San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

PUBLIC NOTICE

AVAILABILITY OF A MITIGATED NEGATIVE DECLARATION

PROJECT INFORMATION

Project Title:	***PG&E Power Asset Acquisition Project***	*Project Sponsor:*	Sue Chau, San Francisco Public Utilities Commission 415.554.3238 schau@sfwater.org
Project Address:	Various		
Case No.:	**2019-017272ENV**		
Block/Lot No.:	Various		
Zoning District(s):	Various	*Environmental Coordinator:*	Julie Moore 628.652.7566 CPC.PGEPowerAssetMND@sfgov.org
Neighborhoods:	Potrero Hill, Bayview, Visitacion Valley, Crocker Amazon, Outer Mission, Ocean View, and Lakeshore		

The San Francisco Planning Department has studied this project's potential physical environmental effects and welcomes your comments on the adequacy of the preliminary mitigated negative declaration (PMND). Refer to the Project Description and Purpose of Notice sections below for more information.

Project Description

A PMND has been prepared by San Francisco Planning in connection with this project as required by the California Environmental Quality Act (CEQA) to study the project's potential physical environmental effects.

Subject to required approvals, the City and County of San Francisco intends to purchase all of Pacific Gas and Electric Company (PG&E's) distribution assets and substantially all of PG&E's transmission assets that are needed for the city to provide reliable electricity service to customers within San Francisco. These assets generally include substations, transformers, transmission and distribution lines, supporting equipment, operational facilities, relevant records, and other facilities (e.g., streetlights). The project would also include the transfer, assignment, or assumption of PG&E-owned fee property, easements, rights-of-way, lease agreements, permits, and other land-related agreements, as well as new lease or other agreements between the city and PG&E as necessary for safe and reliable operation and maintenance of the transferred assets. In addition, the SFPUC would acquire property rights as needed for the construction, installation, operation, and maintenance of proposed infrastructure on public land or private lands.

As part of the transfer, certain PG&E facilities outside of the city limits must be physically separated from PG&E's electricity grid within the city. To do so, the SFPUC would modify some existing substations, construct new distribution feeders, and install distribution infrastructure to connect and disconnect existing electric lines. The

environmental review discusses those components that would require physical changes to the environment. The project area, as defined, includes areas where excavation is proposed, as well as any above- or below- ground connection and disconnection locations. This includes underground power distribution lines and vaults, new equipment at four existing substations, and distribution system separation work. The portion of the project requiring new construction or modifications to existing facilities would primarily be in the southern portion of San Francisco and along the county border in the northern portions of Brisbane and Daly City. The main distribution line alignment would be approximately 5 miles long and installed within streets, sidewalks, and other publicly-owned land. It would extend from near Junipero Serra Boulevard and Holloway Avenue on the west, south to Brotherhood Way, and east along Alemany Boulevard and Geneva Avenue to the Martin substation in Brisbane. New equipment would be installed within the following substations: Martin (Geneva Avenue near Bayshore Boulevard); Potrero (Illinois Street near Humboldt Street); Plymouth (Plymouth Avenue near Broad Street); and, Randolph (Byxbee Street near Randolph). Disconnecting and connecting distribution lines between overhead poles and underground vaults could occur either above- or below-ground, and would be performed in small, discontinuous areas generally located near the county border, as shown on Figure 1.

The document is a PMND, containing information about the possible environmental effects of the proposed project. The PMND documents the determination by San Francisco Planning that the proposed project could not have a significant adverse effect on the environment. The publication of this environmental document does not indicate a decision by the City to approve or disapprove the proposed project.

Projects on State Hazardous Materials Lists

As required by CEQA Guidelines section 15087(c)(6), the following information is provided because the project site is included on the following lists compiled pursuant to California Government Code section 65962.5.

Location	Site Name and No.	Site Type	List and Status Date
Martin Substation 731 Schwerin St. Daly City, CA 94104	PG&E Martin Service - OU-2 and Levison (41360093)	DTSC State Response	Envirostor 6/30/2003
	SF Water Department (PG&E MARTIN) (41360101)	DTSC Voluntary Cleanup	EnviroStor 6/26/2001
	Martin Service Center Daly City Yard (41360100) (SLT200528)	DTSC State Response SWRCB Cleanup Program	Envirostor 5/4/1995 GeoTracker 2/3/2021
Potrero Power Plant 1201 Illinois St. San Francisco, CA 94108	Potrero Power Plant – Switchyard and General Construction Yard (T10000004527)	SWRCB Cleanup Program	GeoTracker 1/4/2013
	Former Potrero Power Plant – Potrero Power Station (SL138380800)	SWRCB Cleanup Program	GeoTracker 2/16/2021
	Potrero Power Plant – Hoe Down Yard Area (T10000004496)	SWRCB Cleanup Program	GeoTracker 12/19/2012

Purpose of Notice

The PMND is available to view or download from the Planning Department's website at https://sfplanning.org/sfceqadocs. Paper copies are also available at the planning counter of the San Francisco Permit Center on the second floor of 49 South Van Ness Avenue, San Francisco.

If you have questions concerning environmental review of the proposed project, contact the Planning Department staff contact listed above.

