident or migratory fish or wildlife species in the project area. With mitigation, the project would reduce the introduction of invasive weeds and noxious plants, and minimize the risk of fragmenting any wildlife habitat. The impacts would be less than significant after implementing **MM BIO-1** and **MM BIO-2**.

Plant and Animal Communities

No special-status plant species were located on site; therefore, the project would not reduce the number or restrict the range of any rare, threatened, or endangered plant species. Construction impacts would be isolated to the individual work areas, would not eliminate an entire plant or animal community due to the small area of disturbance at Towers 2 and 8, and would not have indirect impacts such as introducing invasive weeds. Direct and indirect impacts on plant communities may reduce the number of plants within the plant community in the Study Area. ~~The use of mats and hand trimming or removal of plant vegetation (**APM BIO-2**).~~ APMs would reduce the potential for the project to substantially reduce the number of any plant and animal community, but not to less than significant. **MM BIO-1** requires environmental training for construction workers, and monitoring for sensitive biological resources during project activities, including flagging routes, use of mats, and hand removal by a biologist of sensitive vegetation. **MM BIO-2** requires control and monitoring to reduce the introduction and spreading of invasive weeds and noxious plants. The potential impacts on individual plants or animals would not eliminate or threaten to eliminate an entire plant or animal population or community. With the addition of **MM BIO-1** and **MM BIO-**2 the potential impacts would be reduced to less than significant.

Rare, Threatened, or Endangered Plants and Animals

No special-status plant species were located on site; therefore, the project would not substantially reduce the number or restrict the range of any rare, threatened, or endangered plant species. However, the indirect loss of potential habitat that supports these special-status plant species could result from construction activities.

Construction activities could injure or kill individual rare, threatened, or endangered wildlife, resulting in a substantial reduction in the number of rare, threatened, or endangered wildlife species occurring in the project study area. Construction activities would also result in noise and light impacts, which could affect wildlife breeding behavior or cause nest abandonment, and, therefore, cause a substantial reduction in rare, threatened, or endangered species numbers. Work within 600 feet of active snowy plover nests is required to occur outside of the nesting season and surveys would be conducted prior to construction work (**APM BIO-3**). In addition, access routes are required to be flagged in wetlands as well as compensation for temporary and permanent impacts to wetland and waters habitats (**APM BIO-5**) would reduce construction impacts**.** APMs would reduce the potential for the project to substantially reduce the number or restrict the range of a rare, threatened, or endangered plant or animal, but not to less than significant. **MM BIO-1** requires environmental training for workers, covering excavations, and monitoring for sensitive biological resources during

project activities, including flagging routes, use of mats, and hand removal by a biologist of sensitive vegetation. With mitigation, the project would not substantially reduce the number or restrict the range of any rare, threatened, or endangered animal species. The potential impacts would be reduced to less than significant.

California History and Prehistory

Historical resources, as defined by CEQA, are present in the project area. **APM CUL-1** would prevent impacts to identified historical resources. Damage to of as-yet-unidentified (buried or submerged) archaeological resources that qualify as historical resources or unique archaeological resources could occur. The ground-disturbing aspects of the project affect a small geographic area and do not require any mass-grading. Construction activities could substantially impact previously undiscovered resources. **APMs CUL-2, CUL-3,** and **CR-4**[3] would reduce or eliminate this impact through avoidance and documentation, should inadvertent archaeological discoveries occur during construction. The project therefore would not eliminate important examples of major periods of California history or prehistory.

Tribal cultural resources, as defined by CEQA, have not been identified in the project area. The ground-disturbing aspects of the project affect a small geographic area and do not require any mass-grading. The project therefore is unlikely to eliminate important examples of 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, effects of other current projects, and the effects of probable future projects.)

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. A project may result in significant adverse cumulative impacts when its effects are cumulatively considerable; that is, the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects [Cal. Code Regs., tit. 14, ch 3, § 15065, subds. (a)(3)]. Thresholds serve as the benchmark for determining if a project will result in a significant adverse impact when evaluated against existing conditions (e.g., "baseline" conditions).

Approach to Cumulative Impact Analysis

Under CEQA, there are two acceptable and commonly used methodologies for establishing the cumulative impact setting or scenario: the "list approach" and the "projections approach." The first approach would use a "list of past, present, and probable future projects producing related or cumulative impacts." (Cal. Code Regs., tit. 14, § 15130, subds. (b)(1)(A)). The second approach is to use a "summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact." (Cal. Code Regs., tit. 14, § 15130, subds. (b)(1)(B)). This analysis uses a hybrid approach where a list of probable future projects is considered in combination with the baseline conditions, agency projections, and adopted planning documents. The cumulative analysis considers, but does not exclusively rely on, planning documents to establish the cumulative scenario for the analysis.

[3] For purposes of consistency with the PEA, **APM CR-4** has not been renamed to **APM CUL-4**.

This analysis evaluates the cumulative impacts of each resource area based on the following three steps:

- Define the geographic scope of cumulative impact analysis for each discipline based on the potential area within which impacts of the project could combine with those of other projects.
- Evaluate the effects of the project in combination with past and present (existing) projects within the area of geographic effect defined for each discipline.
- Evaluate the effects of the project with foreseeable future projects that occur within the area of geographic effect defined for each discipline.

All projects used in the cumulative impacts analysis are listed in **Table 5.19-1**, and the approximate locations are shown on **Figure 5.19-1**.

TABLE 5.19-1 CUMULATIVE PROJECT LISTS

Map Id No./Type	Project Name	Project Description	Location	Distance from Project at Nearest Point [1]	Current Status/ Construction Info
1/point	PG&E Ravenswood Substation Circuit Breaker Replacement	Replace circuit breakers 152, 162, 312, and 332.	Ravenswood Substation	0	In service June 2021.
2/point	PG&E Ravenswood Substation Circuit Line Relay Replacement	Replace line relays.	Ravenswood Substation	0	In service August 2019
3/point	PG&E Ravenswood Substation Dead-end Replacement	Replace dead-end and switch support structures for the Ravenswood-Cooley Landing Numbers 1 & 2 115 kilovolt (kV) Lines and relocate existing circuit breakers 152 and 162 to the new structures. New bypass switches will be installed.	Ravenswood Substation	0	In service July 2019.
4/linear	PG&E San Mateo-Ravenswood-Ames 115 kV Line	Replacement of existing lattice steel towers (LSTs) with slightly taller structures, modification of existing towers (e.g., top cage extensions); modification of the foundations of existing LSTs and replacing existing conductor along the 115 kV power lines between San Mateo Substation and Ravenswood Substation in San Mateo County and Ames Substation in Santa Clara County.	San Mateo Substation to Ravenswood Substation, San Mateo County and Ames Substation in Santa Clara County	0	Construction scheduled for Fall 2021. In service 2024.
5/linear	Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092	This project entails a 0.6-mile section of the Bay Trail located between the existing Bay Trail along University Avenue and the existing unpaved trail in the Ravenswood Open Space Preserve. It will provide a connection between the Dumbarton Bridge bicycle and pedestrian pathway and the Ravenswood Open Space District, as well as a setting for wildlife viewing and environmental education.	Bay Trail between University Avenue and Ravenswood Open Space Preserve	0	Construction scheduled for Fall 2019 for 22-week period. End of construction estimated Jan. 31, 2020.

TABLE 5.19-1 CUMULATIVE PROJECT LISTS

Map Id No./Type	Project Name	Project Description	Location	Distance from Project at Nearest Point [1]	Current Status/ Construction Info
6/linear	SAFER Bay (Strategy to Advance Flood Protection, Ecosystems, and Recreation along the Bay)	Restore several hundred acres of marsh wetlands, protect against a 100-year tide with two feet of freeboard and after three feet of future sea level rise, and enhance recreational opportunities along approximately eleven miles of Bay shoreline in Palo Alto, East Palo Alto and Menlo Park. The current 100-year tidal floodplain includes thousands of homes, businesses, and major infrastructure, including highways and a regional water treatment plant and airport, and large areas of potential marsh cannot be restored until the adjacent developed areas are protected. It is anticipated that Restoration Authority funding will be sought to provide for project design and construction.	Peninsula and South Bay, San Mateo and Santa Clara counties	0	Planning, Environmental Review and Design: early 2020 followed by permitting and funding.
7/linear	Bay Road Improvements Project	Roadway improvements between University Avenue and Cooley Landing. This three-phased project includes designs of the roadway to accommodate new sidewalks, bike lanes, Americans with Disabilities Act accessibility, lighting, landscaping, and street furniture as well as mixed-use development.	Bay Road between University Avenue and Cooley Landing, East Palo Alto	0	Construction scheduled for Spring 2018 with 18-month construction.
8/point	PG&E Cooley Landing Substation Bank Replacement	Replace Bank #2 and CB 92.	Cooley Landing Substation	0	In service June 2018.
9/point	PG&E Cooley Landing Substation Dead-end Replacement	Replace dead-end switch support structures for the Ravenswood-Cooley Landing Numbers 1 & 2 115 kV Lines. Relocate the existing coupling capacitor voltage transformers (CCVTs) for CBs 132 and 142 and their associated support structures.	Cooley Landing Substation	0	In service June 2018.

TABLE 5.19-1 CUMULATIVE PROJECT LISTS

Map Id No./Type	Project Name	Project Description	Location	Distance from Project at Nearest Point [1]	Current Status/ Construction Info
10/point	The Primary School at 1200 Weeks Street	Construction of a private, tuition-free school campus at 1200 Weeks Street on a vacant 3.5-acre site. The project would provide facilities for pre-school, elementary and middle school students, before and after school care, and healthcare services, as well as parent-infant community programs. The site would include amenities such as adult-learning classrooms, meeting space for parents, a parent education library, a gymnasium, and several play yards and recreation areas. The school would have capacity for 511 students and the childcare program would have capacity for approximately 150 children. The project would provide approximately 80 surface level parking spaces.	1200 Weeks Street, East Palo Alto	0.4	Draft Environmental Impact Report in preparation.
11/point	Four Corners at University and Bay	The mixed-use project is proposed to be about 350-acres and entails 15,000 sq. ft. of retail space and 115 condominium units.	2398 University Avenue, East Palo Alto	0.7	No proposed development agreement.
12/point	Facebook Willow Campus Master Plan	Redevelop former Menlo Science and Technology Park (currently 20 buildings- total 1,000,000 sq. ft.; mix of office, research & development, and warehousing uses) to include the following: 1. Approx. 126,500 sq. ft. retail (incl. grocery store, pharmacy, and restaurant); 2. Minimum of 1,500 housing units (15 percent, or 225 units would be below market rate); 3. Limited service hotel with 7approx. 200 rooms; 4. Culture/visitor center at Willow Rd. and Dumbarton Corridor; 5. 18 acres open space; 6. Approx. 1,750,000 sq. ft. office. Project would result in a net increase of 1,000,000 sq. ft. for a total of 2,000,000 sq. ft.	1350-1390 Willow Road, 925-1098 Hamilton Avenue, and 1005-1275 Hamilton Court, Menlo Park	0.9	Under environmental review with the city of Menlo Park.
13/point	Gloria Way Well	Expanding or rehabilitating and stabilizing Gloria Way Well to provide a source of non-potable water for use in an emergency in the city of East Palo Alto. Connecting the treated water to the distribution system will provide an alternative and independent source of potable water.	East Palo Alto	0.9	Construction scheduled for Fall 2017

TABLE 5.19-1 CUMULATIVE PROJECT LISTS

Map Id No./Type	Project Name	Project Description	Location	Distance from Project at Nearest Point [1]	Current Status/ Construction Info
14/area	South Bay Salt Ponds: Ravenswood Complex - Ponds R3, R4, R5, S5	The South San Francisco Bay Salt Pond Restoration Project is the largest wetland restoration project on the west coast of the United States, working to restore 15,100 acres of former industrial salt ponds. Upcoming project elements at Ravenswood include: restoration of almost 280 acres of tidal wetlands and 15 acres of ecotone, enhancement of 70 acres of pond habitat for waterbirds, flood protection for adjacent communities, and new trail connections and interpretive features. Additional elements include adaptive management applied studies and monitoring as well as project support and outreach.	Peninsula and South Bay, San Mateo and Santa Clara counties	1.0	Planning and Permitting: 2017 Construction: 2019-2020
15/point	Traffic Signal Upgrade and Geometrics Design	The project will add a protected left turn phasing to the University Avenue traffic signals. The existing mast arm only extends to the through lanes and is not long enough to reach the existing left turn lane.	University Avenue/Bell Street & East Bayshore Road/Pulgas Avenue, East Palo Alto	1.1	Conceptual. No funding.
16/point	Willow Business Area Zoning Plan	Multi-phased planning for the M-2 Zoning District at Willow Road and Bayfront Expressway.	Menlo Park	1.1	Planning phase.
17/point	Route 101/University Ave. (SR 109) Interchange Modification Project	Widen overcrossing to accommodate wider sidewalk and class 2 bicycle lanes to fill missing bicycle gap over Route 101 to improve bicycle and pedestrian access and safety along University Avenue.	Route 101 and University Ave., East Palo Alto	1.4	In design phase. Construction in two stages, Stage 2A and 2B.
18/point	Highway 101 Pedestrian/Bicycle Overcrossing Project	1) design and construction of a bicycle and pedestrian overcrossing (POC) over U.S. Highway 101 and West and East Bayshore Roads; 2) sidewalk and bikeway signage; and 3) striping improvements along West Bayshore Road and a new West Bayshore Road crossing.	Adjacent to Clarke Ave. on north side of U.S. 101 and Newell Road to south, East Palo Alto	1.4	Construction Commence December 2017 to estimated completion June 2019
19/point	Facebook Campus Expansion Project	Development of two new office buildings (962,400 sq. ft. for a net increase of approx. 126,600 sq. ft. of offices). Buildings include the potential for a 200-room limited service hotel (174,800 sq. ft.), Development of publicly accessible open space and a pedestrian bicycle bridge over Bayfront Expressway (State Route-84).	301-309 Constitution Drive, Menlo Park Between Chilco Street and the recently completed Building 20.	1.7	Under construction. First Phase to be completed in 2019. Second Phase to be completed 1st quarter 2020

TABLE 5.19-1 CUMULATIVE PROJECT LISTS

Map Id No./Type	Project Name	Project Description	Location	Distance from Project at Nearest Point [1]	Current Status/ Construction Info
20/linear	Baylands Boardwalk Improvement Project	Replacement of exiting Palo Alto Baylands boardwalk with new, improved boardwalk along the same alignment as the existing route. New boardwalk would be five ft. wide, intermittent viewing platforms, and its elevation would be 3.6 to 4.3 ft. higher than existing structure to accommodate projected sea-level rise.	Baylands Boardwalk, Palo Alto	1.8	Construction estimated to begin September 2018 through January 31st.
21/area	Menlo Gateway Project	Amendments to General Plan, Zoning Ordinance, and map to construct the following: 1. café/restaurant (4,245 sq. ft.); 2. health club (68,519); 3. neighborhood-serving retail and community facilities (10,420 sq. ft.); 4. three office and research and development buildings (694,669 sq. ft.); 5. three parking structures.	100-190 Independence Dr. And 101-155 Constitution Dr. Menlo Park	2.5	Approved, but revising/Unknown
22/point [2]	1400 El Camino Real	Construction of a new 63-room boutique hotel.	1400 El Camino Real, Menlo Park	9.4	Unknown

Notes: [1] Distance from Ravenswood-Cooley Landing 115 kV Reconductoring Project feature (substations or transmission line). [2] Map Id 22 is not mapped due to the scale of the figure.

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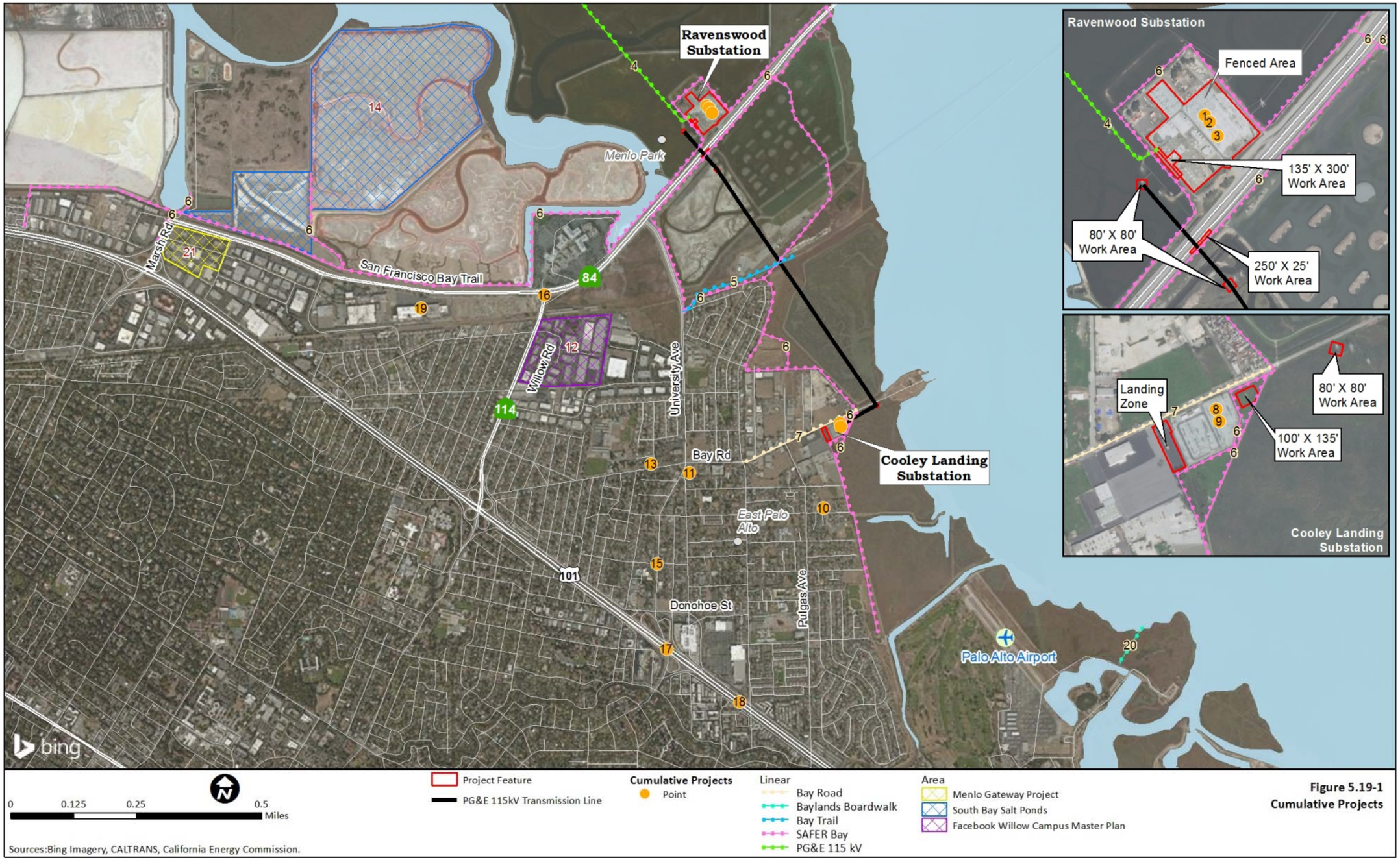

Figure 5.19-1
Cumulative Projects

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Environmental Factors with No Impacts

The project would have no impact on, and therefore not contribute to a cumulative impact on the following environmental factors:

- Agriculture and Forestry Resources
- Land Use and Planning
- Noise
- Mineral Resources
- Public Services
- Population and Housing
- Recreation

These environmental factors are not discussed further.

Aesthetics.

Geographic Extent

Aesthetic and visual resource impacts are project-specific and highly localized; therefore, the list approach was used to evaluate potential cumulative impacts. The geographic scope of cumulative impacts on aesthetics includes all areas where more than one cumulative project would be visible with the project in the same public view. Two cumulative projects have the potential to be located within the same public view as the project: Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092 (#5); and SAFER Bay (#6).

Potential Cumulative Impacts

In order for a cumulative impact to occur, the viewer would need to see the project along with either of the two cumulative projects. Specifically, the viewer would need to be at a location facing a specific direction and located a sufficient distance from these cumulative projects in order for the view to be wide enough (height-wise). The Ravenswood Bay Trail project would provide an additional 0.6-mile section of the Bay Trail connecting the existing Bay Trail along University Avenue and the existing unpaved trail in the Ravenswood OSP. The SAFER Bay project would restore several hundred acres of marsh wetlands, protect against a 100-year tide with various measures, and enhance recreational opportunities along the Bay shoreline in Palo Alto, East Palo Alto, and Menlo Park.

The project improvements could be located visually within the same viewshed of the Ravenswood Bay Trail and SAFER Bay projects. However, project improvements would occur at a higher elevation than the two cumulative projects. Specifically, visually prominent components of the project would occur above the horizon and visually prominent components of the two cumulative projects would occur below the horizon. At the distance needed to view the project in conjunction with the cumulative projects, the visually prominent components of the project would become indistinct or not visible and would not impact the cumulative view. Therefore, cumulative aesthetics impacts would be less than significant and the project's incremental contribution would be less than cumulatively considerable.

Air Quality.

Geographic Extent

Air quality is a regional resource and is neither defined nor limited by jurisdictional boundaries, political boundaries, or project boundaries. The cumulative study area for air quality primarily encompasses activities within the same air basins as the project, specifically the SFBAAB.

Potential Cumulative Impacts

Regional Air Quality. Regional air quality is affected by all activities that occur within an air basin. The project would be located within San Mateo County in the SFBAAB, under the jurisdiction of the BAAQMD. The SFBAAB is in nonattainment for ozone, PM10 (for state standard), and PM2.5. Past and present projects in the SFBAAB have resulted in the nonattainment status. The cumulative impact from past, present, and probable future projects on existing criteria air pollutant violations in the SFBAAB for which the SFBAAB is in nonattainment, would be significant.

Cumulative impacts on regional air quality are addressed by the BAAQMD thresholds of significance for construction and operational criteria pollutant emissions in the SFBAAB because BAAQMD considered all past, present, and probable future projects when they set their thresholds of significance. The thresholds represent the levels at which a project's individual combustion emissions of criteria air pollutants and precursors would result in a cumulatively considerable contribution to the existing nonattainment designation. BAAQMD does not set numerical thresholds for fugitive dust. Instead, BAAQMD CEQA Guidelines recommend following the current BMPs approach which has been a pragmatic and effective approach to the control of fugitive dust emissions. If a project's emissions exceed the numerical thresholds in the SFBAAB, or if the project generates uncontrolled fugitive dust, the project would be considered to considerably contribute to the cumulatively significant air quality impact in the air basin.

Emissions generated from combustion during construction of the project would not exceed the BAAQMD thresholds of significance for criteria air pollutants (refer to **Section 5.3, Air Quality**, Impact a. and Impact b.). BAAQMD CEQA Guidelines require implementation of fugitive dust control BMPs to consider impacts from fugitive dust emissions less than significant. Without these BMPs, the cumulative impact from fugitive dust emissions would be considered significant. PG&E would implement **APM AIR-1** to reduce fugitive dust emissions and **APM AIR-2** to minimize exhaust emissions, which are consistent with the BAAQMD recommended BMPs. With implementation of **APM AIR-1** and **APM AIR-2**, the project would not generate excessive emissions of fugitive dust and the project would not contribute considerably to a significant cumulative air quality impact.

Operation and maintenance activities for the reconductored power line would not change from current practices. The project would not contribute to a cumulatively significant air quality impact during operation and maintenance.

Local Air Quality. CO, fugitive dust emissions and diesel emissions have the potential to result in localized impacts.

Vehicle trip increases during construction and operation of cumulative projects could elevate CO emissions at intersections. BAAQMD screening guidance indicates that a project would not exceed the CO significance threshold if a project's traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour. The cumulative projects would

not increase traffic at any affected intersection above the BAAQMD threshold because the cumulative projects and project would result in minimal traffic increases at any one affected intersection. None of the cumulative projects include large-scale development associated with substantial increases in traffic. Localized CO emissions at intersections would not increase substantially from cumulative projects. The cumulative impact from localized CO emissions would be less than significant.

According to the 2017 CEQA Guidelines, BAAQMD recommends using 1,000 feet as the zone of influence for cumulative threshold when assessing community risks and hazards (BAAQMD 2017b, Table 2-6). There are only a few cumulative projects within 1,000 feet from the project: Bay Road Improvements Project (#7); Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092 (#5); PG&E San Mateo-Ravenswood-Ames 115 kV Line (#4); PG&E Ravenswood Substation Circuit Breaker Replacement (#1); PG&E Ravenswood Substation Circuit Line Relay Replacement (#2); PG&E Cooley Landing Substation Bank Replacement (#8); Cooley Landing Substation Dead-end Replacement (#9); and Ravenswood Substation Dead-end Replacement (#3). Construction vehicles and equipment used during construction of these cumulative projects would generate localized diesel and fugitive dust emissions near sensitive receptors. To reduce fugitive dust emissions, PG&E would implement **APM AIR-1**, which includes applying water to exposed areas and reducing vehicle speeds on unpaved areas. To reduce emissions from vehicle and construction equipment exhaust, PG&E would implement **APM AIR-2**, which includes limiting idling time from large diesel-fueled vehicles and properly maintaining all construction equipment. With implementation of these APMs, all emissions of criteria air pollutant and TACs of the project would be below the applicable BAAQMD thresholds and impacts would be less than significant (refer to **Section 5.3. Air Quality**, Impact c). The emissions of the project would be less than the BAAQMD thresholds of significance; therefore, the project would not contribute considerably to a significant cumulative air quality impact.

Biological Resources.

Geographic Extent

The geographic extent for the biological resources cumulative analysis includes all similar habitats within 2 miles of the project alignment. This includes the entire extent of all vegetation and wildlife communities and special-status species habitats and ranges that could be directly and indirectly affected by construction, operation, and maintenance of the project. This accounts for the cumulative degradation or loss of a particular vegetation community, special-status species population, or jurisdictional waters, including wetlands, from cumulative projects that have impacted or would impact sensitive plant communities or special-status species, and result in cumulative habitat degradation or fragmentation.

Potential Cumulative Impacts

Cumulative projects with the potential to affect biological resources include the PG&E San Mateo-Ravenswood Ames 115 kV Line (#4); Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092 (#5); SAFER Bay (#6); and the Baylands Boardwalk Improvement Project (#20). Draft CEQA documents have been published and circulated for public comment for the Ravenswood Bay Trail (IS/MND) and Baylands Boardwalk Improvement Project (IS) projects. It is unknown if the MND has been adopted by the lead agency(ies).

Construction of other cumulative projects in the area affecting the same sensitive habitats and species may contribute to cumulative impacts through temporary effects to California Ridgway's rail, California black rail, western snowy plover, salt marsh harvest mouse, salt marsh wandering shrew,

and other avian species as described in **Section 5.4, Biological Resources**. This could occur through the introduction of noxious and non-native weeds from work in and around northern coastal salt marsh and salt panne habitats. Other impacts include attracting feral cats and other predators with project related trash near sensitive habitats, where these species may occur.

All potentially significant impacts from the Ravenswood Bay Trail and Baylands Boardwalk Improvement Project would be mitigated, through a worker environmental awareness program (MM BIO-1.3) and cleaning construction equipment (MM BIO-4.1) to prevent the spread of weeds (Baylands Boardwalk Improvement Project IS/MND, H.T. Harvey & Associates, Inc., 2017) and a contractor education program **(**MM BIO-2.2) (Ravenswood Bay Trail IS/MND, (Midpeninsula Regional Open Space District, 2016) if the MND is adopted for these projects. The PG&E San Mateo-Ravenswood-Ames project could impact the same habitats and species as the current project. The amount of impact is unknown, as the cumulative project is in the planning stage. However, since it is also a PG&E project it is likely that the same level of impacts and requisite mitigation measures would occur.

However, the project would be required to avoid and minimize these impacts through the implementation of **MM BIO-1** and **MM BIO-2**. **MM BIO-1** would include additional requirements for the WEAP including providing a brochure with photographs to workers who complete the training, documenting who has completed the training, and providing training for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources or invasive plants be found during construction). In addition, to further minimize the introduction and spread of noxious weeds into northern coastal salt marsh and salt panne habitats, PG&E would, as specified in **MM BIO-2**, avoid moving construction materials to relatively weed-free locations, use certified weed-free straw and mulch, minimize soil disturbance, keep vehicles on established roads where practicable, and stage in areas not infested with weeds or treat for weed removal prior to using an infested area. **MM BIO-1** and **MM BIO-2** would mitigate any significant impacts to less than significant. The project would not contribute to cumulatively significant impacts to northern coastal salt marsh and salt panne habitats or the species that use them. The project's contribution to these would be less than cumulatively considerable.

Cultural and Paleontological Resources.

Cultural Resources

Geographic Extent

The geographic extent for cumulative cultural resource impacts includes the adjacent bay lowlands of the Ravenswood vicinity.

Potential Cumulative Impacts

The cumulative impacts analysis for cultural resources considers the impacts of 22 past, current, and reasonably foreseeable projects within and adjacent to the bay lowlands of the Ravenswood vicinity. One cumulative project could affect two historical resources (Hetch Hetchy Aqueduct BDPL No. 1 and 2 Alignment and Dumbarton Railroad Corridor) but project design and mitigation measures ensured that no impacts would result for these two resources (Lautsen 2016). No cumulative impact would occur.

Paleontological Resources

Geographic Extent

The geographic extent for cumulative paleontological impacts includes the extent of geologic units with low to high paleontological sensitivity which are the same as those that could be encountered at the project. These include the Quaternary Young Surficial Deposits (Qhbm, Qhb) (low sensitivity) and the Pleistocene age alluvial deposits, which are typically classified as Quaternary Old Alluvial Deposits (Qoa) in the area of the San Francisco Bay (high sensitivity). This geographic extent is appropriate because these contiguous geologic formations could contain similar paleontological resources, which would contain the same research potential as resources found within the project study area. This would also apply to the interpretation of whether there are unique or special geologic features that should be preserved or protected.