You are not required to take any action. If you wish to comment on the adequacy of the PMND, within 30 calendar days following publication of the PMND (by 5:00 p.m. on February 4, 2022), any person may:

1. Make recommendations for amending the text of the document. The text of the PMND may be amended to clarify or correct statements and may be expanded to include additional relevant issues or to cover issues in greater depth. This may be done **without** the appeal described below; **OR**

2. Appeal the determination of no significant effect on the environment to the Planning Commission in a letter which specifies the grounds for such appeal, accompanied by a $681 check payable to the San Francisco Planning Department.[1] An appeal requires the Planning Commission to determine whether or not an environmental impact report must be prepared based upon whether or not the proposed project could cause a substantial adverse change in the environment. To file, send the appeal letter to the Planning Department, Attention: Lisa Gibson, 1650 Mission Street, Suite 400, San Francisco, CA 94103 or emailed to lisa.gibson@sfgov.org and **must be received by 5:00 p.m. on Friday, February 4, 2022.**

In the absence of an appeal, the mitigated negative declaration shall be made final, subject to necessary modifications, after 30 days from the date of publication of the PMND. If the PMND is appealed, the Final Mitigated Negative Declaration (FMND) may be appealed to the Board of Supervisors. The first approval action, as identified in the initial study, would establish the start of the 30-day appeal period for the FMND pursuant to San Francisco Administrative Code Section 31.16(d).

Members of the public are not required to provide personal identifying information when they communicate with the Commission or the Department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the Department's website or in other public documents.

This notice is being issued during the suspension of certain CEQA filing and posting requirements pursuant to executive orders N-54-20 and N-80-20, and its issuance complies with the alternative posting requirements stated in the order. This notice also complies with local requirements under the March 23, 2020, Fifth Supplement to the Mayoral Proclamation Declaring the Existence of a Local Emergency dated February 25, 2020.

1 Upon review by the Planning Department, the appeal fee may be reimbursed for neighborhood organizations that have been in existence for a minimum of 24 months.

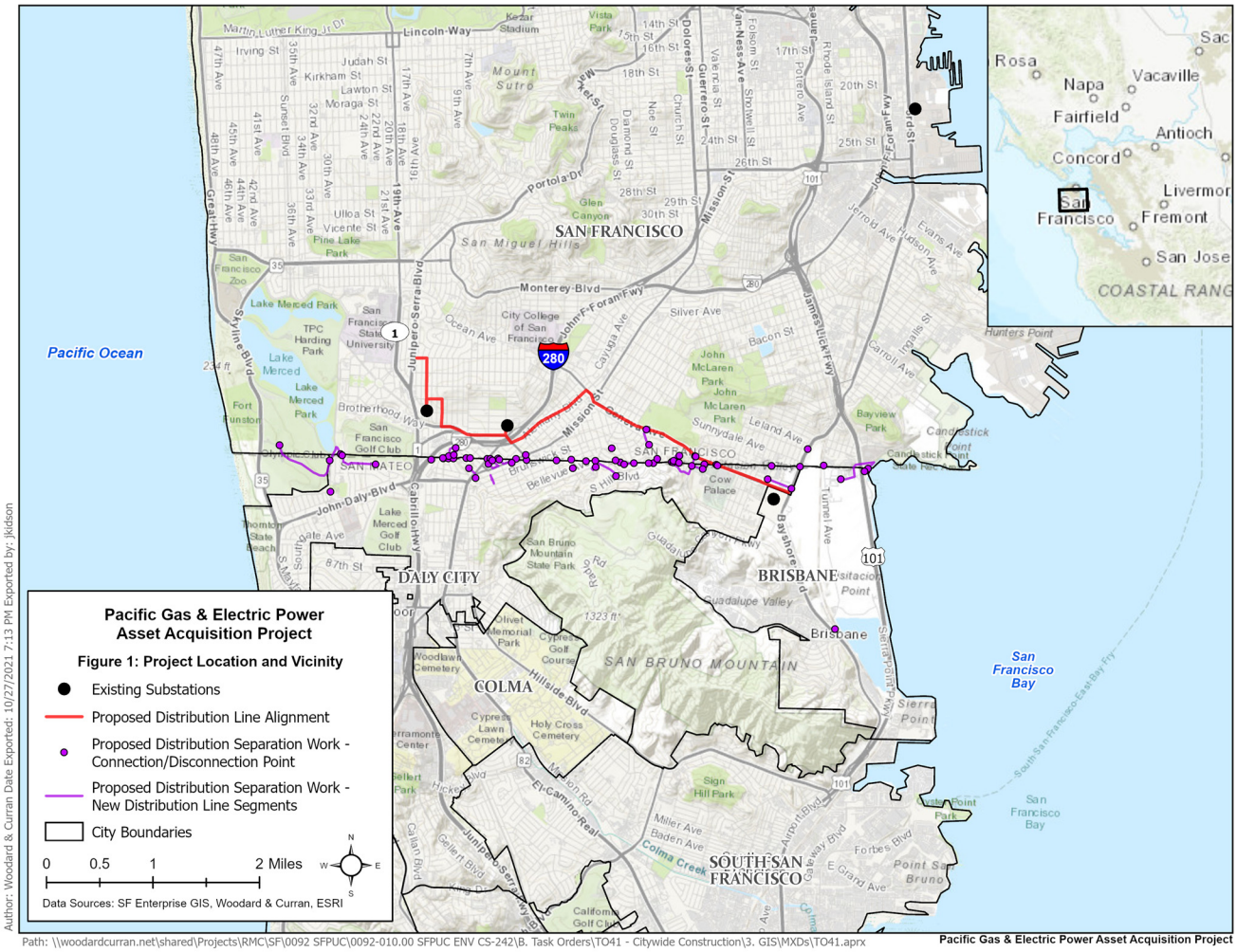

Figure 1. Project Location and Vicinity

CEQA

pronounced “SEE-kwuh”

The San Francisco Planning Department (SF Planning) reviews projects for potential environmental impacts. This is CEQA, which stands for the **California Environmental Quality Act**, a state law created in 1970.

THE BASIC GOALS OF CEQA ARE TO:

INFORM

decision makers and the public about the potential significant environmental impacts

PREVENT

significant, avoidable damage to the environment by requiring changes to a project

IDENTIFY

the ways that the evironmental damage can be avoided or reduced

DISCLOSE

to the public the reasons why decisions are made if significant impacts occur

In San Francisco, SF Planning informs the public of many types of environmental impacts, including impacts on air quality, noise, wind, shadow, transportation, and other topics.

WHO IS INVOLVED?

- SF Planning is responsible for conducting environmental review in San Francisco.
- Various stakeholders including the public
- City decision makers
- Government or private project sponsors (person/group proposing the change)

WHEN IS CEQA DONE?

Environmental review is not an approval of a project, but it must be complete before city decision makers determine whether or not to approve a project that could impact the environment.

Example projects include:

- Public or private projects
- Board of Supervisors legislation
- Allocation of public funding to projects

San Francisco Planning

Para obtener más información, visite:
請造訪, 以瞭解詳情:
Upang madagdagan ang kaalaman, mangyaring bumisita sa:
To learn more, please visit:
https://sfplanning.org/environmental-review

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Date: **1/5/2022**

The San Francisco Planning Department is studying a project's potential environmental effects and welcomes your comments. The enclosed notice concerns the **PG&E Asset Acquisition Project (2019-017272ENV)**. The other side of this page describes the environmental review process under state law. You may provide comments by **2/4/2022** or request future project updates from the staff contact indicated in the attached notice.

To obtain information about this notice in Spanish, Chinese, or Filipino, please call **628.652.7550.** Please be advised that the Planning Department will require at least one business day to respond to any call.

三藩市規劃局 (San Francisco Planning Department) 正在研究一項專案的潛在環境影響，歡迎大家踴躍提出意見。本函所附的通知書涉及位於 **PG&E Asset Acquisition Project (2019-017272ENV)** 的專案。本頁背面對加州法律規定的環境影響審核流程做了詳細說明。請於 **2/4/2022** 日之前針對本案提出評論，或者向本函所附通知書中指定的聯絡人提出要求，繼續瞭解專案的最新發展。請致電 **628.652.7550**以索取通知書中文版本資訊。請注意，規劃局需要至少一個工作天才能回電。

El Departamento de Planificación está estudiando los posibles efectos medioambientales de un proyecto y desea saber su opinión. El aviso incluido concierne a un proyecto ubicado en **PG&E Asset Acquisition Project (2019-017272ENV).** Al reverso de esta página se describe el proceso de análisis medioambiental según la ley estatal. Usted puede entregar sus opiniones y comentarios a más tardar el **2/4/2022** o solicitar futuras actualizaciones sobre el proyecto al contacto indicado en el aviso adjunto.

Para obtener información sobre este aviso en español, llame al **628.652.7550**. Le informamos que el Departamento de Planificación necesitará por lo menos un día hábil para responder cualquier llamada.

Pinag-aaralan ng Kagawaran ng Pagpaplano ng San Francisco ang mga potensyal na epekto sa kapaligiran ng isang proyekto at tinatanggap ang iyong mga komento. Ang nakapaloob na paunawa ay patungkol sa isang proyekto na matatagpuan sa **PG&E Asset Acquisition Project (2019-017272ENV).** Inilalarawan ng kabilang panig ng pahinang ito ang proseso ng pagsusuri sa kapaligiran sa ilalim ng batas ng estado. Maaari kang magbigay ng mga komento sa **2/4/2022** o humiling ng mga bagong kaalaman sa proyekto sa hinaharap mula sa pagkontak sa kawani na nakalagay sa kalakip na abiso.

Upang makakuha ng impormasyon tungkol sa paunawang ito sa Filipino, mangyaring tumawag sa **628.652.7550**. Mangyaring maabisuhan na ang Kagawaran ng Pagpaplano ay mangangailangan ng kahit isang araw ng may trabaho o pasok upang tumugon sa anumang tawag.

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Preliminary Mitigated Negative Declaration

Date:	January 5, 2022
Case No.:	**2019-017272ENV**
Project Title:	**PG&E Power Asset Acquisition Project**
Zoning:	various
Height/Block:	various
Block/Lot:	various
Neighborhoods:	Potrero Hill, Bayview, Visitation Valley, Crocker Amazon, Outer Mission, Ocean View & Lakeshore
Project Sponsor:	Sue Chau, San Francisco Public Utilities Commission 415-554-3238
Lead Agency:	San Francisco Planning Department
Staff Contact:	Julie Moore – (628) 652-7566 CPE.PGEPowerAssetMND@sfgov.org

Project Description:

Subject to required approvals, the City and County of San Francisco intends to purchase all of Pacific Gas and Electric Company's (PG&E's) distribution assets and substantially all of PG&E's transmission assets that are needed for the city to provide reliable electricity service to customers in San Francisco. These assets generally include substations, transformers, transmission and distribution lines, supporting equipment, operational facilities, relevant records, and other facilities (e.g., streetlights). The project would also include the transfer, assignment, or assumption of PG&E-owned fee property, easements, rights-of-way, lease agreements, permits, and other land-related agreements, as well as new lease or other agreements between the city and PG&E as necessary for safe and reliable operation and maintenance of the transferred assets. In addition, the SFPUC would acquire property rights as needed for the construction, installation, operation, and maintenance of proposed infrastructure on public land or private lands.

As part of the transfer, certain PG&E facilities outside of the city limits must be physically separated from PG&E's electricity grid within the city. To do so, the SFPUC would modify some existing substations, construct new distribution feeders, and install distribution infrastructure to connect and disconnect existing electric lines. The environmental review will focus on those components that would require physical changes to the environment. The project area, as defined, includes areas where excavation is proposed, as well as any above- or belowground connection and disconnection locations. The portion of the project requiring new construction or modifications to existing facilities would primarily be in the southern portion of San Francisco and along the county border in the northern portions of Brisbane and Daly City. The main distribution line alignment would be approximately 5 miles long and installed

underground within streets, sidewalks, and other publicly-owned land. It would extend from near Junipero Serra Boulevard and Holloway Avenue on the west, south to Brotherhood Way, and east along Alemany Boulevard and Geneva Avenue to the Martin substation in Brisbane. New equipment would be installed within the following substations: Martin (Geneva Avenue near Bayshore Boulevard); Potrero (Illinois Street near Humboldt Street); Plymouth (Plymouth Avenue near Broad Street); and, Randolph (Byxbee Street near Randolph Street). Additional work would be performed in small, discontinuous areas generally located near the county border, including within the Olympic Club. The project components are located in areas containing a mix of residential, commercial, industrial, and public uses.