Potential Cumulative Impacts

The cumulative projects listed in **Table 5.19-1** are all located in areas with low paleontological sensitivity (refer to **Section 5.5, Cultural and Paleontological Resources**). There is a very low likelihood that paleontological resources would be encountered during construction of the cumulative projects due to the low sensitivity of the geologic units where they are located. The cumulative impact on paleontological resources would be less than significant.

Geology and Soils

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with geology and soils resources includes cumulative projects within 0.5 mile of the project because nearby cumulative projects could contribute to slope instability or geologic hazards.

Potential Cumulative Impacts

The cumulative projects listed in **Table 5.19-1** are all located in areas of flat terrain. Although active faults are located in the region, the risk of seismic hazards to the public would be localized and would not combine cumulatively. The seismic risk is an existing risk, and none of the cumulative projects would substantially increase the risk to either people or structures over baseline conditions.

None of the construction activities for any of the cumulative projects considered would involve extensive recontouring or excavation. All of the considered cumulative projects would occur in flat, previously graded and disturbed areas. None of the projects would result in substantial soil erosion, or loss that could be cumulatively significant. Due to the flat terrain, destabilization of soils or geologic units is unlikely. The cumulative impacts would be less than significant.

Greenhouse Gas Emissions

Geographic Extent

GHGs are global pollutants and have long atmospheric lifetimes of one year to several thousand years, which leads to dispersal of GHGs around the globe. In contrast to air quality, which generally is a regional or local concern, human-caused emissions of GHGs have been linked to climate change on a

global scale. The geographic extent for the GHG emissions cumulative analysis is therefore considered global.

Potential Cumulative Impacts

GHG emissions and climate change are inherently cumulative impacts. Past, present, and probable future projects worldwide contribute or would contribute to the cumulative conditions for GHG emissions.

Cumulative impacts from GHG emissions are addressed by the BAAQMD thresholds of significance. The BAAQMD thresholds represent the levels at which a project's individual emissions would result in a cumulatively considerable contribution to GHGs. BAAQMD considered the cumulative nature of GHGs when setting thresholds for GHGs. The thresholds of significance for operational-related GHG emissions are: 1,100 $MTCO_2e$/year for land use development projects and 10,000 $MTCO_2$-e/year for stationary-source projects.

Because construction emissions would cease once construction is complete, they are considered short-term. The BAAQMD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions. Instead BAAQMD recommends that GHG emissions from construction be quantified and disclosed. The BAAQMD further recommends incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable.

Use of vehicles and equipment during construction of the project would generate GHG emissions. Project construction and operational activities would generate 3.5 $MTCO_2e$ per year, as amortized over 30 years.[4]

The GHG emissions that would be generated by the project would not significantly contribute to global climate change. The project's contribution to GHG emissions would be less than cumulatively considerable.

Hazards and Hazardous Materials.

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with hazards and hazardous materials is the area within approximately 0.25 mile of the project. The limited geographic extent is appropriate given the small volume of hazardous materials that would be used for construction and the low probability for a hazardous materials spill or release of significant size from the project. Furthermore, the impact of any release would not travel far due to the low volatility and vapor pressure of the types of materials that would be used during the construction.

Potential Cumulative Impacts

Routine Transport, Use, and Disposal of Hazardous Materials and Accidental Hazardous Materials Releases. The cumulative projects listed in **Table 5.19-1** within the geographic locale of the project would use similar hazardous materials, also in small quantities, as are associated with construction,

[4] Amortization of construction GHG emissions over the project life, e.g., 30 years is a reasonable approach to analyzing the significance of short-term construction emissions. See, e.g., South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008

typically cleaning solvents, adhesives, vehicle fuels, and lubricating oil. In order for a cumulative impact to occur as the result of the use of hazardous materials, there would need to be multiple simultaneous releases of hazardous materials from the cumulative projects in close proximity to the project. The probability of such an event occurring is extremely low because each of the other projects would also be required to implement safety measures to reduce their risk of a hazardous materials release. Therefore, the cumulative impact from the use, transport, disposal or accidental release of hazardous materials would be less than significant.

Hazardous Materials Sites. Concurrent construction of the cumulative projects located adjacent to the project could be subject to the risk of encountering hazardous materials due to ground contamination. However, the adjacent cumulative projects would be required to implement health and safety procedures for their workers to reduce their risk of exposure to hazardous materials from ground contamination. With these safeguards in place, the cumulative impact from the hazardous materials site would be less than significant.

Air Traffic Hazard. Construction of the cumulative projects located adjacent to the project would not increase air traffic in the region. The adjacent cumulative projects could also require helicopter support, as does the project. However, such helicopter use would be temporary and all projects would be required to obtain an FAA Notice of Determination of No Hazard to Air Traffic. The PG&E San Mateo-Ravenswood-Ames 115 kV Line project is the only cumulative project likely to use a helicopter during construction and would not have an overlapping construction schedule with the project. Therefore, the cumulative impact to the nearby airport would be less than significant.

Emergency Access. The project and adjacent cumulative projects would be required to obtain all applicable state and local permits and to communicate with local officials about any impacts to road traffic so that neither emergency access nor response plans would be impacted. Therefore, the cumulative impact would be less than significant.

Wildland Fire. The project and adjacent cumulative projects are located in a non-Very High Fire Hazard Severity Zone which indicates there would be less than moderate susceptibility to wildland fires. The project area is located around wetlands. Therefore, the cumulative impact from risk from wildland fires would be less than significant.

Hydrology and Water Quality.

Geographic Extent

The geographic extent for this cumulative analysis is defined as the watersheds where the proposed project is located, which includes all watersheds in San Mateo County. These watersheds represent both the hydrologic and administrative units for water quality control and protection of beneficial uses for water resources in the project area.

Potential Cumulative Impacts

All cumulative projects listed in **Table 5.19-1** contribute or would contribute to the cumulative conditions for hydrology and water quality within the cumulative analysis study area.

Water Quality Standards, Waste Discharge Requirements, and Erosion. Past and present projects have resulted in degradation of water quality in nearby waterbodies. Ground disturbing activities

required to construct cumulative projects could result in soil erosion and sediment deposition into local streams. Construction and operation of the project and cumulative projects would require the use of hazardous materials such as diesel fuel and gasoline. Spilled materials and sedimentation from earth-moving activities could potentially be transported to waterways and adversely impact water quality in the watersheds. Drilling and excavation could also produce soils and water that requires treatment and disposal because of past land uses that have resulted in contamination. San Francisquito Creek is currently listed on the USEPA's Section 303(d) Listed Waters for California for sediment, diazinon, and trash. The San Francisquito Creek and marshland adjacent to the project drain into the San Francisco Bay South. The San Francisco Bay South is identified as polluted with pesticides, dioxin and furan compounds, invasive species, mercury, polychlorinated biphenyls, and selenium (SWRCB 2017). The impact on impaired waterbodies from ongoing and future erosion and siltation would be cumulatively significant

Given the extent and duration of the project, it has the potential to slightly contribute to an existing significant cumulative impact to waterbodies with existing water quality violations. PG&E would implement a SWPPP that would ensure performance standards for water quality protection are met in accordance with San Francisco Bay RWQCB requirements. The SWPPP requires monitoring and maintenance of BMPs until all ground-disturbing activities have ended and disturbed areas are sufficiently stabilized. Adequately defining, implementing, and monitoring erosion and sediment control BMPs would reduce would reduce the potential for the project to impact impaired waters downstream from the project.

The project would not contribute considerably to a significant cumulative impact on existing impaired waterbodies with mitigation.

Increased or Polluted Runoff or Substantial Degradation of Water Quality. Impervious surfaces would not increase substantially from the project and cumulative projects, because the cumulative projects would be constructed within developed areas, and the project would have a negligible increase in impervious areas. Any increase in impervious areas would be temporary because areas to be graded are limited and would be restored to existing conditions once construction is complete. Use of vehicles and equipment during construction or operation of the cumulative projects could release hazardous materials due to leaks or spills; however, the quantity of pollutants would be minimal and would not result in a substantial source of polluted runoff. Therefore, the cumulative increase in runoff would be less than significant.

Noise.

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with noise is limited to areas within 0.5 mile of the project components. This geographic extent is appropriate because noise levels attenuate rapidly with distance, and the noise generated by activities greater than 0.5 mile from the project would not have the potential to combine with the noise generated by project construction.

Potential Cumulative Impacts

All cumulative impact projects listed in **Table 5.19-1** located within 0.5 mile of the project could potentially produce cumulative noise impacts if they are constructed concurrently with the project.

Ground-borne Vibration. Construction of the cumulative impact projects would require the use of heavy equipment that would generate ground-borne vibrations. The vibrations would be short-term. Additionally, ground-borne vibrations are localized and attenuate very rapidly with distance. No significant cumulative impact from ground-borne vibration would occur.

Ambient Noise. Construction activities and equipment use associated with construction of the cumulative impact projects have the potential to generate substantial noise. The noise from construction of the cumulative projects could temporarily increase ambient noise levels. Short-term construction noise impacts may occur simultaneously at a few work locations along the overall length of the project, but would mainly occur during the daytime hours consistent with local noise ordinances.

During the project construction period, the only cumulative projects with planned construction schedules listed in **Table 5.19-1** that may be under construction concurrently with the project would be the Ravenswood Bay Trail Segment (#5) and SAFER Bay Flood Protection projects (#6). The cumulative noise associated with these activities would create periodic and/or temporary significant increases in the ambient noise levels at the project's noise sensitive receptors. However, with mitigation measure **MM NO-1**, the project's contribution to cumulative noise impacts would be mitigated to less than significant.

Construction work for all of the cumulative projects, notably the two projects that may have construction overlap with respect to the project, would occur during the daytime hours in compliance with the construction hours' restriction of the respective city. For the proposed project, and possibly the substation projects listed above, while construction activities would occur only during the daytime hours, it is possible that nighttime construction could become necessary to continue work until a safe stopping point is reached or if planned electrical outages (clearances) are scheduled at night. To effectively reduce this impact, **MM NO-1** would require that the notification of nighttime work to the affected residents and state that the work will be done in a manner to avoid excessive noise. **MM NO-1** would also require that PG&E provide a public liaison person to respond to concerns of neighboring receptors and address any nighttime-related complaint within 24 hours of its filing. **MM NO-1** would further require the construction contractor to install and maintain temporary sound barriers between the construction site and the sensitive receptors as needed during construction phases with high noise levels. With implementation of **MM NO-1**, the project's contribution to cumulative noise impacts including noise impacts from nighttime work would be reduced to less than significant. Refer to **Section 5.12, Noise** for the full description of the mitigation.

Transportation and Traffic.

Geographic Extent

The geographic extent of the transportation and traffic cumulative analysis includes the local roadways and highways that would be crossed by the project or used for transportation of proposed project materials. Refer to **Table 5.16-1** in **Section 5.16, Transportation and Traffic**, for a list of the local the roadways in the project study area. This cumulative analysis specifically includes all projects within a three-mile radius because these cumulative projects are expected to use the same roads for access as the project. The timing of these cumulative projects varies and is often uncertain.

Nevertheless, these cumulative projects could potentially generate construction or operation traffic simultaneously with the project's construction trips.

Potential Cumulative Impacts

Conflict with Traffic Standards. As discussed in **Section 5.16, Transportation and Traffic**, the project would result in less than significant impacts to traffic level of service for project roads and highways. However, some road closures and one-way traffic controls would be required during project construction and would potentially decrease traffic flow for short periods of time. Construction worker vehicles and haul trucks used during construction of the listed cumulative projects could use the same local roadways and highways as the project to access work sites. Cumulative projects that could potentially combine with the project to create cumulative traffic impacts would be the Facebook Expansion Project (#19), Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092 (#5), and The South Bay Salt Ponds Project (#14). The remaining cumulative projects have construction timelines not expected to overlap with the project and are not discussed further.

The Facebook Expansion Project is located off of SR 84, west of University Avenue. This project could add construction trips to the same roadways as the project's construction traffic. The Ravenswood Bay Trail: Bayfront to Ravenswood Preserve, Segment 2092 project is located along the SFPUC service road entrance to the Ravenswood Nature Preserve loop trail. This cumulative project could add construction trips to University Avenue and the SFPUC service road. The South Bay Salt Pond Restoration Project is located east of the Bedwell Bayfront Park entrance in the City of Menlo Park. This cumulative project would use the northbound and southbound US 101 Marsh Road exits to access the project work area during construction. These cumulative projects (#5, #14 and #19) could result in significant impacts to the operation of local roads and highways. The project would temporarily add 90 construction-related trips to local roads and highways. The temporary increase in construction-related trips would be distributed on all project roadways for worker access to the five staging areas. Therefore, the actual increase in traffic on individual roads would be less than 90 trips. Impacts due to construction traffic would be temporary and intermittent reduction of roadway capacities due to roadway usage by the projects trucks/vehicles. In accordance with **MM TRA-1**, PG&E would coordinate with local and state jurisdictions during preparation and implementation of a TMP, which would reduce or avoid impacts caused by construction activities. Cumulative projects #5, #14, and #19 would be required to prepare and implement separate TMPs. It is reasonably expected that the affected jurisdictions would ensure coordination of traffic management measures for concurrent construction projects. Implementation of **MM TRA-1** would ensure that the project's contribution to any transportation and traffic-related cumulative impacts during construction would not be cumulatively considerable, and the associated cumulative impact would be less than significant with mitigation. The project would therefore not contribute considerably to a significant cumulative traffic impact.

Alternative Transit. Cumulative project #19 could result in significant impacts to alternative transit. This could result in a cumulative impact when combined with the project. However, as mentioned above, implementation of **MM TRA-1** (which supersedes **APM TRA-1**) would ensure certain requirements are included in a TMP to reduce potential traffic and alternative transit related impacts to a less than significant level. PG&E would implement **APM REC-1** to ensure potential safety impacts to bicycle and pedestrian traffic is less than significant. Therefore, implementation of **MM TRA-1** and **APM REC-1** would ensure the project's contribution to any traffic, including alternative transit or trail-related cumulative impacts during construction would not be cumulatively considerable.

Air Traffic Patterns. Construction and operation of the cumulative projects would not increase air traffic in the region. No cumulative impact would occur. Tribal Cultural Resources.

Tribal Cultural Resources.

Geographic Extent

The geographic extent for cumulative tribal cultural resource impacts includes the adjacent bay lowlands of the Ravenswood vicinity.

Potential Cumulative Impacts

The cumulative impacts analysis for tribal cultural resources considers the impacts of past, current, and reasonably foreseeable projects within and adjacent to the bay lowlands of the Ravenswood vicinity. The impacts on tribal cultural resources from the cumulative projects have been reduced with implementation of mitigation measures (AECOM, 2016; Alta, 2016; DPW, 2017; EIP, 2005; ICF, 2016; Laustsen, 2016; Lin, 2016; TPC/DC&E, 2012). The cumulative impact would be less than significant.

Utilities and Service Systems.

Geographic Extent

The geographic extent for this cumulative analysis is defined as the service area where the project is located, which includes the City of Menlo Park and the City of East Palo Alto.

Potential Cumulative Impacts

All cumulative projects listed in **Table 5.19-1** contribute or would contribute to the cumulative conditions for water supply and landfill capacities within the cumulative analysis study area.

Wastewater Services. Construction of the cumulative projects may result in generation of additional wastewater. All of the cumulative projects would be located in areas that are served by existing municipal sewer systems. The cumulative projects involve redevelopment of existing areas and would cumulatively contribute minimal amounts of wastewater. Project wastewater would be disposed at appropriately licensed off-site facilities and would not be a significant contribution to the minimal amounts of wastewater that would be generated by the cumulative projects. The cumulative increase in wastewater would not exceed the wastewater treatment capacity of the wastewater treatment systems. Therefore, impacts would be less than significant and no wastewater treatment requirements of the San Francisco Bay RWQCB would be exceeded.

Water Supplies and Facilities. Construction of the cumulative projects would require varying quantities of water. The cumulative projects would increase demand for water supplies during operation, but the cumulative increase from the project would not be significant because there would be no water use beyond what is used for current project operation. These cumulative projects are located within the City of Menlo Park and East Palo Alto. The project would purchase water from SFPUC for construction. Use of water from SFPUC for project construction would limited and short term. The total amount needed for project construction would be less than 2.0 af. The comparatively small quantity of water and short term use required during construction of the project would not significantly impact existing water supplies. During operation water use would not change. There is sufficient water supply available to serve the project from existing entitlements and resources, and

the cumulative effect would not require construction of new facilities or expanded entitlements (SFPUC 2011). The cumulative impact on water supplies and facilities would be less than significant.

Landfill. The regional landfill that serves the project and cumulative projects has approximately 22 million cubic yards of space remaining as of December 31, 2016 (County of San Mateo 2017) and is not expected to reach capacity until 2028. Thus the landfill has adequate capacity to accommodate this relatively small amount of solid waste in addition to the waste from the cumulative projects. The cumulative impact on landfill capacity would be less than significant.

c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The project could cause substantial adverse effects on human beings temporarily during nighttime construction, due to noise. As discussed in **Section 5.12, Noise**, construction-related nighttime noise impacts would be significant, but temporary. Implementation of **MM NO-1** would reduce the impact to less than significant. Refer to **Section 5.12, Noise** for the full description of the mitigation.

Other temporary impacts to human health during construction, include changes to air quality, exposure to geologic hazards, and exposure to hazardous materials. As discussed in **Section 5.3, Air Quality**, air quality effects would be less than significant. As discussed in **Section 5.6, Geology and Soils**, seismic impacts on workers during construction would be less than significant, and the project would not exacerbate existing seismic conditions. As discussed in **Section 5.8, Hazards and Hazardous Materials**, hazards impacts would be less than significant. Operation and maintenance activities would be comparable to current activities and no additional impacts to human beings would occur. Project impacts would be less than significant with mitigation incorporated.

5.19.1 References

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Section 6

Mitigation Monitoring Plan

6 Mitigation Monitoring Plan

PG&E proposes to construct and operate the project. An IS was prepared to assess the proposed project's potential environmental effects. The IS was prepared based on information in the PEA, project site visits, and supplemental research. The majority of the project's impacts would occur during project construction. Within PG&E's application, APMs were proposed to reduce potentially significant adverse impacts related to project construction and operation.

The purpose of this Mitigation Monitoring Plan is to ensure effective implementation of each APM, as well as the mitigation measures identified by the Initial Study and imposed by the CPUC as part of project approval.

This Mitigation Monitoring Plan includes:

- The APMs that PG&E proposed in its PEA as part of the project;
- The mitigation measures identified in the IS that PG&E has agreed to implement to mitigate the potentially significant impacts of the project;
- The actions required to implement these measures;
- The monitoring requirements; and
- The timing of implementation for each measure.

A CPUC-designated environmental monitor will carry out all construction field monitoring to ensure full implementation of all measures. In all instances where non-compliance occurs, the CPUC's designated environmental monitor will issue a warning to the construction foreman and PG&E's project manager. Continued non-compliance shall be reported to the CPUC's designated project manager. Any decisions to halt work due to non-compliance will be made by the CPUC. The CPUC's designated environmental monitor will keep a record of any incidents of non-compliance with mitigation measures, APM, or other conditions of project approval. Copies of these documents shall be supplied to PG&E and the CPUC.

6.1 Minor Project Refinements

This section describes the CPUC's process for staff approval of Minor Project Refinements (MPRs) that may be necessary due to changes needed after the applicant's final engineering of elements of the proposed project. During the course of construction, circumstances may arise that require minor deviations from the project as approved. The CPUC, along with the IS/MND environmental monitors, would evaluate any proposed deviations from the approved project to ensure they are consistent with CEQA requirements. Depending on its nature, a requested deviation would be processed as an MPR or be the subject of a Petition for Modification (PFM) submitted by the applicant to the CPUC.

MPRs would be strictly limited to minor project changes that do not trigger additional permit requirements, would not have the potential to increase the severity of a significant impact or create a new significant impact, and are within the geographic scope of the IS/MND.

If a project change would create or have the potential to create a new significant impact, increase the severity of a significant impact, or occur outside the geographic area evaluated in the IS/MND, PG&E would be required to submit a PFM. The CPUC would evaluate the PFM under CEQA, as appropriate, to determine what form of supplemental environmental review would be required.

6.2 Dispute Resolution

It is expected that the Mitigation Monitoring Plan will reduce or eliminate many potential disputes. However, even with the best preparation, disputes may occur. In such event, the following procedure will be observed:

- **Step 1.** Disputes and complaints (including those of the public) should be directed first to the CPUC-designated Project Manager for resolution. The Project Manager will attempt to resolve the dispute.
- **Step 2.** Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the Proposed Project or adopted Mitigation Monitoring Plan.
- **Step 3.** If a dispute or complaint regarding the implementation or evaluation of the Mitigation Monitoring Plan cannot be resolved informally or through enforcement or compliance action by the CPUC, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC Executive Director or his/her designee. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet and confer with the filer and other affected participants for purposes of resolving the dispute. The CPUC Executive Director shall issue an Executive Resolution describing his/her decision, and serve it on the filer and other affected participants.
- **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the Resolution, such party(ies) may appeal it to the CPUC via a procedure to be specified by the CPUC.

Parties may also seek review by the CPUC through existing procedures specified in the CPUC Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the foregoing procedure.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
5.1	AESTHETICS		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have a less than significant impact on aesthetics resources.		
5.2	AGRICULTURAL AND FOREST RESOURCES		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on agricultural and forest resources.		
5.3	AIR QUALITY		
Fugitive dust	APM AIR-1: Minimize Fugitive Dust During Construction. Consistent with Table 8-2 of the CEQA Air Quality Guidelines (Bay Area Air Quality Management District [BAAQMD] 2017c[1]), PG&E will minimize dust emissions during construction by implementing the following measures:	Dust complaint signs are posted adequately.	Before construction
	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions; or apply non-toxic soil stabilizers such as soil binders, crushed rock or gravel	Exposed surfaces are watered two times a day during dry conditions	During construction
	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	Haul trucks are adequately covered	During construction
	All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited.	Soil track-out is adequately managed	During construction
	All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour.	Vehicle speeds limits are maintained, and	During construction
	Post a publicly visible sign with the telephone number and person to contact at PG&E regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	Helicopter LZs are watered as needed prior to takeoff and landings	During construction

[1] BAAQMD 2017c in **APM AIR-1** from the PEA referred to the BAAQMD 2017 CEQA Air Quality Guidelines, which is referred to as BAAQMD 2017b elsewhere in this analysis.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
Exhaust emissions	APM AIR-2: Exhaust Emissions. Per BAAQMD CEQA guidelines, PG&E will implement the following exhaust emissions control measures. Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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.	Brief crews regarding idling limitations	During construction
	• 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions.	Idling of construction vehicle and equipment limited to 5 consecutive minutes to the greatest extent possible~~,~~ ~~and~~	During construction
	• All construction equipment will be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.	A certified mechanic maintains equipment	During construction
5.4	BIOLOGICAL RESOURCES		
California Ridgway's Rail and Salt Marsh Harvest Mouse	APM BIO-2: Avoid and Minimize Impacts on the California Ridgway's Rail and Salt Marsh Harvest Mouse. PG&E will implement the following measures to protect the California Ridgway's rail and salt marsh harvest mouse: • To protect water quality and avoid the loss of individual California Ridgway's rails and salt marsh harvest mice, activities within or adjacent to California Ridgway's rail or salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Palo Alto Baylands), including helicopter work, will not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. This measure is necessary because protective cover for California Ridgway's rails and salt marsh harvest mice is limited during very high tides, and construction	Limit activities within or adjacent to habitat before, during and after extreme tides	Prior to and during construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation.		
	• For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or smooth cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protection mats to minimize ground disturbance when working within pickleweed or smooth cordgrass.	Qualified biologist to flag ~~mark~~ access routes for crews and direct location of vegetation protection mats and ~~conduct site assessment for vegetation mats~~ determine if hand-removal of vegetation and onsite biological monitoring are required	
	• To avoid take of salt marsh harvest mouse, a biologist will assess the site to determine if: vegetation protection mats are appropriate, vegetation removal by hand is needed, and if an onsite biological monitor is needed. Prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas. Immediately following flushing, the field crew will place a mat or manually remove vegetation with nonmotorized tools (e.g., hoe, rake, trowel, or shovel) to the bare ground.	Qualified biologist to determine if vegetation protection mats are appropriate and if hand-removal of vegetation and onsite biological monitoring are required~~Observe buffers~~	
	• Conduct work within 700 feet of wetlands suitable for the Ridgway's rail between September 1 and January 15.	~~Secure compensatory mitigation~~Observe buffers	
	• Compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio (3 acres compensated for every 1 acre permanently affected) and temporary impacts on habitat for these species at a 1:1 ratio.	~~Conduct work within 700 feet of suitable Ridgway's rail habitat between September 1 and January 15~~ Secure compensatory mitigation	Following completion of construction
Western Snowy Plover	APM BIO-3: Avoid and Minimize Impacts on the Western Snowy Plover. PG&E will implement the following measures to avoid and minimize impacts on the western snowy plover: • All work on and within 600 feet of active snowy plover nests on Ravenswood Pond SF2 will be conducted outside of the snowy plover nesting season (defined as March 1 through September 1).	Conduct all work outside the nesting season on and within 600 feet of active snowy plover nests on Ravenswood Pond SF2	Prior to and during construction
	• Prior to conducting work at Ravenswood Pond SF2, a qualified biologist will conduct a pre-activity survey of the work areas and surrounding areas within 600 feet by standing on adjacent trails and levees and scanning the area with a spotting scope. If dependent chicks are present within 600 feet	Qualified biologist shall perform pre-activity surveys of work areas and surrounding areas	Prior to and during construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	of the work areas, work will be postponed until the biologist determines that the chicks are independent (i.e., until they can fly) or have left the area. If no dependent chicks are present, work may proceed and any adult snowy plovers will be allowed to leave the area on their own.		
Sensitive Natural Communities	APM BIO-5: Avoid and Minimize Impacts on Sensitive Natural Communities Including Jurisdictional Wetlands and Waters. PG&E will implement the following measures to minimize impacts on sensitive natural communities including open water, northern coastal salt marsh, and disturbed northern coastal salt marsh as well as other jurisdictional wetlands and waters of the United States (U.S.)/State (e.g., salt pannes). • Construction activities shall be designed to minimize disturbance of wetlands (including seasonal ponded areas) and regulated waters in the project area to the extent practicable. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction activities. Precautions shall be taken to avoid other damage to vegetation by people or equipment.	Minimize disturbance to wetlands~~:~~ ~~qualified biologist to mark access routes and crews to employ protective matting~~	Prior to and during project construction.
	• For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protective matting (e.g., timber mats, crane pads) to minimize ground disturbance when working within pickleweed or cordgrass. If deemed necessary by the biologist, small areas of healthy vegetation will be cleared by hand prior to placement of protective mats.	Qualified biologist to mark access routes and crews to employ protective matting~~Implement requirements of BMPs and SWPPP~~	Prior to and during project construction.
	• Erosion, sediment, and material stockpile BMPs will be installed between work areas and adjacent wetlands or waterways as required by APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP). See Section 5.9, Hydrology and Water Quality, for full description.	Implement requirements of BMPs and SWPPP~~Obtain required 404/ 401 permits/ authorizations and ensure permit measures are implemented~~.	Prior to and during project construction.
	• Compensate for both permanent and temporary impacts through consultation with the USACE and San Francisco Bay RWQCB during the Clean Water Act (CWA) 404/401 permitting process.	Obtain required 404/ 401 permits/ authorizations and ensure permit measures are implemented	Prior to and following project construction.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
Biological resources	MM BIO-1: General Avoidance of Biological Resource Impacts. (Supersedes APM BIO-1) PG&E shall implement field protocols and avoidance and minimization measures to reduce impacts on covered species and sensitive natural communities. This MM consists of the following components: • Worker Environmental Awareness Program (WEAP). PG&E will conduct environmental training for all construction and on-site personnel prior to the beginning of site work. The WEAP training will be presented by a CPUC-approved, qualified biologist. All construction crew members and contractors who attend the training will sign a form indicating that they attended the training and understood the information. Follow-up training will be conducted as needed; new workers will attend WEAP training prior to beginning at the work site. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources, as well as the terms and conditions of permits that apply to the project. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers will be informed about the presence, life history, and habitat requirements of all listed and special-status species with a potential to occur in the vicinity, with a focus on those species that could be affected within the project area. Training will also include information on state and federal laws protecting nesting birds, wetlands, and other water resources, as applicable and appropriate to the project. Additionally, personnel will be trained for situations where it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources such as an active nest be found during construction). If sensitive resources are found, the qualified biologist will provide guidelines for the personnel to avoid impacts on them. All WEAP participants will receive a brochure that outlines all this information including contact information for the appropriate environmental personnel. A record of all trained personnel will be kept on site, and a sticker indicating training completion will be worn on all worker hard hats. A copy of the training and brochure will be provided to CPUC prior to the start of construction for project files.	Implement WEAP program for all construction and on-site personnel	Prior to and during project construction.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	• Conservation Landowner Notification. PG&E will notify conservation land owner at least two business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if required by other permits.	Provide notice to conservation landowners prior to conducting activities covered in PG&E's Operations and Maintenance Habitat Conservation Plan	Prior to and during project construction.
	• Litter and trash management. All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed animal-proof trash containers and removed from the project site daily. Prohibit open fires (such as barbecues) at work sites. • Parking and vehicle speed limit. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas. Off-road parking will only be permitted in previously identified and designated work areas. Vehicle speeds on unpaved roads will not exceed 15 miles per hour. • Access route and work area limitations. Vehicles will be confined to established roadways and existing access roads, pre-approved temporary access routes, existing boardwalks, and designated matted work areas. Access routes and construction work areas will be limited to the minimum necessary to safely construct the project. • Maintenance and refueling. All equipment will be maintained to minimize the potential for leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down-gradient aquatic habitat, unless otherwise isolated from habitat by secondary containment. Vehicles and equipment operated adjacent to marshlands and open water will be checked daily to prevent leaks of materials that, if introduced to the water, could be harmful to aquatic life. Proper spill prevention and cleanup materials will be maintained in all refueling areas and work areas. • Pets and firearms. No pets, firearms, hunting or fishing will be permitted at the project site. • Cover pipes and excavations. Minimize potential for covered species to seek refuge or shelter in pipes and excavations. Inspect pipes, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts.	Minimize impacts to sensitive biological resources	Prior to and during project construction.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	• Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist will be notified and will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.		
Special status plant species	MM BIO-2: Avoid and Minimize Impacts on Special-status Plant Species. (Supersedes APM BIO-4). PG&E will implement the following measures to minimize impacts on marsh habitat potentially suitable for special-status plant species: • As part of the WEAP, include information on the identification of noxious weeds and invasive plants, the importance of noxious-weed and invasive plant control, and measures to minimize their spread. Training will include the following BMPs [best management practices] to avoid or minimize the spread of invasive plants and noxious weeds: (1) avoid working in invasive plant or noxious weed infested areas or prioritize activities so that infested areas are worked in last; (2) keep records of road maintenance activities including location and source of grading material; (3) maintain gravel and soil spoil piles free of invasive plants or noxious weeds; use areas known to be weed-free for staging and laydown areas; (4) minimize soil disturbance to the extent possible; (5) materials used for erosion control will be certified weed free (i.e. straw wattles, gravel, fill material, etc.); when restoring a site after disturbance, use a native seed mix; (6) drive on and park on established roads as much as possible; (7) off-road equipment that is not local to the project area will arrive onsite clean and free of soil and plant parts; and (8) clean clothing, footwear, and gear before moving from an infested area to a non-infested area. In addition, WEAP training will include information on invasive weeds that are known to occur in the vicinity, including stinkwort (Dittrichia graveolens), non-native spartina (Spartina spp.), and Algerian sea lavender (Limonium ramosissimum). The WEAP training program and brochure will include photographs, description, natural history information, and map showing the species' distribution in relation to project activities.	Include information on the identification of noxious weeds and invasive plants, the importance of noxious-weed and invasive plant control, and measures to minimize their spread in environmental training program prepared and implemented by PG&E	Prior to and during project construction.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	• Prior to commencement of activities located on or adjacent to non-paved surfaces a biologist will flag known populations of noxious weeds and invasive plants in the work areas. • To minimize introduction and spread of noxious weeds and invasive plants, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition. • PG&E will work in a direction from uninfested areas to infested areas as much as practical. • PG&E will minimize soil disturbance and the removal of vegetation during construction, maintenance and other ground-disturbing activities to the extent practicable. Vehicles and equipment should remain on established roads as much as is practicable. • PG&E will stage in areas not infested with weeds or treat for weed removal prior to using an infested area. • If new noxious weed or invasive plant observations are detected within or adjacent to project area, including the Ravenswood OSP, during the course of the project construction and ongoing maintenance activities, the populations will be mapped and reported to the appropriate agency contact. PG&E will conduct post-construction monitoring of any disturbed soils in the spring following completion of construction for any invasive species that inadvertently have been introduced. PG&E will report findings of any invasive plants or noxious weeds detected during project construction and/or the spring after construction to the contact for the Ravenswood OSP, Coty Sifuentes-Winters, Senior Resource Management Specialist, csifuentes@openspace.org or agency-identified alternative.	Ensure noxious weeds are not introduced.	Prior to and ~~during~~ following project construction.
5.5	CULTURAL AND PALEONTOLOGICAL RESOURCES		
Exclusion fencing	APM CUL-1: Exclusion Fencing. Temporary exclusionary fencing will be installed along the southern edge of Staging Area 3 between the work area and the Hetch Hetchy Aqueduct to ensure that project construction does not impact the eligible resource.	Install fencing	Prior to construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
Worker Environmental Training	• The types of cultural resources likely to be encountered.	Inspect fencing	Weekly during construction
	• Procedures to be taken in the event of an inadvertent cultural resources discovery (see below).	Prepare training module	Prior to construction
	• Penalties for disturbing or destroying cultural resources. • The types of fossils that could occur at the project site. • The types of lithologies in which the fossils could be preserved. • The procedures that should be taken in the event of a fossil discovery. • Penalties for disturbing paleontological resources.	Present training	Prior to construction and during construction for new personnel
Cultural Resource discoveries	APM CUL-3: Inadvertent Cultural Resource Discoveries. Because the project area is almost entirely built-over, there is high potential for inadvertent discoveries during project construction. If such discoveries take place, the following procedures will be initiated: • All ground-disturbing construction activities within 100 feet of the discovery will halt immediately. • The construction crew will protect the discovery from further disturbance until it has been assessed by a qualified archaeologist. • The construction foreman will immediately contact the designated project inspector and the PG&E Cultural Resource Specialist (CRS). • The project cultural resources specialist will coordinate with the PG&E CRS and the state and federal lead officials, as appropriate. If the discovery can be avoided or protected and no further impacts will occur, then the resource will be documented on DPR 523 forms, and no further effort will be required. • If the resource cannot be avoided and may be subjected to further impacts, qualified personnel will evaluate the significance of the discovery in accordance with the state and federal laws outlined above; personnel will implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist will complete an evaluation of historic-period resources, while evaluation of prehistoric resources will be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews,	Notifications, field verifications and documentation as described	During construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.		
Discovery of human remains	APM CR-4[2]: Unanticipated Discovery of Human Remains. If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman will contact the designated cultural resources specialist, who meets the Secretary of Interior's Standards for archaeology; the specialist will then call the San Mateo County Coroner, as appropriate. There will be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the county coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the medical county coroner determines the remains to be Native American, he/she shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).	Notifications, field verifications and documentation as described	During construction

[2] For purposes of consistency with the PEA, **APM CR-4** has not been renamed to **APM CUL-4**

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
Paleontological Resource discoveries	APM PAL-1: Unanticipated Paleontological Resource Discoveries. If unanticipated paleontological resources are discovered during construction activities, the following procedures will be followed: • Stop work immediately within 100 feet. • Contact the designated project inspector and PG&E CRS immediately. • Protect the site from further impacts, including looting, erosion or other human or natural damage. • The project CRS will arrange for a Principal Paleontologist to evaluate discovery. If the discovery is determined to be significant PG&E will implement measures to protect and document the paleontological resource. • Work may not resume within 100 feet of the find until approval by the paleontologist and PG&E CRS. • In the event that significant paleontological resources are encountered during the project, protection and recovery of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E and the lead agency. A Principal Paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved agency. A Paleontological Monitor or other qualified individual may conduct the recovery of fossil discoveries under the direction of the Principal Paleontologist.	Notifications, field verifications and documentation as described	During construction
5.6	GEOLOGY AND SOILS		
Appropriate design measures	APM GEO-1: Implement Appropriate Design Measures. Based on available references, potentially problematic subsurface conditions such as soft, loose, or liquefiable soils may exist in the project area. PG&E will perform design studies, onsite investigations, and implement appropriate design measures for foundation improvement work that will reduce potential effects of seismic ground failure, including liquefaction.	Submit the following to the CPUC for review: Completed design studies, onsite investigations, and completed design measures for foundation improvement design work.	30 days ~~P~~prior to commencement of construction
Storm water pollution	APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP) (See Section 5.9, Hydrology and Water Quality, for full description)		

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
5.7 GREENHOUSE GAS EMISSIONS			
Minimize GHG Emissions	APM GHG-1 Minimize GHG Emissions • Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend 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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.	Idling of construction vehicle and equipment limited to 5 consecutive minutes to the greatest extent possible	During construction
	• Maintain construction equipment in proper working conditions in accordance with PG&E standards.		
	• Construction equipment will be properly maintained by a certified mechanic. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program will meet at a minimum the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in CCR Title 13, Chapter 9, Sec. 2423(b)(1).	A certified mechanic maintains construction equipment	Before and during construction
5.8	HAZARDS AND HAZARDOUS MATERIALS		
Hazardous substances and emergency response	APM HAZ-1: Hazardous Substance Control and Emergency Response. PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. 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 through operation. 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	PG&E to submit the Hazardous Substance Control and Emergency Procedures to the CPUC for review	30 days before start of construction for review of plan

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	construction and materials stored on-site. If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Safety Data Sheets will be maintained and kept available on-site, as applicable.		
	Potential soil and groundwater contamination was identified within the vicinity of project work areas. Soils or groundwater removed during drilling or other activities will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or 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 hazardous wastes 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 at that location and contacting the Fire Department and Environmental Health Division immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the agencies.	Present the Hazardous Substance Control and Emergency Procedures to construction workers	Throughout construction
	PG&E will complete a standard Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.	PG&E will keep records of the Emergency Action Plan Form	Throughout construction
Worker Environmental Awareness Program for health, safety, and environment	APM HAZ-2: Worker Environmental Awareness Program for Health, Safety, and Environment (WEAP-HSE) PG&E will provide this environmental awareness program to staff prior to construction. This program will include the following components related to hazards and hazardous materials:	PG&E to submit the WEAP-HSE plan to the CPUC for review	30 days before start of construction for review of plan
	• PG&E Health, Safety, and Environmental expectations and management structure.	Present WEAP-HSE to construction workers	Throughout construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	• Applicable regulations. • Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed. • Summary of the primary workplace hazards to which workers may be exposed. • Overview of the measures identified in APM HAZ-1. • Overview of the controls identified in the SWPPP under APM HYD-1.		
Site-specific SMPs	APM HAZ-3: Adherence to Applicable Site-specific SMPs. In addition to following its own project-specific procedures during the construction phase, PG&E will adhere to any applicable site-specific plans such as the Site Management Plan (SMP) for the 1990 Bay Road Site (see Section 3.8.3.3).	PG&E to submit the SMP for 1990 Bay Road Site to the CPUC for review	30 days before start of construction
Storm water pollution	*APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP)* (See Section 5.9, Hydrology and Water Quality, for full description.)		
5.9	HYDROLOGY AND WATER QUALITY		
Storm water pollution	APM HYD-1: Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP). PG&E will prepare and implement a SWPPP to prevent construction-related erosion, sediment runoff, and discharge of other pollutants into adjacent waterways and onto neighboring properties. Because project activities will result in ground disturbance of more than one acre, PG&E will obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (and as amended by 2010-0014-DWQ and 2012-006-DWQ).	PG&E submit a copy of approved SWPPP to the CPUC.	Sixty days before the start of construction
	To obtain coverage under the permit, PG&E will develop and submit permit registration documents—including a Notice of Intent, SWPPP, risk assessment, site map, construction drawings, certification by Legally Responsible Person (LRP), contractor contact information, and annual fee—to the State of California's Stormwater Multi-Application Report Tracking System (SMARTS) database and obtain a Waste Discharger Identification (WDID) number prior to initiating construction activities. PG&E will implement the SWPPP during construction to prevent the discharge of sediment and other pollutants resulting from project construction. The SWPPP will outline implementation of BMPs for each activity that has the	Monitoring for effectiveness of storm water BMPs, notifications of any violations, and documentation as needed.	Throughout construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	potential to impact neighboring properties or degrade surrounding water quality through erosion, sediment runoff, dewatering, and discharge of other pollutants.		
Sensitive Natural Communities including Jurisdictional wetlands and waters	APM BIO-5 Avoid and Minimize Impacts on Sensitive Natural Communities Including Jurisdictional Wetlands and Waters. (See Section 5.4, Biological Resources, for full description).		
5.10	LAND USE AND PLANNING		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on land use		
5.11	MINERAL RESOURCES		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on mineral resources.		
5.12	NOISE		
Construction and nighttime noise	MM NO-1: Notices, Noise-Reducing Practices, and Complaint Response Process. (Supersedes APM NO-1). PG&E shall employ the following standard noise-reducing construction practices and additional noise-reducing measures: • Locate stationary equipment as far as practical from noise-sensitive receptors. • Limit unnecessary engine idling.	CPUC verifies that PG&E uses noise reduction devices and low noise equipment.	During construction
	• Limit all land-based construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Limit all helicopter activity to daytime hours.	CPUC verifies that helicopter activities occur during the daytime hours	During construction
	• Notification: o Residences and business owners affected by daytime helicopter activities within 1,500 feet of Staging (Landing) Areas 3 and 4 and flight paths shall be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.	CPUC verifies noise-reducing tips are included in notices to homeowners and business owners	Prior to PG&Es distribution of notices .
		CPUC verifies that PG&E has notified residents and posted notices.	Before construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	o Residences and business owners within 1,500 feet of active nighttime reconductoring sites and staging areas shall be notified at least 7 days in advance of nighttime work by mail, personal visit, or door hanger, and informed of the expected work schedule. o PG&E shall post notices in public areas, including recreational use areas, within 500 feet of the project alignment and construction work areas. o In this notice, PG&E shall state that it will perform this activity in a manner to ensure excessive noise is avoided as much as practicable. PG&E shall provide tips to homeowners and business owners on reducing noise intrusion, for example, moving indoors, closing windows and doors facing the construction and helicopter paths. PG&E shall note the efficacy of these tips in reducing noise.	CPUC verifies that PG&E has notified residents of nighttime construction at least 7 days in advance of such activities.	At least 7 days before nighttime construction activities
	• Temporary sound barriers shall be installed and maintained by the construction contractor for nighttime work conducted within 1,000 feet of sensitive receptors. Temporary sound barriers shall consist of either sound blankets at the noise source or other sound barriers/techniques such as acoustic padding or acoustic walls placed near the noise source. Barriers shall be placed such that the line-of-sight between the construction equipment and adjacent sensitive land uses is blocked. As needed, trucks used during nighttime construction work shall be equipped with either a white noise or variable volume back up alarm. If a low volume alarm cannot be installed, the alarm shall be disabled, and instead, a flagman shall be used for safe movement of trucks.	Install temporary sound barriers around the noise source between the construction site and sensitive receptors when nighttime work is planned.	During nighttime construction
		CPUC verifies trucks with backup alarms used during nighttime construction are equipped and using low volume alarms or no alarm and a flagman.	Prior to and during construction
	• PG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. PG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in the above notices and also posted conspicuously at the construction site(s). PG&E shall address any daytime-related noise complaint within one week of when the complaint is filed. If a complaint is related to nighttime construction work, PG&E shall address it within 24 hours of the filing of the complaint. PG&E shall provide monthly reports	PG&E files with the CPUC, monthly reports regarding noise complaints and their responses.	During construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	with records of complaints and responses to the CPUC. These reports shall be provided to CPUC within 15 days of the end of the month.		
Park management and signage	APM REC-1: Coordination with Park Management and Signage (See Section 5.15 Recreation, for full description).		
5.13	POPULATION AND HOUSING		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on population and housing.		
5.14	PUBLIC SERVICES		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on public services.		
5.15	RECREATION		
Park management and signage	APM REC-1: Coordination with Park Management and Signage. PG&E will coordinate closely with the Association of Bay Area Governments, the Midpeninsula Regional Open Space District, cities of Palo Alto and East Palo Alto, and the USFWS to communicate potential park and trail disruptions during project construction activities. Signs advising recreational facility users of construction activities will be posted at entrances and parking areas associated with open space areas (including Don Edwards San Francisco Bay National Wildlife Refuge [NWR], Ravenswood Open Space Preserve, and Palo Alto Baylands Nature Preserve), at the Cooley Landing Park education center, and at designated areas along the Bay Trail.	Coordinate with park management about park and trail disruptions. Post signage advising recreational facility users of construction activities	At least 14 days prior to the start of construction that could limit trail access.
	During construction activities that could limit trail access, PG&E will provide a flagman at trail crossings to ensure public safety and safe passage through the project area.	Post a flagman trail crossings during construction activities that could limit trail access.	During project construction
5-16	TRANSPORTATION AND TRAFFIC		
Construction traffic	MM TRA-1: Traffic Management Implementation. (Supersedes APM TRA-1). PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment	Preparation of a Caltrans-approved Transportation Management Plan	30 days prior to the project construction start date

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices*, 2018 edition. A Caltrans-approved Transportation Management Plan will be prepared to address impacts to vehicular, bicycle, and pedestrian traffic caused by traffic restrictions or detours. The Plan must address the following:		
	• Pedestrian and bicycle access through the construction site (between staging areas 2a and 2b and other locations along the alignment) will be maintained at all times and will adhere to the Americans with Disabilities Act (ADA) regulations and comply with Caltrans' Temporary Pedestrian Facilities Handbook.	~~Flagger for vehicles turning left into or out of the SFPUC service road~~ Flagger and warning signage for pedestrians traveling between staging areas 2a and 2b and other locations on Bay Trail where construction and overhead reconductoring activities occur.	During project construction
	• Prior to construction PG&E will survey and photograph portions of the Bay Trail that will be used during construction. If project-related construction activities damage portions of the Bay Trail, PG&E will restore those facilities in compliance with current design standards and ADA regulations.	Document preconstruction conditions of the Bay Trail within the project area. Restore any project-related damage following construction. ~~Restoration of Bay Trail~~	Prior to and ~~F~~following completion of construction.
	• Lane closures will occur during off-peak traffic hours (i.e. 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.)		
	• Advance public notification of lane closures will be provided if transit routes require temporary rerouting. Public notification will include lane closure schedule, location, and duration of public transit reroute.		
	• Project-related traffic will be required to use northbound University Avenue to enter and depart from the SFPUC service road, unless a flagger is present to direct traffic on University Avenue while the vehicles turn left into or out of the service road driveway.	Flagger for vehicles turning left into or out of the SFPUC service road	During project construction
	• PG&E will include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure construction activities and associated lane closures and detours will not significantly affect emergency response vehicles. Emergency service providers will be notified of the timing, location, and duration of construction activities. PG&E will submit verification of its consultation with emergency	Notify local emergency service providers of the location, time and duration of lane closures	Prior to project construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
	service providers to the CPUC. All roads will remain passable to emergency service vehicles at all times. of the location, date, time and duration of lane closures. PG&E will ensure emergency access is maintained at all times during lane closures.		
Air transit	MM TRA-2: Air Transit Coordination (Supersedes APM TRA-2). PG&E will implement the following protocols related to helicopter use during construction and air traffic:	Comply with all applicable FAA regulations	Prior to project construction
	• PG&E's helicopter operator will comply with all applicable FAA regulations~~,~~ and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan at least 14 days prior to helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to comply with all requirements.	~~File helicopter flight plans with the local FAA office~~	~~At least 14 days prior to project helicopter activities~~
	• PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport Manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.	Coordinate all project helicopter operations with local airports including the issuance of a NOTAM	Prior to and during project construction
Park management and signage	APM REC-1: Coordination with Park Management and Signage. PG&E will coordinate closely with the Association of Bay Area Governments, the Midpeninsula Regional Open Space District, cities of Palo Alto and East Palo Alto, and the USFWS to communicate potential park and trail disruptions during project construction activities.	Coordinate with park management about park and trail disruptions.	At least 14 days prior to the start of construction that could limit trail access.
	Signs advising recreational facility users of construction activities will be posted at entrances and parking areas associated with open space areas (including Don Edwards San Francisco Bay National Wildlife Refuge [NWR], Ravenswood Open Space Preserve, and Palo Alto Baylands Nature Preserve), at the Cooley Landing Park education center, and at designated areas along the Bay Trail.	Post signage advising recreational facility users of construction activities	At least 14 days prior to the start of construction that could limit trail access.
	During construction activities that could limit trail access, PG&E will provide a flagman at trail crossings to ensure public safety and safe passage through the project area.	Post a flagman trail crossings during construction activities that could limit trail access.	During project construction

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
5.17	TRIBAL CULTURAL RESOURCES		
	No APMs or Mitigation Measures are suggested for project construction, operation, and maintenance impacts on tribal cultural resources.		
5.18	UTILITIES AND SERVICE SYSTEMS		
	No APMs or Mitigation Measures are suggested because project construction, operation, and maintenance would have no impact on utilities and service systems.		

Note: Applicant Proposed Measures (APMs) appear in the Proponent's Environmental Assessment (A-17-12-010)

Section 7

Response to Comments

7. Response to Comments

Introduction

This section presents responses to the comments received during the public review period for the Mitigated Negative Declaration (August 30, 2018 through October 1, 2018). A newspaper notice, including information on the Draft IS/MND, the project website address, and the dates of the comment period, was published in the San Mateo County Times on August 31, 2018 and September 8, 2018 (see Appendix D for a copy of the notice).

The CPUC received five public comments from the various Federal, State and local agencies, and the Applicant.

Table 7-1 lists the persons and agencies that submitted comments on the Proposed MND. The individual comments are numbered, and responses immediately follow the comments. If revisions have been made to the MND and supporting Initial Study based on the comments, the revisions are provided with the response to the specific comment and are indicated in the text of this Final MND with ~~strikeout~~ for deletions of text, and in underline for new text.

Table 7-1 COMMENTS RECEIVED ON THE PROPOSED MITIGATED NEGATIVE DECLARATION

Commenter	Date of Comment	Comment Set
Doug Felix Obstruction Evaluation Group AJV-15 Tetra Tech AMT Support Federal Aviation Administration	Sept. 5, 2018	A
Patricia Maurice District Branch Chief, Local Development – Intergovernmental Review California Dept. of Transportation	Sept. 24, 2018	B
Brandon Liddell Senior Land Planner, Land & Environmental Management Pacific Gas & Electric Company	Sept. 27, 2018	C
YinLan Zhang Planner, Natural Resources and Land Management San Francisco Public Utilities Commission	Oct. 1, 2018	D
Guido Periscone Planning Manager City of East Palo Alto	Oct. 1, 2018	E

Comments Set A
Federal Aviation Administration

From: Doug.CTR.Felix@faa.gov <Doug.CTR.Felix@faa.gov>
Sent: Wednesday, September 05, 2018 6:05 AM
To: Energy - Ravenswood <Ravenswood@energy.ca.gov>
Subject: "Ravenswood" - FAA Response to Notice

Dear Sir,

In response to the Notice of Intent to Adopt a Mitigated Negative Declaration, Pacific Gas & Electric Company's Ravenswood-Cooley Landing 115 kV Reconductoring Project (Application A.17-12-010), the Federal Aviation Administration is providing the following information.

As stated in Title 14 of the Code of federal Regulations (14 CFR) Part 77, Objects that Affect the Navigable Airspace, the primary objectives of the Federal Aviation Administration (FAA) are to promote air safety and the efficient use of the navigable airspace.

To accomplish this mission, aeronautical studies are conducted based on information provided by proponents on FAA Form 7460-1, Notice of Proposed Construction or Alteration. If any construction or alterations which may affect navigable airspace meet FAA notice filing criteria, the FAA requests that FAA Forms 7460-1 be filed ELECTRONICALLY via https://oeaaa.faa.gov/oeaaa/external/portal.jsp as necessary for each of the proposals. The website contains instructions for using the program and contains a "Notice Criteria Tool" to determine if notice to the FAA is required for locations included in proposals. If notice to the FAA is required, instructions are available at the website for electronically filing proposals as necessary.

A-1

For future reference, you may contact the FAA Obstruction Evaluation Group at 10101 Hillwood Parkway, Fort Worth, Texas 76177 or (817) 222-5934.

Thank you,

Doug Felix
Federal Aviation Administration
Obstruction Evaluation Group
AJV-15
Tetra Tech AMT Support
10101 Hillwood Parkway
Fort Worth, TX 76177

Office: 817-222-5934
doug.ctr.felix@faa.gov
Please visit our website:
https://oeaaa.faa.gov

Responses to Comment Set A
Federal Aviation Administration

A-1 It is noted that PG&E must comply with applicable FAA regulations and file necessary forms electronically.

Comments Set B
California Dept. of Transportation

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

September 24, 2018

SCH # 2018082065
GTS # 04-SM-2018-00205
GTS ID: 9178
PM: SM – 84 – 28.576

Billie Blanchard, CPUC Project Manager
c/o California Energy Commission STEP Division
1516 9th Street, MS-12
Sacramento, CA 95814

Ravenswood - Cooley Landing 115KV Reconductoring Project – Mitigated Negative Declaration

Dear Billie Blanchard:

Thank you for your inclusion of the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The comments in this review reflect Caltrans' modernized approach to evaluating and mitigating impacts to the State Transportation Network (STN). Our Strategic Management Plan 2015-2020 aims to reduce Vehicle Miles Traveled (VMT) by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the August 2018 MND.

Project Understanding
PG&E is proposing to reconductor a 115-kV double circuit transmission line between the Ravenswood Substation in Menlo Park, California and the Cooley Landing Substation in East Palo Alto, California. The project would include the following components:

1) Reconductoring the two 115 kV Ravenswood-Cooley Landing Line circuits with new 477 kcmil (1,000 circular mils) steel-supported aluminum conductors;
2) Reinforcing existing foundations at four towers to support the new conductors;
3) Modifying four lattice steel towers to support the new conductors and provide required minimum conductor clearance;
4) Installing a new optical fiber ground wire at each tower to increase communication reliability between the two substations;
5) Installing new tubular steel poles, and modifying or replacing certain related equipment at Ravenswood Substation and Cooley Landing Substation; and,
6) Temporary guard structures and access roads, snub poles, pull sites, staging areas and other temporary work areas.

This project is located within the boundaries of East Palo Alto and Menlo Park, and includes replacing wires that cross over State Route (SR) 84. The minimum ground-to-conductor

Comments Set B, cont.
California Dept. of Transportation

clearance above SR 84 will be 27 feet. For open water areas considered suitable for sailing, a minimum conductor clearance of 47 feet would be established.

Lead Agency
As the Lead Agency, the California Public Utilities Commission is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. **B-1**

Transportation Permit
Project work that requires movement of oversized or excessive load vehicles on state roadways, such as Interstate (I-) 280, US Route (US) 101, SR 84, or SR 82 requires a transportation permit that is issued by the Department. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to: Office of Transportation Permits, California DOT Headquarters, P.O. Box 942874, Sacramento, CA 94274-0001. See the following website link for more information: http://www/dot.ca.gov/hq/traffops/permits/. **B-2**

Encroachment Permit
As stated in the MND, work that encroaches onto State right-of-way (ROW) will require an encroachment permit. Please address the following issues during the encroachment permit process: **B-3**

1) During the power line reconductoring operations, will the project install temporary power (wood) poles inside the SR 84 ROW? If so, please identify in text and graphics the exact location and duration of your operations including any staging or temporary installation of equipment.

2) If the power line installation operations inside the SR 84 ROW require freeway lane or shoulder closures, the Project must submit freeway lane closure charts along with lane closure calculations to Caltrans for prior review and approval.

Please be advised that any work or traffic control that encroaches onto the ROW requires an encroachment permit that is issued by Caltrans. To obtain an encroachment permit, a completed encroachment permit application, environmental documentation, and six (6) sets of plans clearly indicating the State ROW, and six (6) copies of signed and stamped traffic control plans must be submitted to: Office of Encroachment Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. To download the permit application and obtain more information, visit http://www.dot.ca.gov/hq/traffops/developserv/permits/.

Comments Set B, cont.
California Dept. of Transportation

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Jake Freedman at 510-286-5518 or jake.freedman@dot.ca.gov.

Sincerely,

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Responses to Comment Set B
California Dept. of Transportation

B-1 **Section 5.19 Mandatory Findings of Significance**, concludes the project's contribution would be less than cumulatively considerable. Therefore, a fair share contribution is not necessary. Impacts would be less than significant with the implementation of **MM TRA-1**. PG&E is responsible for financing the project and paying the cost of executing the proposed mitigation measures. PG&E is also responsible to coordinate their project schedule with the CPUC as well as all agencies involved. **Section 6, Mitigation Monitoring Plan**, would ensure effective implementation of each APM and MM identified in the IS and imposed by the CPUC as part of the project's approval.

B-2 It is noted that PG&E must comply with Caltrans' transportation permit requirements.

B-3 The project would install temporary wood poles within Caltrans ROW and require temporary freeway lane or shoulder closures. PG&E is responsible for obtaining all required encroachment permits and supplying to Caltrans all information required by Caltrans as part of the encroachment permit process.

Comments Set C
Pacific Gas & Electric Company

Pacific Gas and Electric Company

Brandon Liddell
SENIOR LAND PLANNER
LAND & ENVIRONMENTAL MANAGEMENT

245 MARKET STREET
SAN FRANCISCO, CA 94109

MAILING ADDRESS:
MAIL CODE N10A
PO BOX 770000
SAN FRANCISCO, CA 94177

September 27, 2018

Billie Blanchard
California Public Utilities Commission
c/o California Energy Commission STEP Division
1516 9th Street, MS-12
Sacramento, California 95814

RE: PG&E Ravenswood-Cooley Landing 115 kV Reconductoring Project (A.17-12-020): Draft Initial Study/Mitigated Negative Declaration

Dear Ms. Blanchard:

Pacific Gas and Electric Company (PG&E) appreciates the considerable effort expended by Commission staff and its consultants to prepare the environmental review for the proposed Ravenswood-Cooley Landing 115 kV Reconductoring Project (project), and welcomes the opportunity to submit the following minor comments and revisions on the Draft Initial Study (IS) and Mitigated Negative Declaration (MND):

Chapter 1, Mitigated Negative Declaration

1. **Page 1-3, Table 1-1, Required Permits and Approvals.** For clarity, please revise the title of the table to: "Permits and Approvals That May Be Required for the Project" to conform it with text and Table 4-5. In addition, please insert the following additional regulatory requirement that may be required into Table 1-1:

C-1

Regulatory Authority	Agency	Jurisdiction/Purpose	Project Requirements
FEDERAL			
Section 7 Consultation	U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern.