Project plans and additional materials related to the PG&E Power Asset Acquisition Project are available for review on the San Francisco Property Information Map, which can be accessed at https://sfplanninggis.org/PIM/. Individual files can be viewed by clicking on the Planning Applications link, clicking the "More Details" link under the project's environmental case number 2019-017272ENV and then clicking on the "Related Documents" link.

Finding:

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

Mitigation measures are included in this project to avoid potentially significant effects. See pages 193 - 199.

cc: Sue Chau

ATTACHMENT A - INITIAL STUDY

Pacific Gas & Electric Power Asset Acquisition Project

Planning Department Case No. 2019-017272ENV

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Acronyms

ABAG	Association of Bay Area Governments
ATCM	Airborne Toxic Control Measure
Bay Area air district	Bay Area Air Quality Management District
CalEEMod	California Emissions Estimator Model
California air board	California Air Resources Board
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CCSF or city	City and County of San Francisco
CNDDB	California Natural Diversity Database
CO	carbon monoxide
dBA	A-weighted sound level
DNL or Ldn	Day-Night Average Sound Level
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
EMFAC	EMission FACtor model
EPA	United States Environmental Protection Agency
GHG	greenhouse gas
HVAC	heating, venting, air conditioning
gsf	gross square feet
hp	horsepower
IPAC	Information for Planning and Consultation
kV	kilovolts
Ldn (or DNL)	day-night average sound level
Leq	energy equivalent level
Lmax	maximum sound level
LUST	leaking underground storage tank
MW	megawatts
$MTCO_2E$	carbon dioxide equivalents
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OU	operable units
PAHs	polycyclic aromatic hydrocarbons
PG&E	Pacific Gas and Electric
PM	particulate matter
$PM_{2.5}$	particulate matter
PPM	parts per million
PPV	peak particle velocity
PVC	polyvinyl chloride
Qsr	slope debris and ravine fill
Qu	undifferentiated sedimentary deposits
RAP	remedial action plan

ROG	reactive organic gases
Regional water board	Regional Water Quality Control Board
RWQCB	Regional Water Quality Control Board
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SMP	site mitigation plan
SO_2	sulfur dioxide
STATCOM	static synchronous compensator
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TPH	total petroleum hydrocarbons
$\mu g/m^3$	micrograms per cubic meter
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tanks
VDECS	CARB verified diesel emission control strategy
Water board	State Water Resources Control Board

INITIAL STUDY

Pacific Gas & Electric Power Asset Acquisition Project
Planning Department Case No. 2019-017272ENV

A. PROJECT DESCRIPTION

A.1. Overview

The San Francisco Public Utilities Commission (SFPUC) is proposing the Pacific Gas and Electric (PG&E) Power Asset Acquisition Project (the proposed project or project). This initial study project description details elements of the project that would involve physical changes to the environment: approximately 15 miles of new underground power distribution/transmission lines and vaults, mostly within public rights-of-way and private roads, and new equipment in existing electrical substations.

A.2. Background

As San Francisco's municipal power utility, the SFPUC's Power Enterprise provides electric services within the City and County of San Francisco and to certain electric customers outside of San Francisco. The SFPUC owns and operates the Hetch Hetchy Power System, the main source of the SFPUC's power. The Hetch Hetchy Power System network supplies clean energy to most of San Francisco's municipal facilities, services and customers, which include San Francisco International Airport; San Francisco General Hospital; MUNI; the San Francisco Police Department; the San Francisco Fire Department; retail tenants, residences and businesses in the San Francisco Shipyard at Hunter's Point; and more. The Hetch Hetchy Power System is composed of three hydroelectric powerhouses with a combined total hydroelectric output of nearly 400 megawatts (MW). The SFPUC also generates over 10 MW of clean, renewable energy from 19 solar arrays and 2 biogas cogeneration facilities. The SFPUC's municipal power utility and CleanPowerSF, the SFPUC's community choice aggregation program, provide power to about 70 percent of electricity customers in San Francisco. This power is delivered to municipal utility and CleanPowerSF customers through the PG&E-owned electricity transmission and distribution system.

PG&E provides natural gas and electricity services throughout its service territory in Northern California, including to residential, commercial, and industrial customers in the City and County of San Francisco (city) and San Mateo County. PG&E owns and operates an electrical transmission and distribution system in the cities of San Francisco, Daly City, and Brisbane. The transmission system serving the city is located throughout San Francisco and Brisbane and includes power lines, substations, and electrical equipment that deliver power at 115 kilovolts (kV) and 230 kV. The existing distribution system in and around the San Francisco is a grid that covers the entire city and neighboring cities. The distribution system consists of power lines, poles, streetlights, underground ducts and vaults, substations, electrical equipment, and customer meters that deliver power at 34, 12 or 4 kV. All transmission lines and portions of the electric distribution lines within the city and project area are underground.

Subject to required approvals, the City and County of San Francisco intends to purchase all of PG&E's distribution assets and substantially all of PG&E's transmission assets that are needed for the city to provide reliable electricity service to customers in San Francisco. As part of the transfer, certain PG&E facilities outside of the city limits must be physically separated from PG&E's electricity grid within the city. To do so, the SFPUC would modify some existing substations, construct new distribution feeders, and install distribution infrastructure to connect and disconnect existing electric lines.