For similar reasons, please add the following possible requirement to Table 4-5:

Agency	Jurisdiction	Requirements
U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Section 7 Consultation - Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern

Comments Set C, cont.
Pacific Gas & Electric Company

Ms. Blanchard
September 27, 2018
Page 2

2. **Page 1-4, Section 1.4, Environmental Determination.** Second paragraph, first sentence states: "PGE's PEA identified measures to address significant impacts — the APMs — and these APMs are considered to be part of the project." This should be revised to state: "PGE's PEA identified measures to ~~address significant~~ minimize project impacts — the APMs — and these APMs are considered to be part of the project." APMs address both potentially-significant and less-than-significant impacts. **C-2**

3. **Page 1-4, Section 1.4, Environmental Determination.**

Section 4, Project Description

4. **Page 4-21, Section 4.12.3, Work Areas.** Last paragraph states: "Because no grading is proposed, and work areas would be established by either matting over existing vegetation, or mowing, PG&E would actively restore project work areas following construction." Consistent with PG&E's response to an earlier inquiry, this should be revised to state: "Because no grading is proposed, and work areas would be established by either matting over existing vegetation, or mowing, PG&E ~~will~~ does not anticipate needing to actively restore project work areas following construction." **C-3**

5. **Page, 4-24, Table 4-5:** Please see #1 above. **C-4**

Section 5, Environmental Analysis and Mitigation

6. **Regulatory Background, Discussion of Local Regulatory Requirements.** In the Regulatory Background discussions of local ordinances, policies and/or regulations, the document does not consistently state that the CPUC retains exclusive jurisdiction over the siting and design of the project pursuant to CPUC GO No. 131-D, and as such PG&E is not subject to local discretionary land use regulations. To avoid confusion, PG&E requests that that the discussion of local ordinances, policies, and/or regulations described as part of the Regulatory Background discussions that begin on pages 5.1-9, 5.2-2, 5.4-17, 5.5-15, 5.5-17, 5.14-3, 5.16-8, and 5.17-6, are prefaced with the following or similar language: **C-5**

   "The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review."

Section 5.1, Aesthetics

7. **Page 5.1-11, Section 5.1.2, Environmental Impacts and Mitigation Measures, Project Visual Description.** Third paragraph, third sentence states: "Cage-top extensions will add approximately 10 feet in height to towers;. . . ." This should be revised to state: "Cage-top extensions will add approximately 10 feet in height to ~~t~~Towers 1 and 2;. . . ." **C-6**

8. **Page 5.1-23, Section 5.1.2, Environmental Impacts and Mitigation Measures, Aesthetics Impacts, CEQA Question c., Operation and Maintenance.** First paragraph, first sentence states: "The installation of cage-top extensions and OPGW peaks on four transmission towers in the **C-7**

2

Comments Set C, cont.
Pacific Gas & Electric Company

project area. . ." This should be revised to state: "The installation of cage-top extensions on Towers 1 and 2, and OPGW peaks on ~~four~~ all nine transmission towers in the project area. . ." In the same paragraph, the thirds sentence states: "Specifically, cage-top extensions would add approximately 10 feet in height to each tower and OPGW peaks would be approximately 4.5 feet taller." This should be clarified to state: "Specifically, cage-top extensions would add approximately 10 feet in height to ~~each tower~~ Towers 1 and 2, and OPGW peaks would ~~be~~ add approximately 4.5 feet in height ~~taller~~ to all nine towers."

C-7 cont.

Section 5.6, Geology and Soils

9. **Page 5.6-11, Section 5.6.1, Setting, Regulatory Background, State.** The second paragraph discusses the need for a Soils Engineering Report citing Chapter 18, Section 1803 of the California Building Code (CBC). Because the project does not propose to install any facilities subject to a building permit, compliance with CBC geotechnical engineering analysis requirements is not required. For this reason, PG&E requests that the second paragraph on page 5.6-11 be deleted.

C-8

Section 5.16, Transportation and Traffic

10. **Page 5.16-9, Section 5.16.2, Environmental Impacts and Mitigation Measures, APM TRA-2: Air Transit Coordination.** PG&E proposes to revise APM TRA-2 to more accurately describe the planned coordination of helicopter activities with the FAA. Please replace the current APM TRA-2 with the following revised APM-2:

    APM TRA-2: Air Transit Coordination. PG&E will implement the following protocols related to helicopter use during construction and air traffic:

    - PG&E's helicopter operator will comply with all applicable FAA regulations and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan within 14 days of helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to ensure compliance with all requirements.
    - PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction.

C-9

11. **Page 5.16-13, Section 5.16.2, Environmental Impacts and Mitigation Measures, MM TRA-2: Air Transit Coordination.** PG&E proposes to revise MM TRA-2 to more accurately describe the planned coordination of helicopter activities with the FAA. PG&E request that the proposed MM TRA-2 be revised as follows:

    MM TRA-2: Air Transit Coordination. (Supersedes APM TRA-2). PG&E will implement the following protocols related to helicopter use during construction and air traffic:

    - PG&E's helicopter operator will comply with all applicable FAA regulations and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan within 14 days of helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA

C-10

Comments Set C, cont.
Pacific Gas & Electric Company

Ms. Blanchard
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Page 4

office will define the scope of action required in the CAP and will coordinate with the helicopter operator to comply with all requirements.

- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.

C-10 cont.

12. **Page 5.6-12, Section 5.16.2, Environmental Impacts and Mitigation Measures, CEQA Question c., Construction.** Please revise the second paragraph to state that PG&E utility projects are not subject to the discretionary authority of the Santa Clara County Comprehensive Land Use Plan (CLUP) for the Palo Alto Airport as follows: "Palo Alto Airport is located less than a mile from the southern portion of the project. The CLUP for the airport identifies safety zones and height restriction areas located within the project area. Because local airport land use commissions do not have discretionary authority over existing land uses or PG&E utility projects, the CLUP requirement to review proposed new land uses does not apply to this project. However, PG&E's project is consistent with CLUP-identified safety zones and height restrictions. . . ."

C-11

Section 5.19, Mandatory Findings of Significance

13. **Pages 5.19-1 to 5.19-2.** The language in Impact MFOS-a does not match the language in CEQA Guidelines Section 15065(a)(1). Please insert "substantially" before "degrade the quality of the environment" and before "reduce the number or restrict the range . . . " in the text in the table at the top of page 5.19-1 and in the text of heading "a" in the middle of page 5.19-1. The same insertions should be made to the text of the first full paragraph on page 5.19-2 so that the language of the impact determination is consistent with MFOS-a.

    The discussions on page 5.19-2 should be updated to reflect the correct legal standard under both "Rare and Endangered Plants and Animals" and "Plant and Animal Communities." PG&E believes it is very unlikely that there would be a substantial reduction in the number or range of rare or endangered plants or wildlife without mitigation as to all of these activities, but at a minimum suggests adding the following revisions:

    - **Plant and Animal Communities.** 1st line, add "substantially" before "reduce the number . . . "
    - **Rare or Endangered Plants and Animals.** Suggest revising the discussion, starting with the second paragraph, to read:

      Construction activities could injure or kill rare or endangered wildlife individuals, potentially resulting in a substantial reduction in the number of rare or endangered wildlife species occurring in the project study area. Construction activities would also result in noise and light impacts, which could affect wildlife breeding behavior or cause nest abandonment, and, therefore, potentially cause a substantial reduction in rare or endangered species numbers. Work within 600 feet of active snowy plover nests is required to occur outside of the nesting season and surveys would be conducted prior to construction work (APM BIO- 3). In addition, access routes are required to be flagged

C-12

4

Comments Set C, cont.
Pacific Gas & Electric Company

in wetlands as well as compensation for temporary and permanent impacts to wetland and waters habitats (APM BIO-5) would reduce construction impacts. APMs would reduce the potential for the project to substantially reduce the number or restrict the range of a rare or endangered plant or animal, but not to less than significant. MM BIO-1 requires environmental training for workers, covering excavations, and monitoring for sensitive biological resources during project activities, including flagging routes, use of mats, and hand removal by a biologist of sensitive vegetation. With mitigation, the project would not substantially reduce the number or restrict the range of any rare or endangered animal species. The potential impacts would be reduced to less than significant."

C-12 cont.

Section 6, Mitigation Monitoring Plan

C-13

14. **Page 6.5, Table 6-1, 5.4 Biological Resources, APM BIO-2.** Please revise the Monitoring Requirement for the 2nd bullet to read: "Qualified biologist to determine if hand-removal of vegetation and onsite biological monitoring are required." In addition, the Monitoring Requirement for the 3rd and 4th bullets are flipped. For the "Secure compensatory mitigation" Monitoring Requirement, please update the Timing of Action field to read: "Following completion of construction."

15. **Page 6.18, Table 6-1, 5.12 Noise, MM NO-1.** PG&E requests that the Monitoring Requirement and Timing of Action for the 1st bullet on page 6.18 be revised to further clarify that the MM requirement is applicable to nighttime work only, consistent with the MM. Please revise the Monitoring Requirement entry to read: "Install temporary sound barriers around the noise source between the construction site and sensitive receptors when nighttime work is planned." Please revise the Timing of Action to read: "During nighttime construction."

C-14

16. **Page 6.20, Table 6-1, 5-16 Transportation and Traffic, MM TRA-1.** PG&E requests that the Monitoring Requirement and Timing of Action for the 2nd bullet on page 6.20 be revised to more-closely conform to the MM. We suggest that the Monitoring Requirement entry be revised to read: "Document preconstruction conditions of the Bay Trail within the project area. Restore any project-related damage following construction ~~Restoration of Bay Trail.~~" Please revise the Timing of Action to read: "Prior to and ~~F~~following completion of construction."

C-15

Errata

1. **Page 1-1, Section1.2, Introduction.** In the second sentence, italicize CEQA in "CEQA Guidelines."
2. **Page 1-8, Section 1.5, Applicant Proposed Measures and Mitigation Measures.** Insert a horizontal line above APM HAZ-2 to separate the text from the prior APM.
3. **Page 4-24, Section 4.13, Construction Schedule.** In the last sentence of the paragraph, please change "competed" to "completed."
4. **Page 4-25, Section 4.16, Applicant Proposed Measures.** Third paragraph, last sentence states: "The determination to keep or supersede an APM is identified in the table below for each APM." The referenced Table 4-6 only lists APMs and does not indicate which APMs have been superseded by MMs. Please either revise the sentence to reference Section 1.5, which identifies superseded APMs, or revise Table 4-6 to include MMs and superseded APMs.

C-16

C-17

C-18

C-19

Comments Set C, cont.
Pacific Gas & Electric Company

Ms. Blanchard
September 27, 2018
Page 6

5. **Page 5.3-6, Figure 5.3-1, Section 5.3.1, Setting.** The location of the Aspire East Palo Alto Phoenix Academy is incorrect on Figure 5.3-1. The address is 1039 Garden St., East Palo Alto, approximately 0.3 miles southwest of Cooley Landing Substation. **C-20**
6. **Page 5.4-2, Figure 5.4-1, Section 5.4.1, Setting.** The white hatched pattern designating temporary impacts is not visible against the white background of the figure legend. **C-21**
7. **Page 6-4, Table 6-1 Mitigation Monitoring Plan, APM AIR-2.** 1st bullet, please delete "and" following "extent possible," in the Monitoring Requirement column. **C-22**
8. **Page 6-20, Table 6-1 Mitigation Monitoring Plan, MM TRA-1.** Please move the Monitoring Requirement assigned to the 1st bullet to the 5th bullet. **C-23**

PG&E appreciates the opportunity to provide these comments. Please feel free to contract me if further information or clarification is necessary.

Sincerely,

Brandon Liddell
Pacific Gas and Electric Company

cc:
David Kraska, Pacific Gas and Electric Company
Mathew Swain, Attorney for Pacific Gas and Electric Company
Scott Oppelt, Stantec

6

Responses to Comment Set C
Pacific Gas & Electric Company

C-1 The edits have been made as described in this comment to tables, **Table 1-1** and **Table 4-5.**

TABLE 1-1 ~~REQUIRED~~ PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Regulatory Authority	Agency	Jurisdiction/Purpose	Project Requirements
FEDERAL			
Section 404 Nationwide Permit	U.S. Army Corps of Engineers (USACE)	Work in "waters of the United States," including wetlands.	For access required across marshlands that result in placement of fill.
Bay Area Habitat Conservation Plan	U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Implementation of measures and recordation of habitat impacts for California Ridgeway's rail and salt marsh harvest mouse.
Section 7 Consultation	U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern.

TABLE 4-5 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Agency	Jurisdiction	Requirements
FEDERAL/STATE AGENCIES		
U.S. Army Corps of Engineers (USACE)	Work in "waters of the United States," including wetlands.	Section 404 Nationwide Permit - For access required across marshlands that result in placement of fill.
U.S. Fish and Wildlife Service (USFWS)	Impacts on federally listed species or critical habitat.	Bay Area Habitat Conservation Plan - Implementation of measures and recordation of habitat impacts for California Ridgeway's rail and salt marsh harvest mouse
	Impacts on federally listed species or critical habitat.	Section 7 Consultation – Implementation of measures and recordation of habitat impacts for western snowy plover and California least tern.

C-2 The edit has been made on page 1-4 as described in this comment.

1.4 Environmental Determination

…

PGE's PEA identified measures to ~~address significant~~ minimize project impacts — the APMs — and these APMs are considered to be part of the project. Based on the IS analysis, additional mitigation measures (MMs) are identified for adoption to ensure that impacts of the project would be less than significant. The additional mitigation measures either supplement, or supersede the APMs. PG&E has agreed to implement all of the additional recommended mitigation measures as part of the project.

C-3 The edit has been made on page 4-21 as described in this comment.

Cleanup and Post-Construction Restoration

…
Because no grading is proposed, and work areas would be established by either matting over existing vegetation, or mowing, PG&E ~~would~~ does not anticipate needing to actively restore project work areas following construction but would as needed.

C-4 As explained in the response to Comment C-1, the edit has been made to **Table 4-5**.

C-5 The paragraph has been added in the discussion of local regulations on pages 5.1-9, 5.2-2, 5.4-17, 5.5-15, 5.5-17, 5.14-3, 5.16-8, and 5.17-6 as described in this comment.

Local

The project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design and construction of the project. Local ordinance policies and requirements are summarized here for informational purposes and to assist with CEQA review.

C-6 The edit has been made on page 5.1-11 as described in this comment.

Project Visual Description

…
Specific to aesthetics, the project would include the addition of cage-top extensions to two of the line's nine towers (Towers 1 and 2) and the addition of optical fiber ground wire (OPGW) peaks to the top of all towers. The cage-top extensions and OPGW peaks will be constructed of materials similar to those used for the existing towers. Cage-top extensions will add approximately 10 feet in height to ~~t~~Towers1 and 2; OPGW peaks will be approximately 4.5 feet. In addition, a new TSP would be installed at both the Ravenswood Substation and Cooley Landing Substation and would be approximately 55 feet tall and 80 feet tall, respectively (PGE 2018e).

C-7 The edit has been made on page 5.1-23 as described in this comment. Overall, the text revisions (10 feet of cage extensions on only two towers instead of all nine; 4.5 feet of added structure on nine towers instead of four) would not affect the project's impacts or conclusions made regarding Aesthetics. The change from 1) OPGW peaks on four towers to all nine towers and 2) cage extension from nine towers to only two towers would not change the conclusion that the added structures "would not substantially degrade the existing visual character or quality of the site and its surroundings." In actuality, these revisions/fixes reduce the overall amount of added structures as described before.

- … **these modifications would be the only noticeable permanent, physical change to the views** when the project is complete.

- **These added heights, as compared to the existing heights of the towers, and use of the same materials as the existing towers** would not substantially degrade the existing visual character or quality of the site and its surroundings

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. The installation of cage-top extensions on Towers 1 and 2, and OPGW peaks on ~~four~~ all nine transmission towers in the project area, including raised conductors and an optical fiber, would be slightly noticeable to viewers in the project area, primarily to those in the Don Edwards San Francisco Bay NWR. However, these modifications would be the only noticeable permanent, physical change to the views when the project is complete. Specifically, cage-top extensions would add approximately 10 feet in height to ~~each tower~~ Towers 1 and 2, and OPGW peaks would ~~be~~ add approximately 4.5 feet ~~taller~~ to all nine towers. These added heights, as compared to the existing heights of the towers, and use of the same materials as the existing towers would not substantially degrade the existing visual character or quality of the site and its surroundings. In addition, numerous vertical extending industrial components currently characterize views of the Ravenswood Substation and Cooley Landing Substation in which two new TSPs (one at each substation) would not be discernible and would not substantially degrade the existing visual character or quality of the site and its surroundings.

C-8 The edit on page 5.6-11 has been made as described in this comment. Other references to the California Building Code on pages 5.6-12 – 5.6-16 were also removed. Text has also been added to the monitoring requirement for **APM GEO-1** on page 6-13 in **Table 6-1** of the Mitigation Monitoring Plan to ensure that the CPUC can review the geotechnical studies and foundation design and ensure they include appropriate design standards.

State

Engineering and Construction Codes and Standards. Design and construction of the project is governed by ~~a variety of codes and standards. One such code that specifically regulates topics relevant to geology and geotechnical engineering, such as earthwork standards and seismic safety is~~ CPUC GO 95. This general order provides general standards for design and construction of overhead electric transmission and distribution lines.

~~The most recent version of the California Building Code (CBC) (CBC 2016) is another such code. Chapter 18, Section 1803 of the CBC requires a Soils Engineering Report that shall specifically include laboratory test data; associated geotechnical engineering analysis; and a thorough discussion of seismicity, liquefaction, dynamic compaction, compressible soils, corrosive soils, and ground rupture due to faulting. This report would also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present. In accordance with the California Business and Professions Code the appropriate qualified California licensed individual(s) are required to sign and seal the Soils Engineering Report.~~

TABLE 6-1 MITIGATION MONITORING PLAN

APM or MM		Monitoring Requirement	Timing of Action
...			
5.6	GEOLOGY AND SOILS		
Appropriate design measures	APM GEO-1: Implement Appropriate Design Measures. Based on available references, potentially problematic	Submit the following to	30 days p~~P~~rior to

	subsurface conditions such as soft, loose, or liquefiable soils may exist in the project area. PG&E will perform design studies, onsite investigations, and implement appropriate design measures for foundation improvement work that will reduce potential effects of seismic ground failure, including liquefaction.	the CPUC for review: Completed design studies, onsite investigations, and completed design measures for foundation improvement design work.	commencement of construction

C-9 The edit has been made on page 5.16-9 as described in this comment. The same edit has been made to page 4-29.

5.16.2 Environmental Impacts and Mitigation Measures

…

APM TRA-2: Air Transit Coordination. PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E's helicopter operator will comply with all applicable FAA regulations and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan within 14 days of helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to ensure compliance with all requirements.
- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction.

C-10 The edit has been made on page 5.16-13 as described in this comment. The same edits have been made to page 1-11.

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?

Construction

…

MM TRA-2: Air Transit Coordination. (Supersedes **APM TRA-2).** PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E's helicopter operator will comply with all applicable FAA regulations~~.~~ and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan at least 14 days prior to helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action

required in the CAP and will coordinate with the helicopter operator to comply with all requirements.

- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.

C-11 The edit has been made on page 5.6-12 as described in this comment.

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?

Construction

…

Palo Alto Airport is located less than a mile from the southern portion of the project. The CLUP for the airport identifies safety zones and height restriction areas located within the project area. Because local airport land use commissions do not have discretionary authority over existing land uses or PG&E utility projects, the CLUP requirement to review proposed new land uses does not apply to this project. However, PG&E's project is consistent with CLUP-identified safety zones and height restrictions. Towers 8 and 9 are located within the traffic pattern zone. The CLUP states that the traffic pattern zone is routinely overflown by aircraft operating in the airport traffic pattern. Towers 4 through 9 are located within the airport's height restriction zone that has been established by the CLUP using Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. The height restriction altitude gradually increases as it moves further away from the airport runway, with the most restrictive altitude being closest to the airport runway. The Cooley Landing Substation and Towers 7 through 9 are within the area mapped for a height restriction of approximately 154 feet; moving north the restricted height increases and is approximately 254 feet at Tower 6, approximately 304 feet at Tower 5, and approximately 354 feet at Tower 4. No height restrictions are defined in the project area north of Tower 4.

C-12 PG&E's requested edits have been made in the appropriate places on pages 5.19-1 and 5.19-2 as described in this comment. This language mirrors that contained in Section 15065 of CEQA Guidelines (Mandatory Findings of Significance).

5.19 Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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 an ~~rare or~~ endangered, rare ~~plant or animal~~ or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

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 an ~~rare or~~ endangered, rare or threatened~~plant or animal~~ species, or eliminate important examples of the major periods of California history or prehistory?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.

Fish and Wildlife Species

…

The project therefore would not substantially degrade environmental quality through habitat modification or substantially reduce the habitat of a fish or wildlife population to drop below self-sustaining levels. There are no known native wildlife nursery sites or migratory routes for any native resident or migratory fish or wildlife species in the project area. With mitigation, the project would reduce the introduction of invasive weeds and noxious plants, and minimize the risk of fragmenting any wildlife habitat. The impacts would be less than significant after implementing **MM BIO-1** and **MM BIO-2**.

Plant and Animal Communities

No special-status plant species were located on site; therefore, the project would not reduce the number or restrict the range of any rare, threatened, or endangered plant species. Construction impacts would be isolated to the individual work areas, would not eliminate an entire plant or animal community due to the small area of disturbance at Towers 2 and 8, and would not have indirect impacts such as introducing invasive weeds. Direct and indirect impacts on plant communities may reduce the number of plants within the plant community in the Study Area. ~~The use of mats and hand trimming or removal of plant vegetation (**APM BIO-2**).~~ APMs would reduce the potential for the project to substantially reduce the number of any plant and animal community, but not to less than significant. **MM BIO-1** requires environmental training for construction workers, and monitoring for sensitive biological resources during project activities, including flagging routes, use of mats, and hand removal by a biologist of sensitive vegetation. **MM BIO-2** requires control and monitoring to reduce the introduction and spreading of invasive weeds and noxious plants. The potential impacts on individual plants or animals would not eliminate or threaten to eliminate an entire plant or animal population or community. With the addition of **MM BIO-1** and **MM BIO-**2 the potential impacts would be reduced to less than significant.

Rare, Threatened, or Endangered Plants and Animals

No special-status plant species were located on site; therefore, the project would not substantially reduce the number or restrict the range of any rare, threatened, or endangered plant species. However, the indirect loss of potential habitat that supports these special-status plant species could result from construction activities.

Construction activities could injure or kill individual rare, threatened, or endangered wildlife, resulting in a substantial reduction in the number of rare, threatened, or endangered wildlife species occurring in the project study area especially if the species already occurs in low numbers, such as salt marsh harvest mouse. Construction activities would also result in noise and light impacts, which could affect wildlife breeding behavior or cause nest abandonment, and, therefore, cause a substantial reduction in rare, threatened, or endangered species numbers. Work within 600 feet of active snowy plover

nests is required to occur outside of the nesting season and surveys would be conducted prior to construction work (**APM BIO-3**). In addition, access routes are required to be flagged in wetlands as well as compensation for temporary and permanent impacts to wetland and waters habitats (**APM BIO-5**) would reduce construction impacts**.** APMs would reduce the potential for the project to substantially reduce the number or restrict the range of a rare, threatened, or endangered plant or animal, but not to less than significant. **MM BIO-1** requires environmental training for workers, covering excavations, and monitoring for sensitive biological resources during project activities, including flagging routes, use of mats, and hand removal by a biologist of sensitive vegetation. With mitigation, the project would not substantially reduce the number or restrict the range of any rare, threatened, or endangered animal species. The potential impacts would be reduced to less than significant.

C-13 The edits have been made on page 6-5 as described in this comment. However, instead of the monitoring requirement for bullet 3 on page 6-5 reading "Conduct work within 700 feet of suitable Ridgway's rail habitat between September 1 and January 15", edits were made to show the monitoring requirement as a more general requirement: "Observe buffers".

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
...			
5.4	BIOLOGICAL RESOURCES		
California Ridgway's Rail and Salt Marsh Harvest Mouse	APM BIO-2: Avoid and Minimize Impacts on the California Ridgway's Rail and Salt Marsh Harvest Mouse. PG&E will implement the following measures to protect the California Ridgway's rail and salt marsh harvest mouse: • To protect water quality and avoid the loss of individual California Ridgway's rails and salt marsh harvest mice, activities within or adjacent to California Ridgway's rail or salt marsh harvest mouse habitat (i.e., areas of northern coastal salt marsh in and around the Ravenswood OSP and Palo Alto Baylands), including helicopter work, will not occur within two hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated. This measure is necessary because protective cover for California Ridgway's rails and salt marsh harvest mice is limited during very high tides, and construction activities could disturb and flush individuals and prevent them from reaching available cover, which would increase their risk of predation.	Limit activities within or adjacent to habitat before, during and after extreme tides	Prior to and during construction

• For activities that will result in ground disturbance in tidal marsh or coastal wetland habitat, including the removal of marsh vegetation, a biologist will flag access routes for crews when working in pickleweed or smooth cordgrass dominated habitats in order to minimize impacts on these species. Crews will use protection mats to minimize ground disturbance when working within pickleweed or smooth cordgrass.	Qualified biologist to flag ~~mark~~ access routes for crews and direct location of vegetation protection mats and ~~conduct site assessment for vegetation mats~~ determine if hand-removal of vegetation and onsite biological monitoring are required	
• To avoid take of salt marsh harvest mouse, a biologist will assess the site to determine if: vegetation protection mats are appropriate, vegetation removal by hand is needed, and if an onsite biological monitor is needed. Prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas. Immediately following flushing, the field crew will place a mat or manually remove vegetation with nonmotorized tools (e.g., hoe, rake, trowel, or shovel) to the bare ground.	Qualified biologist to determine if vegetation protection mats are appropriate and if hand-removal of vegetation and onsite biological monitoring are required~~Observe buffers~~	
• Conduct work within 700 feet of wetlands suitable for the Ridgway's rail between September 1 and January 15.	~~Secure compensatory mitigation~~ Observe buffers	
• Compensate for permanent impacts on habitat for the California Ridgway's rail and salt marsh harvest mouse at a 3:1 ratio (3 acres compensated for every 1 acre permanently affected) and temporary impacts on habitat for these species at a 1:1 ratio.	~~Conduct work within 700 feet of suitable Ridgway's rail habitat between September 1 and January 15~~ Secure compensatory mitigation	Following completion of construction

C-14 The edits have been made on page 6-18 as described in this comment.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
...			
5.12	NOISE		
Construction and nighttime noise	MM NO-1: Notices, Noise-Reducing Practices, and Complaint Response Process. (Supersedes APM NO-1). PG&E shall employ	CPUC verifies that PG&E uses noise	During construction

	the following standard noise-reducing construction practices and additional noise-reducing measures: • Locate stationary equipment as far as practical from noise-sensitive receptors. • Limit unnecessary engine idling.	reduction devices and low noise equipment.	
	• Limit all land-based construction activity near noise-sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Limit all helicopter activity to daytime hours.	CPUC verifies that helicopter activities occur during the daytime hours	During construction
	• Notification: o Residences and business owners affected by daytime helicopter activities within 1,500 feet of Staging (Landing) Areas 3 and 4 and flight paths shall be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.	CPUC verifies noise-reducing tips are included in notices to homeowners and business owners	Prior to PG&Es distribution of notices .
		CPUC verifies that PG&E has notified residents and posted notices.	Before construction
	o Residences and business owners within 1,500 feet of active nighttime reconductoring sites and staging areas shall be notified at least 7 days in advance of nighttime work by mail, personal visit, or door hanger, and informed of the expected work schedule. o PG&E shall post notices in public areas, including recreational use areas, within 500 feet of the project alignment and construction work areas. o In this notice, PG&E shall state that it will perform this activity in a manner to ensure excessive noise is avoided as much as practicable. PG&E shall provide tips to homeowners and business owners on reducing noise intrusion, for example, moving indoors, closing windows and doors facing the construction and helicopter paths. PG&E shall note the efficacy of these tips in reducing noise.	CPUC verifies that PG&E has notified residents of nighttime construction at least 7 days in advance of such activities.	At least 7 days before nighttime construction activities
	• Temporary sound barriers shall be installed and maintained by the construction contractor for nighttime work conducted within 1,000 feet of sensitive receptors. Temporary sound barriers shall consist of either sound blankets at the noise source or other sound barriers/techniques such as acoustic padding or	Install temporary sound barriers around the	During nighttime construction

	acoustic walls placed near the noise source. Barriers shall be placed such that the line-of-sight between the construction equipment and adjacent sensitive land uses is blocked. As needed, trucks used during nighttime construction work shall be equipped with either a white noise or variable volume back up alarm. If a low volume alarm cannot be installed, the alarm shall be disabled, and instead, a flagman shall be used for safe movement of trucks.	noise source between the construction site and sensitive receptors when nighttime work is planned.	
		CPUC verifies trucks with backup alarms used during nighttime construction are equipped and using low volume alarms or no alarm and a flagman.	Prior to and during construction
	• PG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. PG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in the above notices and also posted conspicuously at the construction site(s). PG&E shall address any daytime-related noise complaint within one week of when the complaint is filed. If a complaint is related to nighttime construction work, PG&E shall address it within 24 hours of the filing of the complaint. PG&E shall provide monthly reports with records of complaints and responses to the CPUC. These reports shall be provided to CPUC within 15 days of the end of the month.	PG&E files with the CPUC, monthly reports regarding noise complaints and their responses.	During construction

C-15 The edits have been made on page 6-20 as described in this comment, as shown below.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
...			
5-16	TRANSPORTATION AND TRAFFIC		

Construction traffic	MM TRA-1: Traffic Management Implementation. (Supersedes APM TRA-1). PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices*, 2018 edition. A Caltrans-approved Transportation Management Plan will be prepared to address impacts to vehicular, bicycle, and pedestrian traffic caused by traffic restrictions or detours. The Plan must address the following:	Preparation of a Caltrans-approved Transportation Management Plan	30 days prior to the project construction start date
	• Pedestrian and bicycle access through the construction site (between staging areas 2a and 2b and other locations along the alignment) will be maintained at all times and will adhere to the Americans with Disabilities Act (ADA) regulations and comply with Caltrans' Temporary Pedestrian Facilities Handbook.	~~Flagger for vehicles turning left into or out of the SFPUC service road~~ Flagger and warning signage for pedestrians traveling between staging areas 2a and 2b and other locations on Bay Trail where construction and overhead reconductoring activities occur.	During project construction
	• Prior to construction PG&E will survey and photograph portions of the Bay Trail that will be used during construction. If project-related construction activities damage portions of the Bay Trail, PG&E will restore those facilities in compliance with current design standards and ADA regulations.	Document preconstruction conditions of the Bay Trail within the project area. Restore any project-related damage following construction. ~~Restoration of Bay Trail~~	Prior to and ~~F~~following completion of construction.