The assets generally include substations, transformers, transmission and distribution lines, supporting equipment, operational facilities, relevant records, and other facilities (e.g., streetlights). The project would also include the transfer, assignment, or assumption of PG&E-owned fee property, easements, rights-of-way, lease agreements, permits, and other land-related agreements, as well as new lease or other agreements between the city and PG&E as necessary for safe and reliable operation and maintenance of the transferred assets. In addition, the SFPUC would acquire property rights as needed for the construction, installation, operation, and maintenance of proposed infrastructure on public land or private lands. A full list of assets proposed for acquisition is presented in **Appendix A (PG&E Acquisition Project Targeted Assets)**. This list may change, depending upon the outcome of negotiations with PG&E. In particular, the city could exclude the 230kV transmission lines and 230 kV busses at the Embarcadero Substation, Martin Substation and Potrero Substation ("230kV Assets") from the purchase. Subsequent changes to the list of assets that the SFPUC would acquire as part of the project may require further California Environmental Quality Act (CEQA) review.

This project description focuses on those components that would require physical changes to the environment.[1] New infrastructure (e.g., breakers, transformers, and distribution lines) is proposed to allow the city to deliver power from acquired assets to all city customers and for PG&E to continue to deliver power to its existing San Mateo County customers from distribution lines south of the San Francisco-San Mateo County border. Proposed modifications to existing infrastructure would include physical separation of the San Francisco electricity infrastructure from PG&E's San Mateo County grid by connecting or disconnecting existing electric lines on poles or in underground vaults.

A.3. Location

The project is located primarily in the cities of San Francisco, Daly City, and Brisbane. The project area, as defined, includes areas where excavation is proposed, as well as any above- or below-ground connection and disconnection locations. The portion of the project requiring new construction or modifications to existing facilities would primarily be in the southern portion of San Francisco and along the county border in the northern portions of Brisbane and Daly City (**Figure 1**). The new distribution line alignment area extends from near Junipero Serra Boulevard and Holloway Avenue on the west, south to Brotherhood Way, and east along Alemany Boulevard and Geneva Avenue to the Martin substation in Brisbane. Additional work would be performed in small, discontinuous areas generally located near the county border, including in San Mateo County within the Olympic Club Golf Course. Equipment also would be installed within the Potrero, Martin, and Plymouth, and Randolph substations. The project components are located in areas containing a mix of residential, commercial, industrial, and public uses.

[1] Subsequent changes to the project, if any, (e.g., activities that entail ground disturbance, other alterations to the site, or changes in operations that may have an effect on the physical environment), may require further CEQA review.

Figure 1: Project Location and Vicinity

A.4. Project Components

Proposed project components involving physical changes to the environment are presented below. The description is organized by the following component types: underground power distribution lines and vaults, equipment installation at four existing substations, and distribution system separation work. Specific project components include the following:

- Approximately 10 miles of underground power distribution lines (including approximately 5 miles for distribution separation work) and 300 vaults
- Substation equipment installation
    - Martin Substation, located on Geneva Avenue near Bayshore Boulevard in Brisbane
    - Potrero Substation, located on Illinois Street in San Francisco near Humboldt Street in San Francisco
    - Plymouth Substation, located on Plymouth Avenue near Broad Street in San Francisco
    - Randolph Substation, located on Byxbee Street in San Francisco near Randolph Street in San Francisco
    - Approximately 4 miles of transmission lines within the substations
- Distribution system separation work, which involves disconnecting and connecting distribution lines between overhead poles and underground vaults

A.4.1 Underground Power Distribution Lines

Approximately 5 miles of new distribution lines would be constructed from Martin Substation in Brisbane to an existing connection at the intersection of Holloway Avenue, Beverly Street, and Lunado Way in San Francisco. The distribution lines would be installed in an underground duct bank[2] within streets, sidewalks, and other publicly-owned land located adjacent to residential, commercial, industrial, and public (e.g., parks) areas. Approximately 0.75 miles of this alignment is located within the cities of Brisbane and Daly City, and approximately 4.25 miles are in San Francisco. The new distribution lines would connect the existing Martin Substation with the existing Plymouth and Randolph substations. The proposed alignment is shown in **Figure 2** and in **Table 1** below.

[2] Duct banks are groups of conduits designed to protect and consolidate cabling, in this case electric and communication lines. Duct banks are buried underground in trenches to connect infrastructure.

Table 1: Distribution Line Alignment

Segment	Start	End	Approximate Distance (miles)
Geneva Boulevard	Martin Substation at Bayshore Blvd in Brisbane	Alemany Boulevard in San Francisco	2.2
Alemany Boulevard	Geneva Avenue	Sickles Avenue	0.85
Sickles Avenue	Alemany Boulevard	Plymouth Avenue	0.1
Plymouth Avenue	Sickles Avenue	Plymouth Substation	0.1
Sagamore Street	Plymouth Avenue	Brotherhood Way	0.35
Brotherhood Way	Orizabea Avenue	Arch Street	0.27
Arch Street	Brotherhood Way	Sargent Street	0.26
Sargent Street	Arch Street	Byxbee Street	0.15
Byxbee Street	Sargent Street	Randolph Street	0.12
Byxbee Street	Sargent Street	Holloway Avenue	0.38
Holloway Avenue	Byxbee Street	Beverly Street/Lunado Way intersection	0.11
Approximate Total Distance (miles)			**4.9**

Figure 2: Distribution Alignment Location

For most of the alignment, the typical duct bank size would be approximately 4.5 feet wide and 3 feet deep and would contain up to nine 6-inch-diameter electric conduits that enclose the cables within.[3] The typical trench to accommodate this duct bank size would be approximately 6.5 feet wide and 6 feet deep. This trench would also accommodate two 4-inch-diameter communication conduits for fiber optic cables. Fiber optic cables would be used for electrical distribution system communications. Where other subsurface utilities are present along the alignment, the duct bank would be installed in accordance with standard minimum spacing requirements. In certain locations the duct bank could be narrower, wider, shallower, or deeper to avoid conflicts with existing below grade infrastructure, with a maximum depth of 11 feet.-After the conduits are installed, the duct bank trench would have a fluidized thermal backfill,[4] a 4-inch-thick red concrete cap, class 2 aggregate base, concrete layer installed, followed by an asphaltic concrete layer to restore the pavement section.