	• Lane closures will occur during off-peak traffic hours (i.e. 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.) • Advance public notification of lane closures will be provided if transit routes require temporary rerouting. Public notification will include lane closure schedule, location, and duration of public transit reroute.		
	• Project-related traffic will be required to use northbound University Avenue to enter and depart from the SFPUC service road, unless a flagger is present to direct traffic on University Avenue while the vehicles turn left into or out of the service road driveway.	Flagger for vehicles turning left into or out of the SFPUC service road	During project construction
	• PG&E will include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure construction activities and associated lane closures and detours will not significantly affect emergency response vehicles. Emergency service providers will be notified of the timing, location, and duration of construction activities. PG&E will submit verification of its consultation with emergency service providers to the CPUC. All roads will remain passable to emergency service vehicles at all times. of the location, date, time and duration of lane closures. PG&E will ensure emergency access is maintained at all times during lane closures.	Notify local emergency service providers of the location, time and duration of lane closures	Prior to project construction
Air transit	MM TRA-2: Air Transit Coordination (Supersedes APM TRA-2). PG&E will implement the following protocols related to helicopter use during construction and air traffic:	Comply with all applicable FAA regulations	Prior to project construction
	• PG&E's helicopter operator will comply with all applicable FAA regulations~~,~~ and ~~helicopter flight plans will be filed with the local FAA office regulating the local air traffic control plan at least 14 days prior to helicopter activities.~~ will contact the local FAA office to determine if a Congested Area Plan (CAP) is needed. If a CAP is needed, the local FAA office will define the scope of action required in the CAP and will coordinate with the helicopter operator to comply with all requirements.	~~File helicopter flight plans with the local FAA office~~	~~At least 14 days prior to project helicopter activities~~
	• PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during project construction. Coordination will include working with the Palo Alto Airport Manager for the issuance of a NOTAM informing pilots departing from the nearest departure runway of helicopter activity during project construction and reconductoring activities.	Coordinate all project helicopter operations with local airports including the issuance of a NOTAM	Prior to and during project construction

C-16 The edit has been made on page 1-1 as described in this comment.

1.2 Introduction

Pursuant to the California Environmental Quality Act (CEQA), the California Public Utilities Commission (CPUC) must prepare an Initial Study (IS) for the project to determine if any significant adverse effects on the environment would result from project implementation. The IS utilizes the significance criteria outlined in Appendix G of the *CEQA Guidelines*. If the IS for the project indicates that a significant adverse impact may occur, the CPUC would be required to prepare an Environmental Impact Report.

C-17 The edit has been made on page 1-8 as described in this comment.

C-18 The edit has been made on page 4-24 as described in this comment.

C-19 The sentence on page 4-25 has been deleted as it should not have been included in the document.

4.16 Applicant Proposed Measures

…

Table 4-6 details each APM by environmental issue area. In some cases, mitigation measures presented in **Section 5** either expand upon or add detail to the APMs presented in **Table 4-6** if necessary; to ensure that impacts would be reduced to less than significant levels. When there are no APMs proposed for a technical area (e.g., Aesthetics), the technical section is not listed in the table below. ~~The determination to keep or supersede an APM is identified in the table below for each APM.~~

C-20 Figure 5.3-1 has been updated based on the address of the Aspire East Palo Alto Phoenix Academy listed in this comment. This address is beyond the extent of the figure so is no longer displayed.

C-21 Figure 5.4-1 has been updated based on this comment to make the symbol for the project's temporary impacts more visible.

C-22 The edit has been made on page 6-4 as described in this comment.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
…			
5.3	AIR QUALITY		
…			
Exhaust emissions	APM AIR-2: Exhaust Emissions. Per BAAQMD CEQA guidelines, PG&E will implement the following exhaust emissions control measures. Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have	Brief crews regarding idling limitations	During construction

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, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions.	Idling of construction vehicle and equipment limited to 5 consecutive minutes to the greatest extent possible~~,~~ ~~and~~	During construction
• All construction equipment will be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.	A certified mechanic maintains equipment	During construction

C-23 The edit has been made on page 6-20 as described in this comment.

TABLE 6-1 MITIGATION MONITORING PLAN

Impact	APM or MM	Monitoring Requirement	Timing of Action
...			
5-16	TRANSPORTATION AND TRAFFIC		
Construction traffic	MM TRA-1: Traffic Management Implementation. (Supersedes APM TRA-1). PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to the State Route 84 crossing and the transport of oversized loads, and will implement temporary traffic controls as required to prevent excessive congestion or traffic hazards during construction. Construction activities that are along or that cross local roadways will follow local jurisdictional encroachment permit requirements and traffic controls in the form of signs, cones, and flaggers to minimize impacts on traffic, transportation, and emergency access in the project area. When working on state highways, PG&E will follow traffic control guidelines outlined in the *California Manual on Uniform Traffic Control Devices*, 2018 edition. A Caltrans-approved Transportation Management Plan will be prepared to address impacts to vehicular, bicycle, and pedestrian traffic caused by traffic restrictions or detours. The Plan must address the following:	Preparation of a Caltrans-approved Transportation Management Plan	30 days prior to the project construction start date

• Pedestrian and bicycle access through the construction site (between staging areas 2a and 2b and other locations along the alignment) will be maintained at all times and will adhere to the Americans with Disabilities Act (ADA) regulations and comply with Caltrans' Temporary Pedestrian Facilities Handbook.	~~Flagger for vehicles turning left into or out of the SFPUC service road~~ Flagger and warning signage for pedestrians traveling between staging areas 2a and 2b and other locations on Bay Trail where construction and overhead reconductoring activities occur.	During project construction
• Prior to construction PG&E will survey and photograph portions of the Bay Trail that will be used during construction. If project-related construction activities damage portions of the Bay Trail, PG&E will restore those facilities in compliance with current design standards and ADA regulations. • Lane closures will occur during off-peak traffic hours (i.e. 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.) • Advance public notification of lane closures will be provided if transit routes require temporary rerouting. Public notification will include lane closure schedule, location, and duration of public transit reroute.	Document preconstruction conditions of the Bay Trail within the project area. Restore any project-related damage following construction. ~~Restoration of Bay Trail~~	Prior to and ~~F~~following completion of construction.
• Project-related traffic will be required to use northbound University Avenue to enter and depart from the SFPUC service road, unless a flagger is present to direct traffic on University Avenue while the vehicles turn left into or out of the service road driveway.	Flagger for vehicles turning left into or out of the SFPUC service road	During project construction

Comments Set D
San Francisco Public Utilities Commission

From: Zhang, YinLan <YZhang@sfwater.org>
Sent: Monday, October 01, 2018 1:36 PM
To: Energy - Ravenswood <Ravenswood@energy.ca.gov>
Cc: Mendoza, Jonathan S <JSMendoza@sfwater.org>; Wilson, Joanne <jwilson@sfwater.org>
Subject: Ravenswood

Dear Ms. Blanchard:

Thank you for the opportunity to comment on the Draft MND for PG&E's Ravenswood-Cooley Landing 115 kV Reconductoring Project. The SFPUC's comments are as follows:

SFPUC Project Review Process

The proposed project would use SFPUC lands outside of PG&E's easements. All proposed projects and activities on SFPUC lands must be reviewed by the SFPUC to determine whether a proposal is compatible with SFPUC adopted plans and policies and access requirements prior to obtaining written authorization from the SFPUC. For more information about the SFPUC's Project Review process, please visit www.sfwater.org/projectreview.

Specific Comments

Required Permits and Approvals

PG&E would be required to apply for and obtain a Revocable License Agreement for any use of SFPUC lands outside of its easements. Approval of such use, and issuance of a Revocable License Agreement, would be at the SFPUC's sole discretion. Work proposed within PG&E's easements on SFPUC lands would be reviewed for conformity with the terms of the governing easement deed(s). Please list the Revocable License Agreement from the San Francisco Public Utilities Commission in Table 1-1. Required Permits and Approvals. **D-1**

Biological Resources

Pg 5.4-8, Table 5.4-1 For rare plants, table states that none were observed during surveys during the blooming period for species. However, blooming periods span April through October but surveys were conducted in May and July. An additional survey, later in the season, would have been appropriate. Under Congdon's Tarplant, occurrence listed as "possible" and states that none observed during surveys during the blooming period for the species. However, the blooming period is from June through October but surveys were conducted in May and July. Species are known from recent records and surveys done for Bay Trail MND to occur in the area (as indicated on page 5.4-12). The May/July surveys may not be adequate as this species tends to bloom later, especially in the bay area. **D-2**

Bottom of Pg 5.4-20 Please add that any areas with the potential to contain rare plants, such as areas mapped as northern coastal salt marsh north of Tower 5, parts of which are known to be suitable for Congdon's tarplant, plus a buffer zone will be designated as off-limits to worker/vehicle access using orange construction exclusion fencing. If any of the upland area near Tower 5 is needed for worker access, a survey is required in August or September to determine the appropriate exclusion zone (which would include all areas where Congdon's tarplant has been found, plus a buffer). **D-3**

Pg 5.4-2, Paragraph 2 The logic behind this statement that implies minimal impact is faulty: "The project is **unlikely to impact a large number of individuals in part due to the rarity of both species**. There would **also** be a minimal loss of habitat from the project and construction activities would be temporary". If both species are so rare than an impact to even a small number of individuals might be considered significant. Please consider rewording. **D-4**

Comments Set D, cont.
San Francisco Public Utilities Commission

Pg 5.4-21 and -32 The 3rd bullet in APM BIO-2 and the 3rd paragraph on page 5.4-32 state that "a biologist would assess the work areas in suitable habitat, determine if vegetation protection mats are appropriate or if vegetation removal by hand is needed, and if an onsite biological monitor is needed". This could be clarified, as stated on pg. 5.4-36, that in pickle weed and salt grass all vegetation removal "would be done by hand". The former statement could be misread and interpreted as, if there is vegetation removal in salt grass or pickle weed, a biologist would determine if it needs to be by hand removal or could be done some other way. **D-5**

Pg 5.4-31, Paragraph 3 Please clarify how the last bullet in APM BIO-2 (compensating for permanent and temporary impacts to California Ridgeway's rail) would reduce the potential permanent and temporary impacts for northern harrier, SF common yellowthroat, Alameda song sparrow, Bryant's savannah, and white tailed Kite. Also, since you are using APM BIO-2 to mitigate for these species, please add the names of these species (or perhaps refer to them as Other Special-Status Birds) in the title for APM BIO-2. **D-6**

In the MMP Biological resources described as being covered by a particular mitigation measures are not all listed with the measure. See especially bird species, where the MMP table has a measures specific to Ridgways Rail and the salt marsh harvest mouse combined, and specific to snowy plover, forcing one to remember and infer that in some way the measures also going mitigate potential impacts to a long list of other bird species not mentioned in this plan/table but described in the body (Northern Harrier, San Francisco Common Yellowthroat, Alameda Song Sparrow, Bryant's Savannah Sparrow, and White-tailed Kite). Why is it organized this way rather than have measures explicitly for all potentially impacted birds, and measures for the salt march harvest mouse? These tables are often used as standalone documents for reference and as currently written a reader would not know from the MMP table that these other species are covered. **D-7**

Thank you for your time and attention. If you have any questions or need further information, please contact me.

Best,

YinLan Zhang
Planner
SFPUC Natural Resources and Land Management
415-487-5201

Responses to Comment Set D
San Francisco Public Utilities Commission

D-1 Where the project would use SFPUC land outside of existing easements, a revocable license agreement would be required. Even though the agreement is a discretionary action, as this relates to land rights, the project is not exempt from obtaining this agreement under GO 131-D. Therefore, the edits have been made in **Table 1-1** as described in this comment. Also, the same edits have been made in **Table 4-5**.

TABLE 1-1 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Regulatory Authority	Agency	Jurisdiction/Purpose	Project Requirements
...			
STATE			
McAteer-Petris Act and the San Francisco Bay Plan, Permit No. M87-74(A)	Bay Area Conservation and Development Commission (BCDC)	Maintenance activities for PG&E facilities within the 100-foot shoreline band	Comply with permit terms relating to ten-year maintenance activities.
Permit to Construct, PTC (GO-131-D)	California Public Utilities Commission (CPUC)	Construction, modification, or alteration of power line facilities.	A PTC is required under the CPUC's General Order No. 131-D, Section III.B.
Section 401 Water Quality Certification	San Francisco Bay Regional Water Quality Control Board (RWQCB)	Consistency with state water quality standards.	Water Quality Certification would be required prior to obtaining a Section 404 Permit from the USACE, if required.
Standard Encroachment Permit (discretionary or ministerial)	California Department of Transportation (Caltrans)	For use of the California state highways for other than normal transportation purposes, including construction activities completed within the right-of-way.	A standard encroachment permit may be obtained for reconductoring work across State Route 84.
National Pollution Discharge Elimination System Storm Water Permit (ministerial)	State Water Resources Control Board (SWRCB)	Construction activities disturbing 1 acre or more of soil must submit a Notice of Intent to comply with the terms of the general permit.	The project would develop and implement a State Water Pollution Prevention Plan (SWPPP).
LOCAL			
Encroachment Permit (ministerial)	City of East Palo Alto	For construction activities completed within city road rights-of-way.	Guard structures would be used when reconductoring across roads.
Revocable License Agreement (discretionary or ministerial)	San Francisco Public Utilities Commission (SFPUC)	Use of SFPUC lands outside of easements	The project would need to secure a revocable license agreement for use of SFPUC lands outside of easements.

TABLE 4-5 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Agency	Jurisdiction	Requirements
...		
LOCAL/REGIONAL AGENCIES		

TABLE 4-5 PERMITS AND APPROVALS THAT MAY BE REQUIRED FOR THE PROJECT

Agency	Jurisdiction	Requirements
...		
City of East Palo Alto	For construction activities completed within city road rights-of-way.	Encroachment Permit (ministerial) -Guard structures would be used when reconductoring across roads.
San Francisco Public Utilities Commission (SFPUC)	Use of SFPUC lands outside of easements	Revocable License Agreement - The project would need to secure a revocable license agreement for use of SFPUC lands outside of easements.

D-2 & D-3 Congdon's Tarplant

The SFPUC notes concerns regarding the lack of additional late season surveys for rare plants, in particular Congdon's tarplant. The CPUC notes these concerns however, a late season survey and mitigation measure for Congdon's tarplant is not warranted because no activities would occur in or around the known occurrences of Congdon's tarplant [see updated **Figure 5.4-1** Biological Resources and page 5.4-23 Direct Impacts (Final IS/MND)]. Subsequent surveys by the Project Proponent's biologist in May and July 2017 resulted in no Congdon's tarplant occurrences. However, some specimens were found by a different biologist during a 2017 survey for the MROSD's Ravenswood Bay Trail Connection project (see **Figure 5.4-1** in the Final IS/MND). Access to Towers 3, 4, 5, 6, and 7 would be by helicopter (**Table 4.2** Summary of Proposed Temporary Work Areas-Final IS/MND). Page 4-20, Section 4.12.3 under Helicopter Use (Final IS/MND), states a helicopter would deliver materials and crews to towers and avoid ground access in marsh habitat. There would be no ground disturbance in these areas. **Figure 5.4-1** Biological Resources (Final IS/MND) shows temporary disturbance areas (white hash marks) where work would occur. In addition, **APM BIO-5** page 5.4-23 (Final IS/MND) requires a biologist to flag access routes in tidal marsh or coastal wetland 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 Game or U.S. Fish and Wildlife Service?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Special-Status Plants

Direct Impacts

Reconnaissance field surveys and focused rare plant surveys were conducted during the blooming season (May and July 2017) for the five special-status plant species that have a potential to occur in the Study Area. This included one federally-listed plant species, California seablite, and four additional species listed as CNPS RPR 1B.1 or 1B.2, including Point Reyes bird's beak, saline clover, Congdon's tarplant, and coastal marsh milk-vetch. Surveyors conducted focused rare plant surveys in suitable habitat and found no special-status plant species within the Survey Area. Congdon's tarplant is known

to occur in the Survey Area from surveys conducted in 2017 in support of the Bay Trail Connection at Ravenswood OSP project (CEC 2018k). This species was not detected during the focused rare plant surveys conducted for the project, however it is an annual plant and may not be detected every blooming season. All known locations in the Survey Area are located outside any areas that would be impacted by project activities. Based on the results of focused rare plant surveys, special-status plant species are considered absent from project work areas. In addition, **APM BIO-5** requires a biologist to flag access routes in tidal marsh or coastal wetland habitat. Therefore, the project would have no direct impacts on special-status plants.

D-4 The SFPUC notes concerns regarding the impact analysis for salt marsh harvest mouse and salt marsh wandering shrew and expressed concerns that the logic is faulty regarding the statement on page 5.4-32 of the Draft IS/MND that "the project is unlikely to impact a large number of individuals in part due to the rarity of both species." The intent of the original statement is that due to the rarity of both species and the existing level of human disturbance on Bay Road near Tower 8, it is very unlikely these species would occur in the northern coastal salt marsh habitats located in the work area at Tower 8. All other areas of pickleweed-dominated habitats would be accessed by helicopters and direct impacts to habitat would not occur. However, loss of individuals could still occur during work to access Tower 8 near suitable habitat for the species without impact minimization measures. PG&E would implement **APM BIO-2** as part of the proposed project and minimization measure **MM BIO-1** to avoid impacts to salt marsh harvest mouse and salt marsh wandering shrew and therefore impacts would be less than significant. The analysis for direct impacts on salt marsh harvest mouse and salt marsh wandering shrew on page 5.4-32 has been clarified as follows:

Mammals

Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew

Direct Impacts

Salt marsh harvest mouse and salt marsh wandering shrew are both expected to occur in low numbers in the pickleweed-dominated habitats in the ~~work areas~~ project area, in particular near the work areas and access routes designated for Tower 8. Salt marsh harvest mouse is a federally listed species that is covered under PG&E's Bay Area HCP, however the salt marsh wandering shrew is not federally listed and is not a covered species in the HCP. Direct impacts to both species include injury or mortality of individuals as a result of crushing by equipment, vehicle traffic, and worker foot traffic, crushing of nests by construction equipment, and loss of habitat. Due to the rarity of both the salt marsh harvest mouse and salt marsh wandering shrew these impacts would be significant.

~~The project is unlikely to impact a large number of individuals in part due to the rarity of both species.~~ There would ~~also~~ be a minimal loss of habitat (0.15 acre) from the project at Tower 8 and construction activities would be temporary. The project is therefore unlikely to alter the overall distribution of salt marsh harvest mouse or salt marsh wandering shrew. However, loss of individuals could still occur during work in suitable habitat for the species without impact minimization and mitigation measures (specifically **APM BIO-2** and **MM BIO-1**).

D-5 The SFPUC notes concerns regarding the clarity of the language in the 3rd bullet of **APM BIO-2** on page 5.4-21 and the 3rd (4th) paragraph on page 5.4-32 as compared to language on page 5.4-36 regarding vegetation removal in salt grass or pickleweed. The language in the 3rd bullet of **APM**

BIO-2 and page 5.4-32, which includes that a "biologist would assess the work areas in suitable habitat, determine if vegetation protection mats are appropriate or if vegetation removal by hand is needed, and if an onsite biological monitor is needed", is verbatim from Hot Zone-8 which is a conservation measure described in Table 5-1 on page 5-13 in Section 5.5.1, Avoidance and Minimization of Impacts of the PG&E Bay Area Operations and Maintenance Habitat Conservation Plan. This is a requirement for work in a Hot Zone for salt marsh harvest mouse. The language on page 5.4-36 is referencing requirements from **APM BIO-5.** Comment is noted, however no changes to the 3rd bullet in **APM BIO-2** will be made. Clarification regarding the requirements of **APM BIO-2** have been provided on page 5.4-32 as follows:

Mammals

Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew

Direct Impacts

…

As part of the project, PG&E would implement **APM BIO-2** to avoid direct impacts on salt marsh harvest mouse whereby a biologist would assess the work areas in suitable habitat, determine if vegetation protection mats are appropriate or if vegetation removal by hand is needed, and if an onsite biological monitor is needed, as required by Hot Zone-8, a conservation measure described in Table 5-1 on page 5-13 in Section 5.5.1, Avoidance and Minimization of Impacts of the PG&E Bay Area HCP. These measures, although included to minimize impacts to salt marsh harvest mouse would also minimize impacts to salt marsh wandering shrew, if present. In addition, prior to placement of mats or removal of vegetation, the vegetation will be disturbed (i.e., flushed) to force movement of salt marsh harvest mouse into adjacent tidal marsh areas and the field crew would then immediately place a mat or manually remove vegetation with non-motorized tools (to the bare ground), flushing individuals from areas of suitable habitat prior to placement of vegetation mats or vegetation clearing. With implementation of **MM BIO-1,** direct impacts to salt marsh harvest mouse and salt marsh wandering shrew would be less than significant.

Clarification regarding the requirements of **APM BIO-5** have been provided on page 5.4-36, and is as follows:

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, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

…

Indirect Impacts

…

As part of the project, PG&E would implement **APM BIO-5**, which would minimize impacts to northern coastal salt marsh in the project area by limiting disturbance or removal of vegetation to the minimum necessary to complete construction activities and implementing precautions to avoid other damage to vegetation by people or equipment. **APM BIO-5** also requires a biologist to flag access routes for crews

~~where ground disturbance~~ when work in tidal marsh or coastal wetland habitat would occur to minimize impacts. In addition, PG&E crews would use protective matting to minimize ground disturbance when working within pickleweed or cordgrass. ~~If vegetation must be removed it would be done by hand,~~ If deemed necessary by the biologist, small areas of healthy vegetation would be cleared by hand prior to placement of protective mats, thereby minimizing work disturbance of soils and vegetative covers in northern salt marsh habitat. **APM BIO-5** also includes requirements to avoid impacts on water quality through the use of erosion, sediment, and material stockpile BMPs to be installed between work areas and adjacent wetlands or waterways as required by **APM HYD-1**. These measures would reduce indirect impacts but not to less than significant.

D-6 The SFPUC suggests that Paragraph 3, page 5.4-31 of the IS/MND be clarified to describe how the last bullet in **APM BIO-2** (compensating for permanent and temporary impacts to California Ridgeway's rail) would reduce the potential permanent and temporary impacts for northern harrier, San Francisco common yellowthroat, Alameda song sparrow, Bryant's savannah, and white tailed kite. Since project construction is scheduled to occur outside of the nesting season for these species (i.e., between September and February) there would therefore be no impacts on active nests of these species. The following clarification is provided on page 5.4-31 paragraph 2:

Northern Harrier, San Francisco Common Yellowthroat, Alameda Song Sparrow, Bryant's Savannah Sparrow, and White-tailed Kite

Direct Impacts

…

As part of the project, PG&E would ~~implement **APM BIO-2** and **APM BIO-3** and would conduct all~~ schedule construction ~~activities during the period~~ between September and ~~to~~ February, which is outside of the nesting season for these species ~~and most other native or migratory birds~~ (typically March 1 to August 15). This time restriction is consistent with that included in section II.K. [*Work Windows*] of PG&E's Marsh Authorization from the SFBCDC (No. M87-74(A)). The Marsh Authorization further stipulates that work outside this time window may not occur "unless a habitat evaluation and, if necessary, a springtime field survey has been performed confirming the absence of the species within an appropriate buffer area for each specific endangered species." White tailed kite is not expected to nest in or near the project area. Therefore, there would be no impacts to special-status or other native or migratory nesting birds.

D-7 The SFPUC notes concerns that the MMP does not list all the other special-status bird species (northern harrier, San Francisco common yellowthroat, Alameda song sparrow, Bryant's savannah, and white tailed kite) potentially being covered by measures specific to Ridgeway's rail and salt marsh harvest mouse combined and specific to snowy plover. The CPUC has reviewed this section and, as described on page 3.4-49 of the PEA, since project construction is scheduled to occur outside of the nesting season for these species (i.e., between September and February) there would therefore be no impacts on active nests of these species, as described above under the response for D-6. PG&E's Marsh Authorization from the SFBCDC (No. M87-74(A) stipulates that work outside this time window may not occur "unless a habitat evaluation and, if necessary, a springtime field survey has been performed confirming the absence of the species within an

appropriate buffer area for each specific endangered species." The references to **APM BIO-2** and **APM BIO-3** have been removed from page 5.4-31 paragraph 2.

Northern Harrier, San Francisco Common Yellowthroat, Alameda Song Sparrow, Bryant's Savannah Sparrow, and White-tailed Kite

Direct Impacts

…

As part of the project, PG&E would ~~implement **APM BIO-2** and **APM BIO-3** and would conduct all~~ schedule construction ~~activities during the period~~ between September and ~~to~~ February, which is outside of the nesting season for these species ~~and most other native or migratory birds~~ (typically March 1 to August 15). This time restriction is consistent with that included in section II.K. [*Work Windows*] of PG&E's Marsh Authorization from the SFBCDC (No. M87-74(A)). The Marsh Authorization further stipulates that work outside this time window may not occur "unless a habitat evaluation and, if necessary, a springtime field survey has been performed confirming the absence of the species within an appropriate buffer area for each specific endangered species." White tailed kite is not expected to nest in or near the project area. Therefore, there would be no impacts to special-status or other native or migratory nesting birds.

Comments Set E
City of East Palo Alto

From: Guido Persicone <gpersicone@cityofepa.org>
Sent: Monday, October 01, 2018 12:10 PM
To: Monasmith, Mike@Energy <Mike.Monasmith@energy.ca.gov>; billie.blanchard@cpuc.ca.gov; Energy - Ravenswood <Ravenswood@energy.ca.gov>
Subject: PGE Ravenswood Cooley Landing-115 Rv Reconductoring Project-CEQA Comments

Dear Mike/Billie:

Below are the City of East Palo Alto CEQA documents:

1-Prior to the issuance of encroachment, transportation or building permits the applicant will be required to submit a visual photo simulation to demonstrate the project will not have a aesthetic impact to the City of East Palo Alto. The goal of this comment is to provide the community a clear understanding of the visual impacts of this project. **E-1**

2- Prior to the issuance of encroachment, transportation or building permits the applicant will be required to give the City Council a special presentation regarding the project. **E-2**

Sincerely

Guido F. Persicone, AICP
Planning Manager, City of East Palo Alto
1960 Tate Street, East Palo Alto, CA 94303
650-853-3148 (phone); gpersicone@cityofepa.org
http://www.cityofepa.org/planning
"If" by Rudyard Kipling

Responses to Comment Set E
City of East Palo Alto

E-1 The Draft Initial Study/MND was mailed to several staff members of the City of Palo Alto and the East Palo Alto Library. Additionally, notices of availability of the environmental document were mailed to the property owners within 300 feet of the project. The Draft Initial Study/MND contained a complete visual impact analysis in **Section 5.1, Aesthetics**. Visual simulations with the project in place were presented in this section and analyzed for visual impacts. No additional visual impact analysis or visual simulations are necessary. However, if and when PG&E applies to the City of East Palo Alto for issuance of an encroachment, transportation or building permit, the City has discretion to request additional information from PG&E at that time.

E-2 If and when PG&E applies to the City for issuance of an encroachment, transportation or building permit, the City has discretion to request additional information from PG&E at that time, including a special presentation to the City Council.

Appendix A

List of Preparers and Agency Contacts

Appendix A. List of Preparers and Agency Contacts

A consultant team comprised of staff from the California Energy Commission prepared this document under the direction of the California Public Utilities Commission. The preparers and reviewers of this document are provided below.

Lead Agency

California Public Utilities Commission, Energy Division

Personnel	Role	
Billie Blanchard	Project Manager	
Jack Mulligan	Attorney, Legal Division	
Stephanie Green	Tribal Liaison	Stephanie.Green@cpuc.ca.gov
Lynne Mosely	Webmaster	juralynne.mosley@cpuc.ca.gov

Project Management and Document Production

Personnel	Role
Mike Monasmith	Project Manager, Project Description and Objectives, Mitigated Negative Declaration, Environmental Determination, Introduction to Initial Study, Report Preparation, Mitigation Monitoring and Reporting Plan
Abdel-Karim Abulaban, P.E., Ph.D.	Hydrology and Water Quality, Utilities and Service Systems
Gerry Bemis, P.E.	Technical Senior, Air Quality, Greenhouse Gases
Jessica Bonitz	Cultural Resources, Tribal Outreach
Ed Brady, P.E.	Noise
Alicia Campos	Quality Assurance and Quality Control
Ann Chu, Ph.D.	Public Health, Project Description
Mike Conway, PG, CHG	Hydrology and Water Quality
Ann Crisp	Biological Resources
Travis David	Graphics / GIS
Chris Davis	Siting Office Manager, Editing, Quality Assurance and Quality Control
Lisa DeCarlo	Staff Counsel
Christopher Dennis, PG, CHG	Noise
Jonathan Fong	Technical Senior, Transportation and Traffic, Aesthetics
Brett Fooks, P.E.	Hazards and Hazardous Materials
Thong Fui	Graphics / GIS
Thomas Gates, Ph.D.	Technical Senior, Cultural Resources, Tribal Liaison
Ashley Gutierrez	Transportation and Traffic
Mark Hesters	Technical Senior, Transmission Engineering
Jon Hilliard, A.I.C.P.	Technical Senior, Biological Resources
John Hope	Aesthetics
Steven Kerr	Technical Senior, Agriculture and Forestry Resources, Land Use and Planning, Public Services, Population and Housing, Recreation
Eric Knight	Environmental Office Manager, Editing, Quality Assurance and Quality Control
Andrea Koch	Transportation and Traffic

Shahab Koshmashrab	Technical Senior, Noise
Matthew Layton, P.E.	Engineering Office Manager, Editing, Quality Assurance and Quality Control
Ellen LeFevre	Agriculture and Forest Resources, Land Use and Planning, Project Description
Geoff Lesh, P.E.	Technical Senior, Hazards and Hazardous Materials
Paul Marshall, PG, CHG, CEG	Technical Senior, Hydrology and Water Quality, Geology and Soils, Mineral Resources, Utilities and Service Systems, Paleontology
Garry Maurath, PG, Ph.D. ~~E.~~	Geology and Soils, Mineral Resources, Paleontology
Melissa Mourkas	Cultural Resources
Laiping Ng	Transmission, Project Description
Obed Odoemelam, Ph.D.	Utilities and Service Systems
Wenjun Quan	Air Quality, Greenhouse Gases
Gabriel Roarke	Cultural Resources
Raquel Rodriguez	Document Production and Formatting
Alicia Campos	Document Production and Formatting
Andrea Stroud	Biological Resources
Tia Taylor	Biological Resources
Gina Tosi	Personnel
Lisa Worrall	Assistant Project Manager, Document Preparation, Mandatory Findings of Significance, Population and Housing, Mitigation Management Plan, Public Services, Quality Assurance and Quality Control, Recreation

Persons and Agencies Contacted

The agencies and individuals that were consulted during the preparation of this document are identified below.