Protective devices, or relays, would be installed at the substations that will protect the cables. Relays can isolate the electrical circuit and de-energize the conductors in a fraction of a second should the cable integrity be compromised.

Below-grade concrete vaults (with surface-mounted lids) would be required along the distribution line alignment to facilitate cable pulling and electrical equipment installation. Approximately 195 power vaults and 65 underground communication vaults would be installed in line with the duct bank. The power vaults would be approximately 4.5 feet wide, by 8.5 feet long, by 6 feet deep and would be installed in trenches approximately 7.5 feet wide, by 11.5 feet long, by 7 feet deep. The communication vaults would be approximately 2.5 feet wide, by 4 feet long, by 3 feet deep and would be installed in trenches approximately 5 feet wide, by 7 feet long, by 4 feet deep. The electrical and communication vaults would be spaced along the distribution line alignment approximately 400 feet apart and would be located either in the roadway or sidewalk.

A.4.2 Substation Equipment

A.4.2.1 DUCT BANK CONNECTIONS AT SUBSTATIONS

The new underground distribution lines would be connected to existing facilities at the Martin, Plymouth, and Randolph substations. The precise locations of these connections within individual substations have yet to be verified. For the purposes of this analysis, it is assumed that connections would require excavation of 3-foot-wide by 7-foot-deep trenches anywhere within the affected parcels.

A.4.2.2 MARTIN SUBSTATION

The existing Martin Substation infrastructure would be reconfigured for separation of the transmission and distribution systems and to provide for safe, reliable, and independent operation of the city and PG&E electric systems. Electrical circuits and equipment would be installed entirely within the walled substation (i.e., in the switchyard area). The proposed modifications to Martin Substation are listed in **Table 2**, below. **Figure 3** shows the boundaries within which above-ground facilities would be located; the precise locations would be determined upon detailed design. As shown on Figure 3, the proposed facilities would be located

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[3] Conduits are plastic protective tubes to protect the cables.

[4] Fluidized thermal backfill is specially designed to maximize the heat dissipation of the backfill.

outside of the two operable units[5] that were subject to hazardous materials investigation and remediation under the oversight of the California Department of Toxic Substances Control (DTSC) due to an historical manufactured gas plant. Above-ground components include two transformers, eight circuit breakers, two bus tie breakers, and two control houses. The transformers, which would be placed on concrete pads, would be approximately 30 feet wide, by 50 feet long, by 20 feet high. The control houses, which would contain controls for equipment, would be approximately 20 feet wide, by 50 feet long, by 20 feet high. The control houses would be equipped with an air conditioning unit for cooling and exterior lighting for safety. The circuit breakers and bus tie breakers would be approximately 8 feet high and would be located on concrete pads. Additional instrumentation meters would be added to monitor the flow of electricity on the transmission lines serving the city. These meters would be installed inside the existing control house and would not require any ground disturbance.

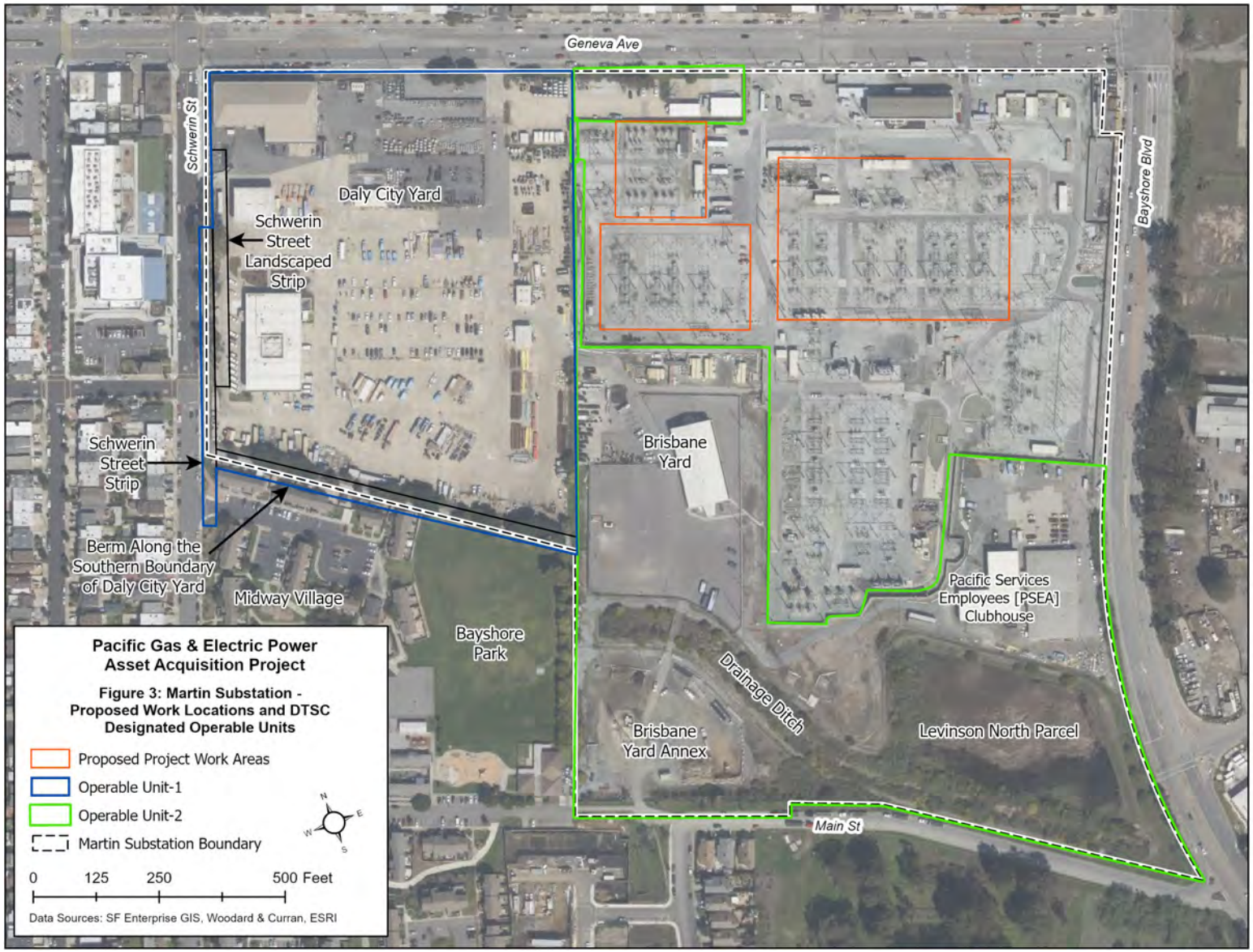
Table 2: Proposed Martin Substation Modifications

Component	Quantity	Maximum Excavation Width and Length (feet)	Maximum Excavation Depth (feet)
SFPUC ELECTRIC SYSTEM			
115 kV Concrete Control House (foundation)	1	Width: 20 Length: 50	8
115 kV cables (trench)	1	Width: 3 Length: 1,560	7
115 kV vaults (each)	24	Width: 7 Length: 11	10
115 kV bus tie breaker (each concrete pad)	2	Width: 10 Length: 10	4
PG&E ELECTRIC SYSTEM			
115 kV Concrete Control House (foundation)	1	Width: 20 Length: 50	8
115/12 kV transformers (each 2-foot thick concrete pad)	2	Width: 40 Length: 60	10
115/60 kV transformer connection cable (trench)	1	Width: 3 Length: 880	6
115/12 kV transformer connection cable (trench)	1	Width: 3 Length: 1,560	6
115 kV cables (trench)	1	Width: 3 Length: 1,560	7
115 kV vaults	24	7 x 11	10

[5] An operable unit is a portion of the remedial program for a site that, for technical or administrative reasons, can be addressed separately for investigation and remediation.

115 kV circuit breakers (each 2-foot thick concrete pad)	5	Width: 10 Length: 12	3
12 kV circuit breakers (each 2-foot thick concrete pad)	3	Width: 10 Length: 12	3

Figure 3: Martin Substation - Proposed Work Locations and DTSC Designated Operable Units



A.4.2.3 POTRERO SUBSTATION

At the Potrero Substation, three static synchronous compensator (STATCOM) units may be installed.[6] A STATCOM is a regulating device that provides voltage support and stability. The STATCOM units, located on concrete pads, would be approximately 10 feet wide, by 40 feet long, by 12 feet high, and would be located entirely in the switchyard area, south of Humboldt Street. If needed due to space constraints within the switchyard, the STATCOM units could be stacked atop one another (for a total height of approximately 40 feet). If stacking is determined to be necessary, the STATCOM units would be installed on a pile-supported foundation, consisting of approximately 24 14-inch-diameter piles installed up to 100 feet below ground surface. STATCOM units would be outfitted with a heating, venting, air conditioning (HVAC) system for cooling. The proposed modifications to Potrero Substation are listed in **Table 3**, below. The precise location of these units would be verified upon detailed design, but they would be located within the PG&E south switchyard outlined on **Figure 4**.

Table 3: Proposed Potrero Substation Modifications

Component	Quantity	Maximum Excavation Width and Length (feet)	Maximum Excavation Depth (feet)
Static Synchronous Compensator (STATCOM) (each 2-foot thick concrete pad)	3	Width: 20 Length: 50	6 (see Note)
STATCOM trench	1	Width: 3 Length: 500	7
STATCOM vaults	2	Width: 7 Length: 11	10

Note: Excavation depth assumes concrete pad foundation. If STATCOM units are stacked, a pile foundation consisting of approximately 24 piles to 100 feet would be installed.

Example photos of above-ground infrastructure (i.e., transformers, breakers, and an individual STATCOM unit) are included on **Figure 5.** All structures (i.e., the control houses and STATCOM units) would be equipped with exterior lighting for safety.

A.4.2.4 PLYMOUTH AND RANDOLPH SUBSTATIONS

In addition to new underground distribution lines described above in section A.4.2.1 for connections to the substations, underground power vaults would be installed at these substations. Power vault dimensions would be approximately 4.5 feet wide, 8.5 feet long, and 6 feet deep. The duct banks would be approximately 200 feet long at Plymouth substation and 115 feet long at Randolph substation.

[6] The STATCOM units would be required only under certain operating configurations which would be the subject of future discussions with PG&E.