Association of Bay Area Governments/Metropolitan Transportation Commission	
Aksel K. Olsen	Senior Analyst/Planner
Laura Thompson	Assistant Planning Director, Bicycle-Pedestrian-Environment Program
Bay Air Quality Management District	
Jack Broadbent	APCO
California Air Resources Board	
Richard Corey	Executive Officer
California Department of Fish and Wildlife, Bay Delta Region	
Serge Glushkoff	Senior Environmental Scientist
California Department of Transportation	
Jake Friedman	Transportation Planner, District 4
California State Lands Commission	
Jennifer Lucchesi	Executive Officer
City of East Palo Alto	
David Carson	Sergeant, East Palo Alto Police Department
Kamal Fallaha	Public Works Director, Public Works Department
City of Menlo Park	

William A. Dixon	Commander, Menlo Park Police Department
Harold Schapelhouman	Fire Chief, Menlo Park Fire Protection District
Michael Luetgens	Airport Operations Specialist, Public Works Dept., Airport Division
Jim Wadleigh	Airport Operations Manager, Public Works Dept., Airport Division
FAA	
Karen McDonald	Specialist
Midpeninsula Regional Open Space District	
Gretchen Lausten	Planner III
Native American Heritage Commission	
James Ramos	Chairperson
NOAA Fisheries, West Coast Region	
Gary Stern	San Francisco Bay Branch Supervisor
San Francisco Regional Water Quality Control Board	
Bruce Wolfe	Executive Officer
US Fish & Wildlife Service, Sacramento Office	
Lindsey Troutman	Fish and Wildlife Biologist

Appendix B

Air Quality and GHG Emissions Calculations

Appendix B
Air Quality and Greenhouse Gas Emissions Calculations

The applicant used the CalEEMod (version 2016.3.1) to estimate the construction emissions for the project. Helicopter exhaust emissions were manually calculated using the emission factors obtained from the 2011 Gulfwide Emission Inventory Study prepared for the U.S. Department of the Interior. The emissions estimates are based on information that the applicant provided regarding the duration and frequency of equipment use, area of ground-disturbing activities, and the proposed construction schedule. On May 11, 2018, PG&E increased the construction intensity of a few project elements, specifically foundation work and conductor installation (PGE 2018e). The following tables and CalEEMod files include the updated information.

Average Daily Emissions Calculations **Construction Emissions by Phase (tons/phase)**	ROG	NOx	CO	SOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Staging Area – Receiving, Distribution	0.005	0.051	0.052	0.000	0.001	0.002	0.003	0.000	0.002	0.003
Work Area Establishment and Removal	0.005	0.048	0.042	0.000	0.000	0.002	0.002	0.000	0.002	0.002
Foundation Work	0.009	0.100	0.091	0.000	0.001	0.004	0.005	0.000	0.004	0.004
Tower Modifications	0.079	0.036	0.104	0.005	0.000	0.000	0.000	0.000	0.000	0.000
Guard Structures	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Conductor Installation	0.240	0.226	0.382	0.016	0.001	0.005	0.006	0.000	0.005	0.005
Right-of-Way Cleanup	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Worker Trips	0.006	0.005	0.049	0.000	0.018	0.000	0.018	0.005	0.000	0.005
Total Annual Emissions (tons)	0.344	0.471	0.723	0.022	0.021	0.014	0.034	0.006	0.013	0.018
Average Daily Emissions (lbs/day)	5.6	7.7	11.9	0.4	0.3	0.2	0.6	0.1	0.2	0.3

Note: The exhaust emissions from the helicopters are incorporated in the Tower Modifications and Conductor Installation phases. Also, as mentioned below, the CPUC believes that the emissions from the vehicle trips during the Tower Modification phase were conservatively accounted for in the CalEEMod emission estimates for the Guard Structures phase.

Maximum Daily Emissions (lbs/day) Calculations

	ROG	**NOx**	**CO**	**SOx**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**
Maximum Daily Emissions from CalEEMod	4.16	42.69	34.32	0.08	0.32	1.85	2.17	0.09	1.73	1.82
Maximum Daily Helicopter Emissions	17.46	8.10	23.17	1.20	-	0.02	0.02	-	0.02	0.02
Total Maximum Daily Emissions	21.6	50.8	57.5	1.3	0.3	1.9	2.2	0.1	1.8	1.8

Source: PGE2018b, PGE2018e, and the CPUC analysis

Greenhouse Gas Emissions Calculations (metric tons [MT])

GHG Emissions by Phase	CO_2	CH_4	N_2O	CO_2e
Staging Area – Receiving, Distribution	9.082	0.001	-	9.1
Work Area Establishment and Removal	8.750	0.003	-	8.8
Foundation Work	20.407	0.005	-	20.5
Guard Structures	0.911	0.000	-	0.9
Conductor Installation	22.168	0.007	-	22.3
Right-of-Way Cleanup	0.206	0.000	-	0.2
Worker Trips	15.137	0.000	-	15.1
Helicopter Operations	27.348	0.002	0.002	28.0
Total GHG Emissions	104.008	0.017	0.002	105.0
Amortized Construction Emissions (30-year period [$MTCO_2e/yr$])	-	-	-	3.5

Note: The applicant did not provide emission estimates for the 6-mile worker trip per day during the Tower Modification phase. However, the emissions from the two worker trips (6 miles each) per day during the Guard Structures phase were overstated in CalEEMod using a default worker trip length of 10.8 miles. The Tower Modification phase would only last 17 days, while the Guard Structures phase would last 43 days. Therefore, the CPUC believes that the emissions from the vehicle trips during the Tower Modification phase were conservatively accounted for in the CalEEMod emission estimates for the Guard Structures phase.

Source: PGE2018b, PGE2018e, and the CPUC analysis

Ravenswood Cooley - Staging Area

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tower areas

Construction Phase - Staging Area - Receiving

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant provided equipment

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	122.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	8.00	0.70
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripLength	20.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripLength	7.30	5.00
tblTripsAndVMT	VendorTripNumber	7.00	1.00
tblTripsAndVMT	WorkerTripLength	10.80	5.00
tblTripsAndVMT	WorkerTripNumber	19.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	5.24E-03	0.0514	0.0518	1.00E-04	7.70E-04	2.40E-03	3.1700e-003	2.10E-04	2.38E-03	2.5900e-003	0.0000	9.0818	9.0818	8.2000e-004	0.0000	9.1023
Maximum	**5.2400e-003**	**0.0514**	**0.0518**	**1.0000e-004**	**7.7000e-004**	**2.4000e-003**	**3.1700e-003**	**2.1000e-004**	**2.3800e-003**	**2.5900e-003**	**0.0000**	**9.0818**	**9.0818**	**8.2000e-004**	**0.0000**	**9.1023**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	5.2400e-003	0.0514	0.0518	1.0000e-004	7.7000e-004	2.4000e-003	3.1700e-003	2.1000e-004	2.3800e-003	2.5900e-003	0.0000	9.0818	9.0818	8.2000e-004	0.0000	9.1023
Maximum	**5.2400e-003**	**0.0514**	**0.0518**	**1.0000e-004**	**7.7000e-004**	**2.4000e-003**	**3.1700e-003**	**2.1000e-004**	**2.3800e-003**	**2.5900e-003**	**0.0000**	**9.0818**	**9.0818**	**8.2000e-004**	**0.0000**	**9.1023**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2020**	**9-30-2020**	0.0139	0.0139
		Highest	0.0139	0.0139

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2020	12/31/2020	7	122	Staging Area Receiving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Generator Sets	2	0.70	84	0.74
Building Construction	Rough Terrain Forklifts	1	0.50	100	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	3	2.00	1.00	20.00	5.00	5.00	6.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7700e-003	0.0437	0.0483	8.0000e-005		2.3700e-003	2.3700e-003		2.3500e-003	2.3500e-003	0.0000	7.1877	7.1877	7.1000e-004	0.0000	7.2055
Total	**4.7700e-003**	**0.0437**	**0.0483**	**8.0000e-005**		**2.3700e-003**	**2.3700e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**7.1877**	**7.1877**	**7.1000e-004**	**0.0000**	**7.2055**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.5400e-003	2.7000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2972	0.2972	2.0000e-005	0.0000	0.2978
Vendor	1.9000e-004	5.9900e-003	1.5100e-003	1.0000e-005	2.7000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.1926	1.1926	7.0000e-005	0.0000	1.1944
Worker	2.5000e-004	1.6000e-004	1.7100e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4043	0.4043	1.0000e-005	0.0000	0.4046
Total	**4.8000e-004**	**7.6900e-003**	**3.4900e-003**	**1.0000e-005**	**7.7000e-004**	**2.0000e-005**	**8.0000e-004**	**2.1000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**1.8941**	**1.8941**	**1.0000e-004**	**0.0000**	**1.8968**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	4.7700e-003	0.0437	0.0483	8.0000e-005		2.3700e-003	2.3700e-003		2.3500e-003	2.3500e-003	0.0000	7.1877	7.1877	7.1000e-004	0.0000	7.2055
Total	**4.7700e-003**	**0.0437**	**0.0483**	**8.0000e-005**		**2.3700e-003**	**2.3700e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**7.1877**	**7.1877**	**7.1000e-004**	**0.0000**	**7.2055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.5400e-003	2.7000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2972	0.2972	2.0000e-005	0.0000	0.2978
Vendor	1.9000e-004	5.9900e-003	1.5100e-003	1.0000e-005	2.7000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.1926	1.1926	7.0000e-005	0.0000	1.1944
Worker	2.5000e-004	1.6000e-004	1.7100e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4043	0.4043	1.0000e-005	0.0000	0.4046
Total	**4.8000e-004**	**7.6900e-003**	**3.4900e-003**	**1.0000e-005**	**7.7000e-004**	**2.0000e-005**	**8.0000e-004**	**2.1000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**1.8941**	**1.8941**	**1.0000e-004**	**0.0000**	**1.8968**

Ravenswood Cooley - Work Area Establishment

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Work Area Establishment

Off-road Equipment - Applicant provided equipment

Off-road Equipment - applicant info

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	37.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	LoadFactor	0.37	0.44
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	0.10
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	5.00
tblTripsAndVMT	WorkerTripNumber	19.00	1.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	4.63E-03	0.0483	0.0419	1.0000e-004	7.00E-05	1.87E-03	1.9300e-003	2.00E-05	1.72E-03	1.7400e-003	0.0000	8.7502	8.7502	2.8100e-003	0.0000	8.8205
Maximum	**4.6300e-003**	**0.0483**	**0.0419**	**1.0000e-004**	**7.0000e-005**	**1.8700e-003**	**1.9300e-003**	**2.0000e-005**	**1.7200e-003**	**1.7400e-003**	**0.0000**	**8.7502**	**8.7502**	**2.8100e-003**	**0.0000**	**8.8205**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	4.6300e-003	0.0483	0.0419	1.0000e-004	7.0000e-005	1.8700e-003	1.9300e-003	2.0000e-005	1.7200e-003	1.7400e-003	0.0000	8.7502	8.7502	2.8100e-003	0.0000	8.8205
Maximum	**4.6300e-003**	**0.0483**	**0.0419**	**1.0000e-004**	**7.0000e-005**	**1.8700e-003**	**1.9300e-003**	**2.0000e-005**	**1.7200e-003**	**1.7400e-003**	**0.0000**	**8.7502**	**8.7502**	**2.8100e-003**	**0.0000**	**8.8205**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2020**	**9-30-2020**	0.0429	0.0429
		Highest	0.0429	0.0429

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2020	10/7/2020	7	37	Work Area Establishment

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Off-Highway Trucks	1	2.11	402	0.38
Building Construction	Rough Terrain Forklifts	1	4.22	100	0.40
Building Construction	Tractors/Loaders/Backhoes	1	0.10	97	0.44

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	3	1.00	0.00	0.00	5.00	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.6000e-003	0.0483	0.0416	1.0000e-004		1.8700e-003	1.8700e-003		1.7200e-003	1.7200e-003	0.0000	8.6889	8.6889	2.8100e-003	0.0000	8.7592
Total	**4.6000e-003**	**0.0483**	**0.0416**	**1.0000e-004**		**1.8700e-003**	**1.8700e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**8.6889**	**8.6889**	**2.8100e-003**	**0.0000**	**8.7592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	2.0000e-005	2.6000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0613	0.0613	0.0000	0.0000	0.0614
Total	**4.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0613**	**0.0613**	**0.0000**	**0.0000**	**0.0614**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.6000e-003	0.0483	0.0416	1.0000e-004		1.8700e-003	1.8700e-003		1.7200e-003	1.7200e-003	0.0000	8.6889	8.6889	2.8100e-003	0.0000	8.7592
Total	**4.6000e-003**	**0.0483**	**0.0416**	**1.0000e-004**		**1.8700e-003**	**1.8700e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**8.6889**	**8.6889**	**2.8100e-003**	**0.0000**	**8.7592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	2.0000e-005	2.6000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0613	0.0613	0.0000	0.0000	0.0614
Total	**4.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0613**	**0.0613**	**0.0000**	**0.0000**	**0.0614**

Ravenswood Cooley - Foundation Work

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Foundation Work

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant info

Trips and VMT - Applicant provided info

Ravenswood Cooley - Foundation Work - Bay Area AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	8.00	3.30
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	30.00
tblTripsAndVMT	WorkerTripNumber	19.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	9.4100e-003	0.1004	0.0909	2.3000e-004	7.4000e-004	4.1200e-003	4.8600e-003	2.0000e-004	3.9500e-003	4.1500e-003	0.0000	20.4072	20.4072	4.8400e-003	0.0000	20.5282
Maximum	**9.4100e-003**	**0.1004**	**0.0909**	**2.3000e-004**	**7.4000e-004**	**4.1200e-003**	**4.8600e-003**	**2.0000e-004**	**3.9500e-003**	**4.1500e-003**	**0.0000**	**20.4072**	**20.4072**	**4.8400e-003**	**0.0000**	**20.5282**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	9.4100e-003	0.1004	0.0909	2.3000e-004	7.4000e-004	4.1200e-003	4.8600e-003	2.0000e-004	3.9500e-003	4.1500e-003	0.0000	20.4071	20.4071	4.8400e-003	0.0000	20.5282
Maximum	**9.4100e-003**	**0.1004**	**0.0909**	**2.3000e-004**	**7.4000e-004**	**4.1200e-003**	**4.8600e-003**	**2.0000e-004**	**3.9500e-003**	**4.1500e-003**	**0.0000**	**20.4071**	**20.4071**	**4.8400e-003**	**0.0000**	**20.5282**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	9-30-2020	0.1029	0.1029
		Highest	0.1029	0.1029

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.5650	3.5650	1.3000e-004	5.0000e-005	3.5817
Mobile	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**9.7100e-003**	**8.5400e-003**	**0.0185**	**8.0000e-005**	**5.7200e-003**	**1.5000e-004**	**5.8700e-003**	**1.5400e-003**	**1.4000e-004**	**1.6800e-003**	**0.3251**	**9.9094**	**10.2345**	**0.0228**	**2.3000e-004**	**10.8711**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.5650	3.5650	1.3000e-004	5.0000e-005	3.5817
Mobile	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**9.7100e-003**	**8.5400e-003**	**0.0185**	**8.0000e-005**	**5.7200e-003**	**1.5000e-004**	**5.8700e-003**	**1.5400e-003**	**1.4000e-004**	**1.6800e-003**	**0.3251**	**9.9094**	**10.2345**	**0.0228**	**2.3000e-004**	**10.8711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2020	10/2/2020	7	32	Foundation Work

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Bore/Drill Rigs	1	6.50	221	0.50
Building Construction	Generator Sets	1	3.30	84	0.74
Building Construction	Pumps	1	1.80	84	0.74
Building Construction	Rough Terrain Forklifts	1	4.70	100	0.40
Building Construction	Skid Steer Loaders	1	0.80	65	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	5	2.00	0.00	8.00	30.00	7.30	10.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1500e-003	0.0994	0.0889	2.3000e-004		4.1100e-003	4.1100e-003		3.9500e-003	3.9500e-003	0.0000	19.6309	19.6309	4.8200e-003	0.0000	19.7513
Total	**9.1500e-003**	**0.0994**	**0.0889**	**2.3000e-004**		**4.1100e-003**	**4.1100e-003**		**3.9500e-003**	**3.9500e-003**	**0.0000**	**19.6309**	**19.6309**	**4.8200e-003**	**0.0000**	**19.7513**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1725	0.1725	1.0000e-005	0.0000	0.1728
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.9000e-004	1.9100e-003	1.0000e-005	7.0000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6038	0.6038	1.0000e-005	0.0000	0.6041
Total	**2.6000e-004**	**9.6000e-004**	**2.0500e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.5000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.7763**	**0.7763**	**2.0000e-005**	**0.0000**	**0.7769**

3.2 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1500e-003	0.0994	0.0889	2.3000e-004		4.1100e-003	4.1100e-003		3.9500e-003	3.9500e-003	0.0000	19.6308	19.6308	4.8200e-003	0.0000	19.7512
Total	**9.1500e-003**	**0.0994**	**0.0889**	**2.3000e-004**		**4.1100e-003**	**4.1100e-003**		**3.9500e-003**	**3.9500e-003**	**0.0000**	**19.6308**	**19.6308**	**4.8200e-003**	**0.0000**	**19.7512**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1725	0.1725	1.0000e-005	0.0000	0.1728
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.9000e-004	1.9100e-003	1.0000e-005	7.0000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6038	0.6038	1.0000e-005	0.0000	0.6041
Total	**2.6000e-004**	**9.6000e-004**	**2.0500e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.5000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.7763**	**0.7763**	**2.0000e-005**	**0.0000**	**0.7769**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Unmitigated	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	15,369	15,369

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Other Non-Asphalt Surfaces	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.2400	2.2400	1.0000e-004	2.0000e-005	2.2488
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.2400	2.2400	1.0000e-004	2.0000e-005	2.2488
NaturalGas Mitigated	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
NaturalGas Unmitigated	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	24830	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.3000e-004**	**1.2200e-003**	**1.0200e-003**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.3250**	**1.3250**	**3.0000e-005**	**2.0000e-005**	**1.3329**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	24830	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.3000e-004**	**1.2200e-003**	**1.0200e-003**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.3250**	**1.3250**	**3.0000e-005**	**2.0000e-005**	**1.3329**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	7700	2.2400	1.0000e-004	2.0000e-005	2.2488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.2400**	**1.0000e-004**	**2.0000e-005**	**2.2488**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	7700	2.2400	1.0000e-004	2.0000e-005	2.2488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.2400**	**1.0000e-004**	**2.0000e-005**	**2.2488**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1500e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1500e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.6236
Unmitigated	0.2517	0.0149	0.0000	0.6236

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2517**	**0.0149**	**0.0000**	**0.6236**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2517**	**0.0149**	**0.0000**	**0.6236**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Ravenswood Cooley - Guard Structures

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Guard structures

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant info

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	43.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblConstructionPhase	PhaseEndDate	10/2/2020	12/7/2020
tblConstructionPhase	PhaseStartDate	9/1/2020	10/26/2020
tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	HorsePower	231.00	97.00
tblOffRoadEquipment	LoadFactor	0.29	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripNumber	19.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.10E-04	2.4400e-003	1.5300e-003	1.00E-05	4.7000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.9108	0.9108	4.0000e-005	0.0000	0.9118
Maximum	**2.10E-04**	**2.44E-03**	**1.53E-03**	**1.0000e-005**	**4.70E-04**	**1.00E-05**	**4.80E-04**	**1.30E-04**	**1.00E-05**	**1.4000e-004**	**0.0000**	**0.9108**	**0.9108**	**4.0000e-005**	**0.0000**	**0.9118**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.1000e-004	2.4400e-003	1.5300e-003	1.0000e-005	4.7000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.9108	0.9108	4.0000e-005	0.0000	0.9118
Maximum	**2.1000e-004**	**2.4400e-003**	**1.5300e-003**	**1.0000e-005**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**1.3000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.9108**	**0.9108**	**4.0000e-005**	**0.0000**	**0.9118**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/26/2020	12/7/2020	7	43	Guard Structures

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	5	2.00	0.00	16.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.3400e-003	4.7000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.6131	0.6131	3.0000e-005	0.0000	0.6139
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.0600e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2977	0.2977	1.0000e-005	0.0000	0.2979
Total	**2.1000e-004**	**2.4400e-003**	**1.5300e-003**	**1.0000e-005**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**1.3000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.9108**	**0.9108**	**4.0000e-005**	**0.0000**	**0.9118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.3400e-003	4.7000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.6131	0.6131	3.0000e-005	0.0000	0.6139
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.0600e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2977	0.2977	1.0000e-005	0.0000	0.2979
Total	**2.1000e-004**	**2.4400e-003**	**1.5300e-003**	**1.0000e-005**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**1.3000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.9108**	**0.9108**	**4.0000e-005**	**0.0000**	**0.9118**

Ravenswood Cooley - Conductor Installation

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Guard Structures

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant info

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	43.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	HorsePower	402.00	140.00
tblOffRoadEquipment	HorsePower	172.00	150.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripLength	20.00	3.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	30.00
tblTripsAndVMT	WorkerTripNumber	19.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2020	0.0129	0.1210	0.0813	2.5000e-004	1.4200e-003	4.6100e-003	6.0200e-003	3.8000e-004	4.2400e-003	4.6100e-003	0.0000	22.1675	22.1675	6.8000e-003	0.0000	22.3375
Maximum	**0.0129**	**0.1210**	**0.0813**	**2.5000e-004**	**1.4200e-003**	**4.6100e-003**	**6.0200e-003**	**3.8000e-004**	**4.2400e-003**	**4.6100e-003**	**0.0000**	**22.1675**	**22.1675**	**6.8000e-003**	**0.0000**	**22.3375**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0129	0.1181	0.0813	2.5000e-004	1.4200e-003	4.6100e-003	6.0200e-003	3.8000e-004	4.2400e-003	4.6100e-003	0.0000	22.1675	22.1675	6.8000e-003	0.0000	22.3375
Maximum	**0.0129**	**0.1181**	**0.0813**	**2.5000e-004**	**1.4200e-003**	**4.6100e-003**	**6.0200e-003**	**3.8000e-004**	**4.2400e-003**	**4.6100e-003**	**0.0000**	**22.1675**	**22.1675**	**6.8000e-003**	**0.0000**	**22.3375**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**2.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	9-30-2020	0.0934	0.0913
		Highest	0.0934	0.0913

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.5650	3.5650	1.3000e-004	5.0000e-005	3.5817
Mobile	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**9.7100e-003**	**8.5400e-003**	**0.0185**	**8.0000e-005**	**5.7200e-003**	**1.5000e-004**	**5.8700e-003**	**1.5400e-003**	**1.4000e-004**	**1.6800e-003**	**0.3251**	**9.9094**	**10.2345**	**0.0228**	**2.3000e-004**	**10.8711**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.5650	3.5650	1.3000e-004	5.0000e-005	3.5817
Mobile	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**9.7100e-003**	**8.5400e-003**	**0.0185**	**8.0000e-005**	**5.7200e-003**	**1.5000e-004**	**5.8700e-003**	**1.5400e-003**	**1.4000e-004**	**1.6800e-003**	**0.3251**	**9.9094**	**10.2345**	**0.0228**	**2.3000e-004**	**10.8711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2020	10/13/2020	7	43	Conductor Installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	1	1.20	63	0.31
Building Construction	Off-Highway Trucks	1	0.20	140	0.38
Building Construction	Off-Highway Trucks	1	0.60	402	0.38
Building Construction	Off-Highway Trucks	2	2.70	402	0.38
Building Construction	Other Construction Equipment	2	0.50	150	0.42
Building Construction	Cranes	1	0.20	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	3.00	0.00	1.00	30.00	7.30	3.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1205	0.0775	2.4000e-004		4.6000e-003	4.6000e-003		4.2300e-003	4.2300e-003	0.0000	20.9406	20.9406	6.7700e-003	0.0000	21.1100
Total	**0.0124**	**0.1205**	**0.0775**	**2.4000e-004**		**4.6000e-003**	**4.6000e-003**		**4.2300e-003**	**4.2300e-003**	**0.0000**	**20.9406**	**20.9406**	**6.7700e-003**	**0.0000**	**21.1100**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	6.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	9.8300e-003	9.8300e-003	0.0000	0.0000	9.8600e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.9000e-004	3.8400e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.2170	1.2170	3.0000e-005	0.0000	1.2177
Total	**4.9000e-004**	**4.5000e-004**	**3.8500e-003**	**1.0000e-005**	**1.4100e-003**	**1.0000e-005**	**1.4200e-003**	**3.8000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.2269**	**1.2269**	**3.0000e-005**	**0.0000**	**1.2276**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1176	0.0775	2.4000e-004		4.6000e-003	4.6000e-003		4.2300e-003	4.2300e-003	0.0000	20.9406	20.9406	6.7700e-003	0.0000	21.1099

Total	**0.0124**	**0.1176**	**0.0775**	**2.4000e-004**		**4.6000e-003**	**4.6000e-003**		**4.2300e-003**	**4.2300e-003**	**0.0000**	**20.9406**	**20.9406**	**6.7700e-003**	**0.0000**	**21.1099**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	6.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	9.8300e-003	9.8300e-003	0.0000	0.0000	9.8600e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.9000e-004	3.8400e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.2170	1.2170	3.0000e-005	0.0000	1.2177
Total	**4.9000e-004**	**4.5000e-004**	**3.8500e-003**	**1.0000e-005**	**1.4100e-003**	**1.0000e-005**	**1.4200e-003**	**3.8000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.2269**	**1.2269**	**3.0000e-005**	**0.0000**	**1.2276**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855
Unmitigated	1.4300e-003	7.3200e-003	0.0175	7.0000e-005	5.7200e-003	6.0000e-005	5.7800e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.9803	5.9803	2.1000e-004	0.0000	5.9855

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	15,369	15,369

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Other Non-Asphalt Surfaces	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.2400	2.2400	1.0000e-004	2.0000e-005	2.2488
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.2400	2.2400	1.0000e-004	2.0000e-005	2.2488
NaturalGas Mitigated	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
NaturalGas Unmitigated	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	24830	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.3000e-004**	**1.2200e-003**	**1.0200e-003**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.3250**	**1.3250**	**3.0000e-005**	**2.0000e-005**	**1.3329**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	24830	1.3000e-004	1.2200e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3250	1.3250	3.0000e-005	2.0000e-005	1.3329
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.3000e-004**	**1.2200e-003**	**1.0200e-003**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.3250**	**1.3250**	**3.0000e-005**	**2.0000e-005**	**1.3329**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	7700	2.2400	1.0000e-004	2.0000e-005	2.2488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.2400**	**1.0000e-004**	**2.0000e-005**	**2.2488**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	7700	2.2400	1.0000e-004	2.0000e-005	2.2488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.2400**	**1.0000e-004**	**2.0000e-005**	**2.2488**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	8.1500e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1500e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1500e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.6236
Unmitigated	0.2517	0.0149	0.0000	0.6236

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2517**	**0.0149**	**0.0000**	**0.6236**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2517**	**0.0149**	**0.0000**	**0.6236**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Ravenswood Cooley - ROW Cleanup

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - ROW Cleanup

Off-road Equipment - Applicant provided equipment

Trips and VMT - Applicant provided info

Off-road Equipment - Applicant provided equipment

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	17.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblConstructionPhase	PhaseEndDate	10/2/2020	12/31/2020
tblConstructionPhase	PhaseStartDate	9/1/2020	12/15/2020
tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Skid Steer Loaders
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	6.00
tblTripsAndVMT	WorkerTripNumber	19.00	1.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.00E-04	1.02E-03	1.46E-03	0.0000	4.00E-05	4.00E-05	8.0000e-005	1.00E-05	4.00E-05	5.0000e-005	0.0000	0.2064	0.2064	6.0000e-005	0.0000	0.2078
Maximum	**1.0000e-004**	**1.0200e-003**	**1.4600e-003**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**8.0000e-005**	**1.0000e-005**	**4.0000e-005**	**5.0000e-005**	**0.0000**	**0.2064**	**0.2064**	**6.0000e-005**	**0.0000**	**0.2078**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.0000e-004	1.0000e-005	1.4600e-003	0.0000	4.0000e-005	4.0000e-005	8.0000e-005	1.0000e-005	4.0000e-005	5.0000e-005	0.0000	0.2064	0.2064	6.0000e-005	0.0000	0.2078
Maximum	**1.0000e-004**	**1.0000e-005**	**1.4600e-003**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**8.0000e-005**	**1.0000e-005**	**4.0000e-005**	**5.0000e-005**	**0.0000**	**0.2064**	**0.2064**	**6.0000e-005**	**0.0000**	**0.2078**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**99.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	12/15/2020	12/31/2020	7	17	ROW Cleanup

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Skid Steer Loaders	1	0.90	65	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	1.00	0.00	0.00	6.00	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-005	1.0100e-003	1.3200e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1729	0.1729	6.0000e-005	0.0000	0.1743
Total	**8.0000e-005**	**1.0100e-003**	**1.3200e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.1729**	**0.1729**	**6.0000e-005**	**0.0000**	**0.1743**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0335	0.0335	0.0000	0.0000	0.0335
Total	**2.0000e-005**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0335**	**0.0335**	**0.0000**	**0.0000**	**0.0335**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-005		1.3200e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1729	0.1729	6.0000e-005	0.0000	0.1743
Total	**8.0000e-005**		**1.3200e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.1729**	**0.1729**	**6.0000e-005**	**0.0000**	**0.1743**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0335	0.0335	0.0000	0.0000	0.0335
Total	**2.0000e-005**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0335**	**0.0335**	**0.0000**	**0.0000**	**0.0335**

Ravenswood Cooley - Worker Trips

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Worker trips

Off-road Equipment - Applicant provided equipment

Off-road Equipment - no offroad equipment for this run

Trips and VMT - A weighted trip length was developed to account for the daily 6 mile trip length for Environmental monitoring and Project Management/Inspection and the longer daily trip length of 25 miles for the 15 worker commute trips.

Table Name	Column Name	Default Value	New Value

tblConstructionPhase	NumDays	200.00	122.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	9/17/2020	12/31/2020
tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	VendorTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	21.83
tblTripsAndVMT	WorkerTripNumber	19.00	18.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	6.3500e-003	4.9000e-003	0.0491	1.7000e-004	0.0175	1.10E-04	0.0176	4.66E-03	1.0000e-004	4.7600e-003	0.0000	15.1365	15.1365	3.5000e-004	0.0000	15.1452
Maximum	**6.35E-03**	**4.90E-03**	**0.0491**	**1.70E-04**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**15.1365**	**15.1365**	**3.5000e-004**	**0.0000**	**15.1452**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	6.3500e-003	4.9000e-003	0.0491	1.7000e-004	0.0175	1.1000e-004	0.0176	4.6600e-003	1.0000e-004	4.7600e-003	0.0000	15.1365	15.1365	3.5000e-004	0.0000	15.1452
Maximum	**6.3500e-003**	**4.9000e-003**	**0.0491**	**1.7000e-004**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**15.1365**	**15.1365**	**3.5000e-004**	**0.0000**	**15.1452**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2020**	**9-30-2020**	0.0026	0.0026
		Highest	0.0026	0.0026

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2020	12/31/2020	7	122	Worker trips

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	6.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	0.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	4	18.00	0.00	0.00	21.83	0.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3500e-003	4.9000e-003	0.0491	1.7000e-004	0.0175	1.1000e-004	0.0176	4.6600e-003	1.0000e-004	4.7600e-003	0.0000	15.1365	15.1365	3.5000e-004	0.0000	15.1452
Total	**6.3500e-003**	**4.9000e-003**	**0.0491**	**1.7000e-004**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**15.1365**	**15.1365**	**3.5000e-004**	**0.0000**	**15.1452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3500e-003	4.9000e-003	0.0491	1.7000e-004	0.0175	1.1000e-004	0.0176	4.6600e-003	1.0000e-004	4.7600e-003	0.0000	15.1365	15.1365	3.5000e-004	0.0000	15.1452
Total	**6.3500e-003**	**4.9000e-003**	**0.0491**	**1.7000e-004**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**15.1365**	**15.1365**	**3.5000e-004**	**0.0000**	**15.1452**

Ravenswood Cooley - Max Daily Emissions

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Foundation Work

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant info

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	7.00	10.00
tblTripsAndVMT	WorkerTripNumber	19.00	30.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1529	42.6595	34.3185	0.0794	0.3196	1.8496	2.1692	0.0864	1.7302	1.8166	0.0000	7,701.4549	7,701.4549	2.0408	0.0000	7,752.4752
Maximum	**4.1529**	**42.6595**	**34.3185**	**0.0794**	**0.3196**	**1.8496**	**2.1692**	**0.0864**	**1.7302**	**1.8166**	**0.0000**	**7,701.4549**	**7,701.4549**	**2.0408**	**0.0000**	**7,752.4752**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1529	39.9813	34.3185	0.0794	0.3196	1.8496	2.1692	0.0864	1.7302	1.8166	0.0000	7,701.4549	7,701.4549	2.0408	0.0000	7,752.4752
Maximum	**4.1529**	**39.9813**	**34.3185**	**0.0794**	**0.3196**	**1.8496**	**2.1692**	**0.0864**	**1.7302**	**1.8166**	**0.0000**	**7,701.4549**	**7,701.4549**	**2.0408**	**0.0000**	**7,752.4752**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**6.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Mobile	0.0118	0.0515	0.1339	5.0000e-004	0.0432	4.2000e-004	0.0437	0.0116	4.0000e-004	0.0120		50.7551	50.7551	1.7000e-003		50.7977
Total	**0.0572**	**0.0582**	**0.1397**	**5.4000e-004**	**0.0432**	**9.3000e-004**	**0.0442**	**0.0116**	**9.1000e-004**	**0.0125**		**58.7588**	**58.7588**	**1.8500e-003**	**1.5000e-004**	**58.8490**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Mobile	0.0118	0.0515	0.1339	5.0000e-004	0.0432	4.2000e-004	0.0437	0.0116	4.0000e-004	0.0120		50.7551	50.7551	1.7000e-003		50.7977
Total	**0.0572**	**0.0582**	**0.1397**	**5.4000e-004**	**0.0432**	**9.3000e-004**	**0.0442**	**0.0116**	**9.1000e-004**	**0.0125**		**58.7588**	**58.7588**	**1.8500e-003**	**1.5000e-004**	**58.8490**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Building Construction	Building Construction	9/1/2020	10/2/2020	7	32	Foundation Work

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	1	2.00	63	0.31
Building Construction	Bore/Drill Rigs	1	8.00	221	0.50
Building Construction	Generator Sets	3	2.00	84	0.74
Building Construction	Off-Highway Trucks	4	4.00	402	0.38
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Rough Terrain Forklifts	3	6.00	100	0.40
Building Construction	Skid Steer Loaders	2	4.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	19	30.00	10.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0082	41.3672	33.2240	0.0740		1.8422	1.8422		1.7231	1.7231		7,136.9269	7,136.9269	2.0192		7,187.4065
Total	**4.0082**	**41.3672**	**33.2240**	**0.0740**		**1.8422**	**1.8422**		**1.7231**	**1.7231**		**7,136.9269**	**7,136.9269**	**2.0192**		**7,187.4065**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5800e-003	0.0895	0.0178	2.5000e-004	5.4600e-003	2.9000e-004	5.7500e-003	1.5000e-003	2.8000e-004	1.7800e-003		26.5870	26.5870	1.3300e-003		26.6202
Vendor	0.0379	1.1396	0.2718	2.7500e-003	0.0677	5.5900e-003	0.0733	0.0195	5.3400e-003	0.0248		291.7081	291.7081	0.0144		292.0672
Worker	0.1043	0.0631	0.8049	2.4700e-003	0.2464	1.6000e-003	0.2480	0.0654	1.4700e-003	0.0668		246.2330	246.2330	5.9300e-003		246.3813
Total	**0.1448**	**1.2923**	**1.0945**	**5.4700e-003**	**0.3196**	**7.4800e-003**	**0.3271**	**0.0864**	**7.0900e-003**	**0.0935**		**564.5280**	**564.5280**	**0.0216**		**565.0687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	4.0082	38.6891	33.2240	0.0740		1.8422	1.8422		1.7231	1.7231	0.0000	7,136.9269	7,136.9269	2.0192		7,187.4065
Total	**4.0082**	**38.6891**	**33.2240**	**0.0740**		**1.8422**	**1.8422**		**1.7231**	**1.7231**	**0.0000**	**7,136.9269**	**7,136.9269**	**2.0192**		**7,187.4065**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5800e-003	0.0895	0.0178	2.5000e-004	5.4600e-003	2.9000e-004	5.7500e-003	1.5000e-003	2.8000e-004	1.7800e-003		26.5870	26.5870	1.3300e-003		26.6202
Vendor	0.0379	1.1396	0.2718	2.7500e-003	0.0677	5.5900e-003	0.0733	0.0195	5.3400e-003	0.0248		291.7081	291.7081	0.0144		292.0672
Worker	0.1043	0.0631	0.8049	2.4700e-003	0.2464	1.6000e-003	0.2480	0.0654	1.4700e-003	0.0668		246.2330	246.2330	5.9300e-003		246.3813
Total	**0.1448**	**1.2923**	**1.0945**	**5.4700e-003**	**0.3196**	**7.4800e-003**	**0.3271**	**0.0864**	**7.0900e-003**	**0.0935**		**564.5280**	**564.5280**	**0.0216**		**565.0687**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0118	0.0515	0.1339	5.0000e-004	0.0432	4.2000e-004	0.0437	0.0116	4.0000e-004	0.0120		50.7551	50.7551	1.7000e-003		50.7977

Unmitigated	0.0118	0.0515	0.1339	5.0000e-004	0.0432	4.2000e-004	0.0437	0.0116	4.0000e-004	0.0120		50.7551	50.7551	1.7000e-003		50.7977

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	15,369	15,369

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Other Non-Asphalt Surfaces	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
NaturalGas Mitigated	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
NaturalGas Unmitigated	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	68.0274	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.3000e-004**	**6.6700e-003**	**5.6000e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**8.0032**	**8.0032**	**1.5000e-004**	**1.5000e-004**	**8.0508**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0680274	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.3000e-004**	**6.6700e-003**	**5.6000e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**8.0032**	**8.0032**	**1.5000e-004**	**1.5000e-004**	**8.0508**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Ravenswood Cooley - Max Daily Emissions

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.10	1,000.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - placeholder

Construction Phase - Foundation Work

Off-road Equipment - Applicant provided equipment

Off-road Equipment - Applicant info

Trips and VMT - Applicant provided info

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblLandUse	LotAcreage	0.02	0.10
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	7.00	10.00
tblTripsAndVMT	WorkerTripNumber	19.00	30.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1610	42.6893	34.3101	0.0792	0.3196	1.8497	2.1693	0.0864	1.7303	1.8167	0.0000	7,674.2142	7,674.2142	2.0417	0.0000	7,725.2558
Maximum	**4.1610**	**42.6893**	**34.3101**	**0.0792**	**0.3196**	**1.8497**	**2.1693**	**0.0864**	**1.7303**	**1.8167**	**0.0000**	**7,674.2142**	**7,674.2142**	**2.0417**	**0.0000**	**7,725.2558**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1610	40.0112	34.3101	0.0792	0.3196	1.8497	2.1693	0.0864	1.7303	1.8167	0.0000	7,674.2142	7,674.2142	2.0417	0.0000	7,725.2558
Maximum	**4.1610**	**40.0112**	**34.3101**	**0.0792**	**0.3196**	**1.8497**	**2.1693**	**0.0864**	**1.7303**	**1.8167**	**0.0000**	**7,674.2142**	**7,674.2142**	**2.0417**	**0.0000**	**7,725.2558**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**6.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Mobile	0.0103	0.0544	0.1323	4.7000e-004	0.0432	4.3000e-004	0.0437	0.0116	4.0000e-004	0.0120		47.5374	47.5374	1.7200e-003		47.5805
Total	**0.0557**	**0.0610**	**0.1381**	**5.1000e-004**	**0.0432**	**9.4000e-004**	**0.0442**	**0.0116**	**9.1000e-004**	**0.0125**		**55.5410**	**55.5410**	**1.8700e-003**	**1.5000e-004**	**55.6317**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Mobile	0.0103	0.0544	0.1323	4.7000e-004	0.0432	4.3000e-004	0.0437	0.0116	4.0000e-004	0.0120		47.5374	47.5374	1.7200e-003		47.5805
Total	**0.0557**	**0.0610**	**0.1381**	**5.1000e-004**	**0.0432**	**9.4000e-004**	**0.0442**	**0.0116**	**9.1000e-004**	**0.0125**		**55.5410**	**55.5410**	**1.8700e-003**	**1.5000e-004**	**55.6317**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Building Construction	Building Construction	9/1/2020	10/2/2020	7	32	Foundation Work

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	1	2.00	63	0.31
Building Construction	Bore/Drill Rigs	1	8.00	221	0.50
Building Construction	Generator Sets	3	2.00	84	0.74
Building Construction	Off-Highway Trucks	4	4.00	402	0.38
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Pumps	1	4.00	84	0.74
Building Construction	Rough Terrain Forklifts	3	6.00	100	0.40
Building Construction	Skid Steer Loaders	2	4.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	19	30.00	10.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0082	41.3672	33.2240	0.0740		1.8422	1.8422		1.7231	1.7231		7,136.9269	7,136.9269	2.0192		7,187.4065
Total	**4.0082**	**41.3672**	**33.2240**	**0.0740**		**1.8422**	**1.8422**		**1.7231**	**1.7231**		**7,136.9269**	**7,136.9269**	**2.0192**		**7,187.4065**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6500e-003	0.0917	0.0192	2.4000e-004	5.4600e-003	3.0000e-004	5.7600e-003	1.5000e-003	2.8000e-004	1.7800e-003		26.1404	26.1404	1.4000e-003		26.1754
Vendor	0.0399	1.1524	0.3110	2.6900e-003	0.0677	5.6800e-003	0.0734	0.0195	5.4300e-003	0.0249		284.3272	284.3272	0.0155		284.7157
Worker	0.1103	0.0780	0.7560	2.2800e-003	0.2464	1.6000e-003	0.2480	0.0654	1.4700e-003	0.0668		226.8196	226.8196	5.5500e-003		226.9583
Total	**0.1528**	**1.3221**	**1.0861**	**5.2100e-003**	**0.3196**	**7.5800e-003**	**0.3272**	**0.0864**	**7.1800e-003**	**0.0935**		**537.2873**	**537.2873**	**0.0225**		**537.8494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	4.0082	38.6891	33.2240	0.0740		1.8422	1.8422		1.7231	1.7231	0.0000	7,136.9269	7,136.9269	2.0192		7,187.4065
Total	**4.0082**	**38.6891**	**33.2240**	**0.0740**		**1.8422**	**1.8422**		**1.7231**	**1.7231**	**0.0000**	**7,136.9269**	**7,136.9269**	**2.0192**		**7,187.4065**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6500e-003	0.0917	0.0192	2.4000e-004	5.4600e-003	3.0000e-004	5.7600e-003	1.5000e-003	2.8000e-004	1.7800e-003		26.1404	26.1404	1.4000e-003		26.1754
Vendor	0.0399	1.1524	0.3110	2.6900e-003	0.0677	5.6800e-003	0.0734	0.0195	5.4300e-003	0.0249		284.3272	284.3272	0.0155		284.7157
Worker	0.1103	0.0780	0.7560	2.2800e-003	0.2464	1.6000e-003	0.2480	0.0654	1.4700e-003	0.0668		226.8196	226.8196	5.5500e-003		226.9583
Total	**0.1528**	**1.3221**	**1.0861**	**5.2100e-003**	**0.3196**	**7.5800e-003**	**0.3272**	**0.0864**	**7.1800e-003**	**0.0935**		**537.2873**	**537.2873**	**0.0225**		**537.8494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0103	0.0544	0.1323	4.7000e-004	0.0432	4.3000e-004	0.0437	0.0116	4.0000e-004	0.0120		47.5374	47.5374	1.7200e-003		47.5805

Unmitigated	0.0103	0.0544	0.1323	4.7000e-004	0.0432	4.3000e-004	0.0437	0.0116	4.0000e-004	0.0120		47.5374	47.5374	1.7200e-003		47.5805

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	15,369	15,369

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Other Non-Asphalt Surfaces	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
NaturalGas Mitigated	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
NaturalGas Unmitigated	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	68.0274	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.3000e-004**	**6.6700e-003**	**5.6000e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**8.0032**	**8.0032**	**1.5000e-004**	**1.5000e-004**	**8.0508**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0680274	7.3000e-004	6.6700e-003	5.6000e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0032	8.0032	1.5000e-004	1.5000e-004	8.0508
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.3000e-004**	**6.6700e-003**	**5.6000e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**8.0032**	**8.0032**	**1.5000e-004**	**1.5000e-004**	**8.0508**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Helicopter Emissions Calculations

Annual Emissions

Activity	Estimated Quantity of Equipment	Equipment	Estimated Hours per Day of Operation	Start Date	End Date	Estimated Duration of Use (days)	Estimated Number of Hours	Fuel Use per Hour	Total Gallons Used	NOx (lbs/gallon)	NOx (tons)	ROG (lbs/gallon)	ROG (tons)	CO (lbs/gallon)	CO (tons)	SO2 (lbs/gallon)	SO2 (tons)	PM10 (lbs/gallon)	PM10 (tons)	PM2.5 (lbs/gallon)	PM2.5 (tons)	CO2 (lbs/gallon)	CO2 (tons)	CH4 (lbs/gallon)	CH4 (tons)	N2O (lbs/gallon)	N2O (tons)	Total MTCO2e
Tower Modifications (Top Cage Extensions, OPGW Peaks, Body Mods)	1	Helicopter (medium) Bell Twin Ranger	3	10/15/2020	10/31/2020	10	30	54	1620	0.045	0.03645	0.097	0.07857	0.1287	0.104247	0.006693	0.0054213	0.0001369	0.000111	0.0001336	0.00010822	9.57	7.7517	0.000595	0.0005	0.000683	0.0006	7.197109945
Conductor Installation (includes old conductor removal)	2	Helicopter (small) MD-500	3	11/1/2020	12/15/2020	26	156	30	4680	0.045	0.1053	0.097	0.22698	0.1287	0.301158	0.006693	0.0156616	0.0001369	0.00032	0.0001336	0.00031262	9.57	22.3938	0.000595	0.0014	0.000683	0.0016	20.79165095
		TOTAL TONS									0.14175		0.30555		0.405405		0.021083		0.000431		0.00042084		30.1455		0.0019		0.0022	27.9887609

Daily Emissions [a]

Activity	Estimated Quantity of Equipment	Estimated Hours per Day of Operation	Fuel Use per Hour	Gallons Used Per Day	NOx (lbs/gallon)	NOx (lbs/day)	ROG (lbs/gallon)	ROG (lbs/day)	CO (lbs/gallon)	CO (lbs/day)	SO2 (lbs/gallon)	SO2 (lbs/day)	PM10 (lbs/gallon)	PM10 (lbs/day)	PM2.5 (lbs/gallon)	PM2.5 (lbs/day)
Tower Modifications (Top Cage Extensions, OPGW Peaks, Body Mods)	1	3	54	162	0.045	7.29	0.097	15.714	0.1287	20.8494	0.006693	1.084266	0.0001369	0.0221778	0.0001336	0.0216432
Conductor Installation (includes old conductor removal)	2	3	30	180	0.045	8.1	0.097	17.46	0.1287	23.166	0.006693	1.20474	0.0001369	0.024642	0.0001336	0.024048

Note:

a. The CPUC calculated the daily emissions based on estimated quantity of equipment, hours per day of operation, and fuel use per hour with the emission rates for each pollutant.
PG&E provided the annual emissions calcualtions.

Appendix C

Californian Native American Tribal Consultation Documentation

Appendix C
California Native American Tribal Consultation Documentation

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NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

December 20, 2017

Jessica Bonitz
California Public Utilities Commission

Email to: Jessica.bonitz@energy.ca.gov

RE: Ravenswood Cooley Landing Lines, San Mateo County

Dear Ms. Bonitz,

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent of the referenced codes is to avoid and or mitigate impacts to tribal cultural resources, as defined, in the California Environmental Quality Act (CEQA).

As of July 1, 2015, Public Resources Code Sections 21080.1, 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding or mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.1(d))

The law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC also believes that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the Area of Potential Effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources that have already been recorded or are adjacent to the APE, such as known archaeological sites;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and

- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The results of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission with the USGS topographical information provided had negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

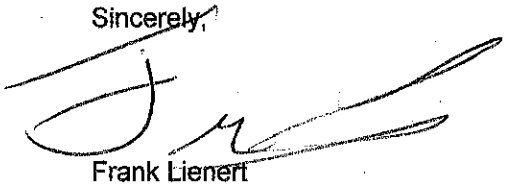
Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive. A negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we are able to assure that our consultation list remains current.

If you have any questions, please contact me at my email address: frank.lienert@nahc.ca.gov.

Sincerely,



Frank Lienert
Associate Government Program Analyst

Native American Heritage Commission
Tribal Consultation List
12/20/2017

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street — Ohlone/Costanoan
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road — Ohlone/Costanoan
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 851-7747 Office

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
P.O. Box 360791 — Ohlone / Costanoan
Milpitas , CA 95036
muwekma@muwekma.org
(408) 314-1898

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3152 — Ohlone/Costanoan
Fremont , CA 94539 — Bay Miwok
chochenyo@AOL.com — Plains Miwok
(510) 882-0527 Cell — Patwin

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Ohlone/Costanoan
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.1, 21080.3.1, and 21080.3.2 for Ravenswood Cooley Landing Lines, San Mateo County

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 22, 2018

Honorable Irene Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

Re: Invitation to Consult for Pacific Gas and Electric Company's Permit to Construct (PTC) for the Ravenswood–Cooley Landing Reconductoring Project in San Mateo County, California - Presently undergoing CEQA review by the California Public Utilities Commission (CPUC)

Dear Chairperson Zwierlein,

Please find attached for your information and consideration a fact sheet and map for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood). Pacific Gas and Electric Company (PG&E) is proposing to replace the existing wires (a process called reconductoring) on 1.6 miles of double circuit 115 kV power line (line) supported by nine steel lattice towers (towers) between Ravenswood Substation and Cooley Landing Substation.

The existing line begins at Ravenswood Substation located on the north side of State Route (SR) 84 approximately 0.5 mile west of the Dumbarton Bridge in the city of Menlo Park. The line crosses SR 84 and continues south through the Don Edwards Wildlife Refuge and Ravenswood Preserve to Bay Road, then continues east along the south side of Bay Road in the city of Palo Alto Baylands Preserve and terminates at Cooley Landing Substation in the city of East Palo Alto. For more details, please see the attached fact sheet and project map. Additional project information can also be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

PG&E filed an application and Proponent's Environmental Assessment (PEA) for a Permit to Construct (PTC) on December 15, 2017. Construction is planned to begin in the fall of 2020, or as soon as possible after permitting is completed, and is planned to be completed in the winter of 2021, or as soon as possible.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

The CPUC contacted the Native American Heritage Commission (NAHC) in December 2017 for a list of California Native American tribes traditionally and culturally affiliated with the Ravenswood project area. The NAHC provided your name as a representative of your tribe potentially interested in the activities associated with the project. Previously, letters and phone calls about the Ravenswood project were made to this list by PG&E between April and June of 2017.

Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. If you would benefit from a meeting with our environmental team, please let me know.

Thank you in advance for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit

Attachments

cc: Stephanie Green, Tribal Liaison

Mike Monasmith, CEC, project manager

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 22, 2018

Honorable Tony Cerda, Chairperson
Costanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

Re: Invitation to Consult for Pacific Gas and Electric Company's Permit to Construct (PTC) for the Ravenswood–Cooley Landing Reconductoring Project in San Mateo County, California - Presently undergoing CEQA review by the California Public Utilities Commission (CPUC)

Dear Chairperson Cerda,

Please find attached for your information and consideration a fact sheet and map for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood). Pacific Gas and Electric Company (PG&E) is proposing to replace the existing wires (a process called reconductoring) on 1.6 miles of double circuit 115 kV power line (line) supported by nine steel lattice towers (towers) between Ravenswood Substation and Cooley Landing Substation.

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Thank you in advance for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit

Attachments

cc: Stephanie Green, Tribal Liaison

Mike Monasmith, CEC, project manager

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 22, 2018

Honorable Ann-Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: Invitation to Consult for Pacific Gas and Electric Company's Permit to Construct (PTC) for the Ravenswood–Cooley Landing Reconductoring Project in San Mateo County, California - Presently undergoing CEQA review by the California Public Utilities Commission (CPUC)

Dear Chairperson Sayers,

Please find attached for your information and consideration a fact sheet and map for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood). Pacific Gas and Electric Company (PG&E) is proposing to replace the existing wires (a process called reconductoring) on 1.6 miles of double circuit 115 kV power line (line) supported by nine steel lattice towers (towers) between Ravenswood Substation and Cooley Landing Substation.

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Thank you in advance for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit

Attachments

cc: Stephanie Green, Tribal Liaison

Mike Monasmith, CEC, project manager

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 22, 2018

Honorable Rosemary Cambra, Chairperson
Muwekma Ohlone Tribe of the San Francisco Bay Area
P.O. Box 360791
Milpitas, CA 95036

Re: Invitation to Consult for Pacific Gas and Electric Company's Permit to Construct (PTC) for the Ravenswood–Cooley Landing Reconductoring Project in San Mateo County, California - Presently undergoing CEQA review by the California Public Utilities Commission (CPUC)

Dear Chairperson Cambra,

Please find attached for your information and consideration a fact sheet and map for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood). Pacific Gas and Electric Company (PG&E) is proposing to replace the existing wires (a process called reconductoring) on 1.6 miles of double circuit 115 kV power line (line) supported by nine steel lattice towers (towers) between Ravenswood Substation and Cooley Landing Substation.

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Thank you in advance for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit

Attachments

cc: Stephanie Green, Tribal Liaison

Mike Monasmith, CEC, project manager

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 22, 2018

Andrew Galvan
The Ohlone Indian Tribe
P.O. Box 3152
Fremont, CA 94539

Re: Invitation to Consult for Pacific Gas and Electric Company's Permit to Construct (PTC) for the Ravenswood–Cooley Landing Reconductoring Project in San Mateo County, California - Presently undergoing CEQA review by the California Public Utilities Commission (CPUC)

Dear Mr. Galvan,

Please find attached for your information and consideration a fact sheet and map for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood). Pacific Gas and Electric Company (PG&E) is proposing to replace the existing wires (a process called reconductoring) on 1.6 miles of double circuit 115 kV power line (line) supported by nine steel lattice towers (towers) between Ravenswood Substation and Cooley Landing Substation.

The existing line begins at Ravenswood Substation located on the north side of State Route (SR) 84 approximately 0.5 mile west of the Dumbarton Bridge in the city of Menlo Park. The line crosses SR 84 and continues south through the Don Edwards Wildlife Refuge and Ravenswood Preserve to Bay Road, then continues east along the south side of Bay Road in the city of Palo Alto Baylands Preserve and terminates at Cooley Landing Substation in the city of East Palo Alto. For more details, please see the attached fact sheet and project map. Additional project information can also be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

PG&E filed an application and Proponent's Environmental Assessment (PEA) for a Permit to Construct (PTC) on December 15, 2017. Construction is planned to begin in the fall of 2020, or as soon as possible after permitting is completed, and is planned to be completed in the winter of 2021, or as soon as possible.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

The CPUC contacted the Native American Heritage Commission (NAHC) in December 2017 for a list of California Native American tribes traditionally and culturally affiliated with the Ravenswood project area. The NAHC provided your name as a representative of your tribe potentially interested in the activities associated with the project. Previously, letters and phone calls about the Ravenswood project were made to this list by PG&E between April and June of 2017.

Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. If you would benefit from a meeting with our environmental team, please let me know.

Thank you in advance for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit

Attachments

cc: Stephanie Green, Tribal Liaison

Mike Monasmith, CEC, project manager

From:	Monasmith, Mike@Energy
To:	Andrew Galvan
Cc:	Roark, Gabriel@Energy; "billie.blanchard@cpuc.ca.gov"; Bonitz, Jessica@Energy; Gates, Thomas@Energy
Subject:	RE: California Public Utilities Commission letter re: Ravenswood project
Date:	Saturday, February 24, 2018 6:20:34 PM

Hello Andrew,

Thank you for contacting me. I will confer with our Cultural Resources Unit and get an answer to your question ASAP.

Thanks again for the email,
Mike

From: Andrew Galvan [mailto:chochenyo@aol.com]
Sent: Saturday, February 24, 2018 8:06 AM
To: Monasmith, Mike@Energy <Mike.Monasmith@energy.ca.gov>
Subject: Re: California Public Utilities Commission letter re: Ravenswood project

Hi there,

can you tell me if a Phase I Literature Search and/or a Foot Survey have been under taken for this project? And if so, may I have a copy of that report?

Thank you,

Andrew Galvan
An Ohlone Man

-----Original Message-----
From: Monasmith, Mike@Energy <Mike.Monasmith@energy.ca.gov>
To: chochenyo <chochenyo@aol.com>
Sent: Thu, Feb 22, 2018 10:14 am
Subject: California Public Utilities Commission letter re: Ravenswood project

When you get the opportunity, please see the attached letter from the California Public Utilities Commission (CPUC), a FACT sheet on a transmission project currently under review by the CPUC, and a map of the project site called Ravenswood.

From:	Gates, Thomas@Energy
To:	Bonitz, Jessica@Energy
Subject:	FW: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project
Date:	Friday, March 09, 2018 2:31:58 PM
Attachments:	CONF- RCL- PEA- Cultural Resources Study.pdf Zwierlein_Letter_3-8-18_BCBver.pdf

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From: Monasmith, Mike@Energy
Sent: Friday, March 09, 2018 1:35 PM
To: amahmutsuntribal@gmail.com
Cc: billie.blanchard@cpuc.ca.gov; Stephanie.green@cpuc.ca.gov; Maier, Lonn (Lonn.Maier@cpuc.ca.gov)
Subject: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project

Chairperson Zwierlein,

Please find attached a letter from the California Public Utilities Commission, and a confidential report, "***Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California.***"
As is indicated in the letter, a paper copy of the report will also be mailed to you at your address in Woodside.

Sincerely,

Mike Monasmith
CEC Project Manager

From:	Gates, Thomas@Energy
To:	Bonitz, Jessica@Energy
Subject:	FW: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project
Date:	Friday, March 09, 2018 2:30:33 PM
Attachments:	CONF- RCL- PEA- Cultural Resources Study.pdf Cerda_Letter_3-8-18_BCBver.pdf

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From: Monasmith, Mike@Energy
Sent: Friday, March 09, 2018 1:45 PM
To: rumsen@aol.com
Cc: billie.blanchard@cpuc.ca.gov; Stephanie.green@cpuc.ca.gov; Maier, Lonn (Lonn.Maier@cpuc.ca.gov)
Subject: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project

Chairperson Cerda,

Please find attached a letter from the California Public Utilities Commission, and a confidential report, "***Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California.***"
As is indicated in the letter, a paper copy of the report will also be mailed to you at your address in Pomona.

Sincerely,

Mike Monasmith
CEC Project Manager

From:	Gates, Thomas@Energy
To:	Bonitz, Jessica@Energy
Subject:	FW: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project
Date:	Friday, March 09, 2018 2:33:16 PM
Attachments:	CONF- RCL- PEA- Cultural Resources Study.pdf Sayers_Letter_3-8-18_BCBver.pdf

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From: Monasmith, Mike@Energy
Sent: Friday, March 09, 2018 1:25 PM
To: ams@indiancanyon.org
Cc: billie.blanchard@cpuc.ca.gov; Stephanie.green@cpuc.ca.gov; Maier, Lonn (Lonn.Maier@cpuc.ca.gov)
Subject: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project

Chairperson Sayers,

Please find attached a letter from the California Public Utilities Commission, and a confidential report, "***Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California.***"
As is indicated in the letter, a paper copy of the report will also be mailed to you at your address in Hollister.

Sincerely,

Mike Monasmith
CEC Project Manager

From:	Gates, Thomas@Energy
To:	Bonitz, Jessica@Energy
Subject:	FW: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project
Date:	Friday, March 09, 2018 2:36:06 PM
Attachments:	Cambra_Letter_3-8-18_BCBver.pdf CONF- RCL- PEA- Cultural Resources Study.pdf

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From: Monasmith, Mike@Energy
Sent: Friday, March 09, 2018 12:49 PM
To: muwekma@muwekma.org
Cc: billie.blanchard@cpuc.ca.gov; Stephanie.green@cpuc.ca.gov; Maier, Lonn (Lonn.Maier@cpuc.ca.gov)
Subject: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project

Chairperson Cambra,

Please find attached a letter from the California Public Utilities Commission, and a confidential report, "***Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California.***"
As is indicated in the letter, a paper copy of the report will also be mailed to you at your address in Milpitas.

Sincerely,

Mike Monasmith
CEC Project Manager

From:	Gates, Thomas@Energy
To:	Bonitz, Jessica@Energy
Subject:	FW: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project
Date:	Friday, March 09, 2018 2:34:36 PM
Attachments:	CONF- RCL- PEA- Cultural Resources Study.pdf Galvan_Letter_3-8-18_BCBver.pdf

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From: Monasmith, Mike@Energy
Sent: Friday, March 09, 2018 1:04 PM
To: chochenyo@aol.com
Cc: billie.blanchard@cpuc.ca.gov; Stephanie.green@cpuc.ca.gov; Maier, Lonn (Lonn.Maier@cpuc.ca.gov)
Subject: Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project

Mr. Galvan,

Please find attached a letter from the California Public Utilities Commission, and a confidential report, "***Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California.***"

As is indicated in the letter, a paper copy of the report will also be mailed to you at your address in Fremont.

Sincerely,

Mike Monasmith
CEC Project Manager

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 9, 2018

Honorable Irenne Zwierlein
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

Re: **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California – submitted to the California Public Utilities Commission (CPUC) as CEQA lead agency for the Project**

Dear Chairperson Zwierlein,

Please find attached for your information and consideration a copy of the **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California**. This information was originally requested by Mr. Andrew Galvan of the Ohlone Indian Tribe and as a courtesy is also being sent to the other tribes on the Native American Heritage Commission (NAHC) list submitted to the CPUC**.** It was completed by Far Western Anthropological Research Group, Inc. in December, 2017. The document was submitted under confidential cover as part of Pacific Gas & Electric Company's (PG&E) Proponents Environmental Assessment (PEA) for a Permit to Construct (PTC). The PEA for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood or "project") was filed with the California Public Utilities Commission (CPUC) on December 15, 2017. Additional project information can be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

As was indicated in my February 22, 2018 correspondence to you, the NAHC provided your name as a representative of the Amah Mutsun Tribal Band of Mission San Juan Bautista potentially interested in the activities associated with the project. Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. The attached study may assist you in the development of any comments. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. Also, you may contact Stephanie Green, the CPUC Tribal Liaison, in regards to this matter or other tribal issues at 415-703-5245 or Stephanie.Green@cpuc.ca.gov.

In addition to the attached pdf copy of the Cultural Resources Study, a paper copy of the confidential report will be mailed to you as well.

Thank you for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit
Attachment

cc: Stephanie Green, CPUC Tribal Liaison
Mike Monasmith, CEC, project manager
Lonn Maier, Supervisor CPUC CEQA Unit

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 9, 2018

Honorable Tony Cerda
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

Re: **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California – submitted to the California Public Utilities Commission (CPUC) as CEQA lead agency for the Project**

Dear Chairperson Cerda,

Please find attached for your information and consideration a copy of the **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California**. This information was originally requested by Mr. Andrew Galvan of the Ohlone Indian Tribe and as a courtesy is also being sent to the other tribes on the Native American Heritage Commission (NAHC) list submitted to the CPUC**.** It was completed by Far Western Anthropological Research Group, Inc. in December, 2017. The document was submitted under confidential cover as part of Pacific Gas & Electric Company's (PG&E) Proponents Environmental Assessment (PEA) for a Permit to Construct (PTC). The PEA for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood or "project") was filed with the California Public Utilities Commission (CPUC) on December 15, 2017. Additional project information can be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

As was indicated in my February 22, 2018 correspondence to you, the NAHC provided your name as a representative of the Coastanoan Rumsen Carmel Tribe potentially interested in the activities associated with the project. Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. The attached study may assist you in the development of any comments. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. Also, you may contact Stephanie Green, the CPUC Tribal Liaison, in regards to this matter or other tribal issues at 415-703-5245 or Stephanie.Green@cpuc.ca.gov.

In addition to the attached pdf copy of the Cultural Resources Study, a paper copy of the confidential report will be mailed to you as well.

Thank you for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit
Attachment

cc: Stephanie Green, CPUC Tribal Liaison
Mike Monasmith, CEC, project manager
Lonn Maier, Supervisor CPUC CEQA Unit

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 9, 2018

Honorable Anne Marie Sayers
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

Re: **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California – submitted to the California Public Utilities Commission (CPUC) as CEQA lead agency for the Project**

Dear Chairperson Sayers,

Please find attached for your information and consideration a copy of the **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California**. This information was originally requested by Mr. Andrew Galvan of the Ohlone Indian Tribe and as a courtesy is also being sent to the other tribes on the Native American Heritage Commission (NAHC) list submitted to the CPUC**.** It was completed by Far Western Anthropological Research Group, Inc. in December, 2017. The document was submitted under confidential cover as part of Pacific Gas & Electric Company's (PG&E) Proponents Environmental Assessment (PEA) for a Permit to Construct (PTC). The PEA for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood or "project") was filed with the California Public Utilities Commission (CPUC) on December 15, 2017. Additional project information can be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

As was indicated in my February 22, 2018 correspondence to you, the NAHC provided your name as a representative of the Indian Canyon Mutsun Band of Costanoan potentially interested in the activities associated with the project. Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. The attached study may assist you in the development of any comments. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. Also, you may contact Stephanie Green, the CPUC Tribal Liaison, in regards to this matter or other tribal issues at 415-703-5245 or Stephanie.Green@cpuc.ca.gov.

In addition to the attached pdf copy of the Cultural Resources Study, a paper copy of the confidential report will be mailed to you as well.

Thank you for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit
Attachment

cc: Stephanie Green, CPUC Tribal Liaison
Mike Monasmith, CEC, project manager
Lonn Maier, Supervisor CPUC CEQA Unit

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 9, 2018

Honorable Rosemary Cambra, Chairperson
Muwekma Ohlone Tribe of the San Francisco Bay Area
P.O. Box 360791
Milpitas, CA 95036

Re: **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California – submitted to the California Public Utilities Commission (CPUC) as CEQA lead agency for the Project**

Dear Chairperson Cambra,

Please find attached for your information and consideration a copy of the **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California**. This information was originally requested by Mr. Andrew Galvan of the Ohlone Indian Tribe and as a courtesy is also being sent to the other tribes on the Native American Heritage Commission (NAHC) list submitted to the CPUC**.** It was completed by Far Western Anthropological Research Group, Inc. in December, 2017. The document was submitted under confidential cover as part of Pacific Gas & Electric Company's (PG&E) Proponents Environmental Assessment (PEA) for a Permit to Construct (PTC). The PEA for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood or "project") was filed with the California Public Utilities Commission (CPUC) on December 15, 2017. Additional project information can be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

As was indicated in my February 22, 2018 correspondence to you, the NAHC provided your name as a representative of the Muwekma Ohlone Tribe of the San Francisco Bay Area potentially interested in the activities associated with the project. Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. The attached study may assist you in the development of any comments. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. Also, you may contact Stephanie Green, the CPUC Tribal Liaison, in regards to this matter or other tribal issues at 415-703-5245 or Stephanie.Green@cpuc.ca.gov.

In addition to the attached pdf copy of the Cultural Resources Study, a paper copy of the confidential report will be mailed to you as well.

Thank you for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit
Attachment

cc: Stephanie Green, CPUC Tribal Liaison
Mike Monasmith, CEC, project manager
Lonn Maier, Supervisor CPUC CEQA Unit

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 9, 2018

Andrew Galvan
The Ohlone Indian Tribe
P.O. Box 3152
Fremont, CA 94539

Re: **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California – submitted to the California Public Utilities Commission (CPUC) as CEQA lead agency for the Project**

Dear Mr. Galvan,

Please find attached for your information and consideration a copy of the **Cultural Resources Study for the Ravenswood-Cooley Landing 115 kV Power Line Reconductoring Project, San Mateo County, California**. This information was requested via email, and as a courtesy is also being sent to the other tribes on the Native American Heritage Commission (NAHC) list submitted to the CPUC**.** It was completed by Far Western Anthropological Research Group, Inc. in December, 2017. The document was submitted under confidential cover as part of Pacific Gas & Electric Company's (PG&E) Proponents Environmental Assessment (PEA) for a Permit to Construct (PTC). The PEA for the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project (Ravenswood or "project") was filed with the California Public Utilities Commission (CPUC) on December 15, 2017. Additional project information can be found at http://www.cpuc.ca.gov/environment/info/cec/ravenswoodcooley/.

As the CEQA lead agency, the California Public Utilities Commission (CPUC) will be reviewing the PG&E proposal under the California Environmental Quality Act (CEQA). As part of that effort, it is important that we seek the input of California Native American tribes along with other CEQA interested parties.

As was indicated in my February 22, 2018 correspondence to you, the NAHC provided your name as a representative of the Ohlone Indian Tribe potentially interested in the activities associated with the project. Even though the CPUC has no AB 52 notification letter on file for this project area, we would appreciate your comments on this project for preparing our CEQA documentation. The attached study may assist you in the development of any comments. Should you have questions and inquiries, you may email or call me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov. Also, you may contact Stephanie Green, the CPUC Tribal Liaison, in regards to this matter or other tribal issues at 415-703-5245 or Stephanie.Green@cpuc.ca.gov.

In addition to the attached pdf copy of the Cultural Resources Study, a paper copy of the confidential report will be mailed to you as well.

Thank you for your time and input.

Sincerely,

Billie C. Blanchard
PURA V
Project Manager for Ravenswood-Cooley Landing
Energy Division, CEQA Unit
Attachment

cc: Stephanie Green, CPUC Tribal Liaison
Mike Monasmith, CEC, project manager
Lonn Maier, Supervisor CPUC CEQA Unit

Appendix D

Notice of Intent and Legal Notice

Appendix D. Notice of Intent and Legal Notice

Notice of Intent to Adopt a Mitigated Negative Declaration

for the PG&E Ravensood-Cooley Landing
115 kV Reconductoring Project, Application No. A. 17-12-010

The California Public Utilities Commission (CPUC) Energy Division has prepared a Mitigated Negative Declaration and supporting Initial Study (IS/MND) for consideration of Pacific Gas and Electric Company's (PG&E) permit to construct the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project, which would include the following components: (1) Reconductoring the two 115 kV Ravenswood-Cooley Landing Line circuits (2) Reinforcing existing foundations at four towers; (3) Modifying four lattice steel towers; (4) Installing a new optical fiber ground wire; (5) Installing new tubular steel poles, and modifying or replacing equipment at Ravenswood and Cooley Landing Substations; and, (6) Temporary guard structures and access roads, snub poles, pull sites, staging areas and other temporary work areas.

The CPUC's environmental document may be revived at the following locations:

East Palo Alto Library	City of Menlo Park Library	PG&E Customer Center
2415 University Avenue	413 Ivy Drive	275 Industrial Road
East Palo Alto, CA 94303	Menlo Park, CA 94025	San Carlos, CA 94070

For electronic access to the MND and other project information/reports, check CPUC's website at:
http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/index.htm

The 30-day public comment period for the Draft IS/MND is from August 31, 20018 to, October 1, 2018. Comments may be submitted by email or US mail by 5:00 p.m. on October, 1, 2018. Please be sure to include your name, phone number and return address. Written comments on the Draft IS/MND should be sent to Billie Blanchard, CPUC Project Manager; c/o California Energy Commission STEP Division; 1516 Ninth Street, MS-15; Sacramento, CA 95814 or Email: Ravenswood@energy.ca.gov, with a subject line "Ravenswood".

Following the public comment period, the CPUC will prepare a Final IS/MND that will address comments received on the Draft IS/MND.

legals

Legal Notice

fictitious business name(s) listed above on: 01/01/2015
This filing is refile (Changes in facts from previous filing).
Previous file# FBN582013.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Himanshu Vajir
Hardi Maulin Inc, President
Article/Registration #C3652366. Above entity formed in the State of CA. This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/07/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Mike Loule, Deputy
File No.: FBN645561
SJMN#6209407
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645127
The following person(s) is (are) doing business as: **BODY WORX MASSAGE**, 6146 Camino Verde Dr, Suite P, San Jose, CA 95119. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is:
Santisouk Faucett. 4415 Piper Dr. San Jose, CA 95129.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/07/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Santisouk Faucett
This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/07/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Nina
File No.: FBN645558
SJMN#6208968
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645561
The following person(s) is (are) doing business as: **YNOT NAILS SPA**, 1008 Blossom Hill Road Suite F, San Jose, CA 95123. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is: Hop Nguyen, 6754 Gentry Oaks Place, San Jose, CA 95138.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/21/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Hop Nguyen
This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/21/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Mike Loule, Deputy
File No.: FBN645561
SJMN#6209407
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645127
The following person(s) is (are) doing business as: **BODY WORX MASSAGE**, 6146 Camino Verde Dr, Suite P, San Jose, CA 95119. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is:
Santisouk Faucett. 4415 Piper Dr. San Jose, CA 95129.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/07/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Himanshu Vajir
Hardi Maulin Inc, President
Article/Registration #C3652366. Above entity formed in the State of CA. This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/07/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Nina

Legal Notice

By: /s/ Mike Loule, Deputy
File No.: FBN645561
SJMN#6209407
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645127
The following person(s) is (are) doing business as: **BODY WORX MASSAGE**, 6146 Camino Verde Dr, Suite P, San Jose, CA 95119. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is:
Santisouk Faucett. 4415 Piper Dr. San Jose, CA 95129.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/07/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Himanshu Vajir
Hardi Maulin Inc, President
Article/Registration #C3652366. Above entity formed in the State of CA. This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/07/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Nina
File No.: FBN645558
SJMN#6208968
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645561
The following person(s) is (are) doing business as: **YNOT NAILS SPA**, 1008 Blossom Hill Road Suite F, San Jose, CA 95123. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is: Hop Nguyen, 6754 Gentry Oaks Place, San Jose, CA 95138.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/21/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Hop Nguyen
This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/21/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Mike Loule, Deputy
File No.: FBN645561
SJMN#6209407
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. 278549
The following person(s) is (are) doing business as: **SAN MATEO EXPRESS SMDS**, 2107 Palm Ave, San Mateo, CA 94403. San Mateo County.
Mailing address: 43924 Rosemere Drive, Fremont, CA 94539. Registered Owners(s): Smart Smog LLC, 43924 Rosemere Dr, Fremont, CA 94539. State of Incorporation /Organization: CA.
This business is conducted by a Limited Liability Company.
The registrant commenced to transact business under the fictitious business name or names on N/A.
/s/ Vicky S. Ting, President
THIS STATEMENT WAS FILED WITH MARK CHURCH, ASSESSOR-COUNTY CLERK-RECORDER, SAN MATEO COUNTY ON 08/28/2018.
SMCT#6213499
Aug.31, Sept. 7,14,21,2018

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The registrant commenced to transact business under the fictitious business name or names on
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/s/ Vicky S. Ting, President
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SMCT#6213499
Aug.31, Sept. 7,14,21,2018

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This business is conducted by a Limited Liability Company.
The registrant commenced to transact business under the fictitious business name or names on

Legal Notice

begins on August 31, 2018 and ends on October 15, 2018. Written comments must be received at the Planning Department by 5:00 p.m. on October 15, 2018, in order to be addressed as part of the formal EIR review process.
Comments and questions should be referred to David Keyon in the Department of Planning, Building and Code Enforcement at (408) 535-7886, via e-mail: David.Keyon@sanjoseca.gov, or by regular mail at the mailing address listed above. Please reference the above file number in your written comment letters and correspondence.
Following the close of the public review period, the Director of Planning, Building, and Code Enforcement will prepare a Final Environmental Impact Report that will include responses to comments received during the review period. At least ten days prior to the public hearing on the EIR, the City's responses to comments received during the public review period will be available for review and will be sent to

Notice of Public Hearing
The San Mateo County Community College District will hold a public hearing on the proposed budget for fiscal year 2018-19 on Wednesday, September 12, 2018 at 6:00 p.m. at the San Mateo County Community College District Board Room located at 3401 CSM Drive, San Mateo, California. A copy of the proposed budget will be available for public examination at the San Mateo County Community College District Office, Main Floor, 3401 CSM Drive, San Mateo, California from September 7, 2018 through September 12, 2018 between the hours of 9:30 a.m. to 4:00 p.m. Any stakeholder affected by the San Mateo County Community College District budget may appear before the San Mateo County Community College District Board of Trustees and speak to the proposed budget or any item therein.
8/31/18
CNS-3165762#
SAN MATEO COUNTY TIMES
SMCT 6208182
Aug. 31, 2018

D73 Seini Maufuaiu clothes, shoes, blankets

E43 Hazel Rosas bag, boxes, house items

Purchases must be made with cash only and paid at the above referenced facility in order to complete the transaction. Extra Space Storage may refuse any bid and may rescind any purchase up until the winning bidder takes possession of the personal property.
SMCT#6209777
Aug. 31,Sept.7,2018

NOTICE OF PUBLIC SALE OF PERSONAL PROPERTY

Notice is hereby given that Extra Space Storage will sell at public auction, to satisfy the lien of the owner, personal property described below belonging to those individuals listed below at location indicated:

1520 Willow Rd Menlo Park, Ca. 94025 (650) 463.6111, September 17, 2018 at 11:30 AM

459 Sergio Barraza-tools personal things

DEFAULT UNDER A DEED OF TRUST, DATED 11/22/2005. UNLESS YOU TAKE ACTIONTO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED ANEXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER.BARRETT DAFFIN FRAPPIER TREDER and WEISS, LLP, as duly appointed Trustee under and pursuant to Deedof Trust Recorded on 12/02/2005 as Instrument No. 18702198 of official records in the office of the County Recorderof SANTA CLARA County, State of CALIFORNIA.EXECUTED BY: MINERVA D GABIERA, AN UNMARRIED WOMAN,WILL SELL AT PUBLIC AUCTION TO HIGHEST BIDDER FOR CASH, CASHIER'S CHECK/CASHEQUIVALENT or other form of payment authorized by California Civil Code 2924h(b), (payable at time of sale inlawful money of the United States).DATE OF SALE: 09/24/2018 TIME OF SALE: 10:00 AMPLACE OF SALE: At the Gated North Mar-

Legal Notice

thecounty where the real property is located.NOTICE TO POTENTIAL BIDDERS: If you are considering bidding on this property lien, you should understandthat there are risks involved in bidding at a trustee auction. You will be bidding on a lien, not on the property itself. Placing the highest bid at a trustee auction does not automatically entitle you to free and clear ownership of theproperty. You should also be aware that the lien being auctioned off may be a junior lien. If you are the highest bidder atthe auction, you are or may be responsible for paying off all liens senior to the lien being auctioned off, before you canreceive clear title to the property. You are encouraged to investigate the existence, priority, and size of outstanding liensthat may exist on this property by contacting the county recorder's office or a title insurance company, either of whichmay charge you a fee for this information. If you consult either of these resources, you should be aware that the

Pathfinder Road, Suite 300Diamond Bar, CA 91765(866) 795-1852Dated: 08/17/2018BARRETT DAFFIN FRAPPIER TREDER and WEISS, LLP IS ACTING AS A DEBT COLLECTOR ATTEMPTING TO COLLECT A DEBT. ANY INFORMATION OBTAINED WILL BE USED FOR THAT PURPOSE.
A-4667561 08/24/2018, 08/31/2018, 09/07/2018
SJMN#6208000
8/24/18, 8/31/18, 9/7/18

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Legal Notice

SUMMONS
(CITACION JUDICIAL)

guilty of a crime.)
/s/ Leon Schaper, Schaper Construction, Inc. President
Article/Registration #1296570. Above entity formed in the State of CA. This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/21/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Mike Loule, Deputy
File No.: FBN645558
SJMN#6208968
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
File No. FBN645561
The following person(s) is (are) doing business as: **YNOT NAILS SPA**, 1008 Blossom Hill Road Suite F, San Jose, CA 95123. Santa Clara County.
The business is owned by: an individual. The name and residence address of the owner(s) /registrant(s) is: Hop Nguyen, 6754 Gentry Oaks Place, San Jose, CA 95138.
The registrant/owner began transacting business under the fictitious business name(s) listed above on: 08/21/2018
This filing is first filing.
I declare that all information in this statement is true and correct. (A registrant who declares as true information which he or she knows to be false is guilty of a crime.)
/s/ Hop Nguyen
This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/21/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Mike Loule, Deputy
File No.: FBN645561
SJMN#6209154
Aug.24,31, Sept.7,14,2018

FICTITIOUS BUSINESS NAME STATEMENT
FILE NO. 278707
The following person(s) is (are) doing business as: **AMERICAN STAR HOME I**, 1209 Dakota Avenue, San Mateo, CA 94401, San Mateo County: Mailing Address: 2089 Fitzgerald Way, Brentwood, CA 94513.
Registered Owners(s): American Star Home I IDF/DD-N, 2089 Fitzgerald Way, Brentwood, CA 94513. State of Incorporation / Organization: California.
This business is con-
the following person(s) /registrant(s) has/have abandoned the use of the fictitious business name(s). FICTITIOUS BUSINESS NAME: **ALIGNTECHS**, 1124 Old Bayshore Hwy #10, San Jose, CA 95112. FILED IN SANTA CLARA COUNTY ON 01/11/2018. UNDER FILE NO. FBN612866. FULL NAME of Registrant(s): Victor Y Figueroa, 1124 Old Bayshore Hwy #10, San Jose, CA 95112. The business was conducted by an individual.
I declare that all information in this statement is true and correct.
/s/ Victor Y. Figueroa, Owner
This statement was filed with the Co. Clerk-Recorder of Santa Clara Co. on 08/21/2018.
Regina Alcomendras, County Clerk Recorder
By: /s/ Venessa Reed, Deputy
File No.: FBN645583
SJMN#6209154
Aug.24,31, Sept.7,14,2018

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Registered Owners(s): American Star Home I IDF/DD-N, 2089 Fitzgerald Way, Brentwood, CA 94513. State of Incorporation / Organization: California.
This business is con-
PD17-014, and PT17-023, Council District: 1.
The proposed project will have potentially significant environmental effects with regard to air quality, biological resources, greenhouse gas emissions, hazards and hazardous materials, noise, and transportation. The California Environmental Quality Act (CEQA) requires this notice to disclose whether any listed toxic sites are present at the project location. The project location is not contained in the Cortese List of toxic sites.
The Draft EIR and documents referenced in the Draft EIR are available for review online at the City of San José's "Active EIRs" website at www.sanjoseca.gov/activeeirs and are also available at the following locations:
Department of Planning, Building, and Code Enforcement
200 East Santa Clara St., 3rd Floor
San José, CA 95113
(408) 535-3555

West Valley Branch Library
1243 San Tomas Aquino Rd.
San José, CA 95117
(408) 244-4747

Dr. MLK Jr. Main Library
150 E. San Fernando St.
San José, CA 95112
(408) 277-4822

The public review period for this Draft EIR

The smart people you want to hire read the Mercury News.

B61 John Laing Household Items form one bedroom

THERE IS A SUMMARY OF THE INFORMATION IN THIS DOCUMENT ATTACHED.YOU ARE IN

Notice of Intent to Adopt a Mitigated Negative Declaration

for the PG&E Ravenswood-Cooley Landing
115 kV Reconductoring Project, Application No. A. 17-12-010

The California Public Utilities Commission (CPUC) Energy Division has prepared a Mitigated Negative Declaration and supporting Initial Study (IS/MND) for consideration of Pacific Gas and Electric Company's (PG&E) permit to construct the Ravenswood-Cooley Landing 115 kilovolt (kV) Reconductoring Project, which would include the following components: (1) Reconductoring the two 115 kV Ravenswood-Cooley Landing Line circuits (2) Reinforcing existing foundations at four towers; (3) Modifying four lattice steel towers; (4) Installing a new optical fiber ground wire; (5) Installing new tubular steel poles, and modifying or replacing equipment at Ravenswood and Cooley Landing Substations; and, (6) Temporary guard structures and access roads, snub poles, pull sites, staging areas and other temporary work areas.

The CPUC's environmental document may be revived at the following locations:

East Palo Alto Library	City of Menlo Park Library	PG&E Customer Center
2415 University Avenue	413 Ivy Drive	275 Industrial Road
East Palo Alto, CA 94303	Menlo Park, CA 94025	San Carlos, CA 94070

For electronic access to the MND and other project information/reports, check CPUC's website at:
http://www.cpuc.ca.gov/environment/info/CEC/RavenswoodCooley/index.htm

The 30-day public comment period for the Draft IS/MND is from August 31, 20018 to, October 1, 2018. Comments may be submitted by email or US mail by 5:00 p.m. on October, 1, 2018. Please be sure to include your name, phone number and return address. Written comments on the Draft IS/MND should be sent to Billie Blanchard, CPUC Project Manager; c/o California Energy Commission STEP Division; 1516 Ninth Street, MS-15; Sacramento, CA 95814 or Email: Ravenswood@energy.ca.gov, with a subject line "Ravenswood".

Following the public comment period, the CPUC will prepare a Final IS/MND that will address comments received on the Draft IS/MND.

A Petition for Probate has been filed by Kenneth Pray in the Superior Court of California, County of San Mateo.
The Petition for Probate requests that Kenneth Pray be appointed as personal representative to administer the estate of the decedent.
The petition requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.
A hearing on the petition will be held in this court as follows:
Date: Sept. 26, 2018 Time: 9:00 a.m. Dept.: 28
Address of Court: Superior Court of California, County of San Mateo,
400 County Center, Redwood City, CA 94063
Probate
If you object to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.
If you are a creditor or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within the **later** of either (1) **four months** from the date of first issuance of letters to a general personal representative, as defined in section 58(b) of the California Probate Code, or (2) **60 days** from the date of mailing or personal delivery to you of a notice under section 9052 of the California Probate Code. **Other California statutes and legal authority may affect your rights as a creditor. You may want to consult with an attorney knowledgeable in California law.**
You may examine the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.
Attorney for petitioner: Cameron Miller
1313 Laurel St. #114, San Carlos, CA 94070
650-595-0444
SMCT#6212471; Aug. 30,31,Sept.6,2018

R. BERTOCCELLI be appointed as personal representative to administer the estate of the decedent.
The petition requests the decedent's will and codicils, if any, be admitted to probate. The will and any codicils are available for examination in the file kept by the court.
The petition requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.
A hearing on the petition will be held in this court as follows:
Date: Oct. 11, 2018 Time: 9:00 a.m. Dept.: 12
Address of Court: Superior Court of California, County of Santa Clara,
191 North First Street, San Jose, CA 95113.
Probate Department
If you object to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.
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Attorney for petitioner: SILVIO E. BORELLO
999 West Taylor Street, Suite B
San Jose, California 95126
(408) 971-2300
SJMN#6208648; Aug. 24,25,31,2018

proposed project
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The California En-
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(CEQA) requires
notice to disclose
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project location.
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contained in the
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Draft EIR and
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able for review
at the City of
José's "Active
website at www.
seca.gov/activee
d are also availa-
the following lo-
ns:
rtment of Plan-
Building,
Code Enforce-

East Santa Clara
d Floor
osé, CA 95113
535-3555

Valley Branch Li-

San Tomas
o Rd.
osé, CA 95117
244-4747

MLK Jr. Main Li-

E. San Fernando

osé, CA 95112
277-4822

public review pe-
for this Draft EIR

you want to hire
read the Mercury News.

Household Items form one bedroom

IN THIS DOCUMENT ATTACHED.YOU ARE IN

Notice of Intent to Adopt a Mitigated Negative Declaration

for the PG&E Ravenswood-Cooley Landing

115 kV Reconductoring Project, Application No. A. 17-12-010

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nia, County of San Mate
The Petition for Probat
Kenneth Pray be appoi
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The petition requests
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tion of Estates Act. (T
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have waived notice or
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person files an object
shows good cause wh
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A hearing on the petiti
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Date: Sept. 26, 2018 Ti
Address of Court: Supe
County of
400 County Center, Re
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If you object to the gra
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jections or file written c
before the hearing. You
person or by your attor
if you are a creditor or
the decedent, you mus
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either (1) **four months**
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ifornia Probate Code, c
date of mailing or pers
notice under section 90
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authority may affect y
You may want to co
knowledgeable in Califo
You may examine the
you are a person inter
may file with the cour
Notice (form DE-154) of
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tion or account as pro
section 1250. A Request
is available from the co
Attorney for petitioner:
1313 Laurel St. #114, Sa
650-595-0444

SMCT#6212471; Au