Figure 4: Potrero Substation – Proposed Work Location

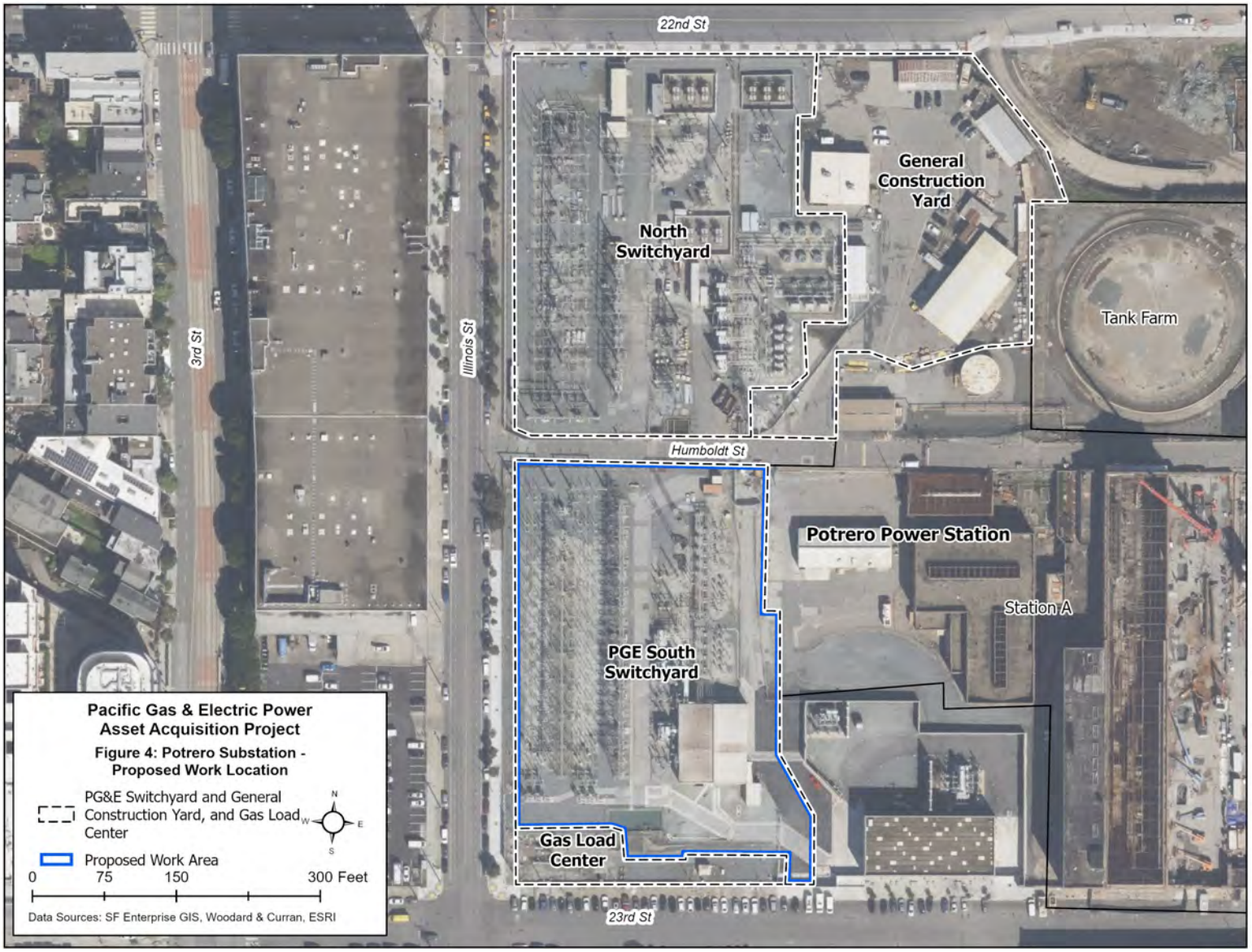
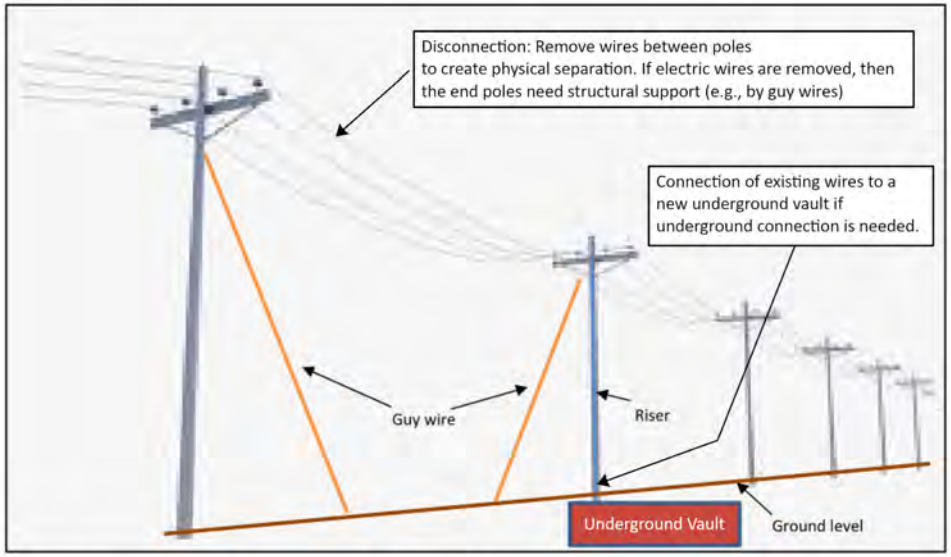


Figure 5: Examples of Proposed Above-Ground Infrastructure

Example of Transformers (on left) and Circuit/Tie Breakers (on right) located on concrete pads. Transformers approximately 30 feet by 50 feet; circuit/tie breakers approximately 10 feet by 12 feet.

Example STATCOM unit, located on a concrete pad (approximately 10 by 40 feet).



Disconnections of electric wires on existing poles (poles approximately 40 feet tall).

Pacific Gas & Electric Power Asset Acquisition Project

Figure 5: Examples of Proposed Above-Ground Infrastructure

A.4.3 Distribution System Separation Work

The border between San Francisco and San Mateo counties is not split along a main street; blocks weave in and out of the border and are serviced by the nearest distribution line, regardless of the jurisdiction (i.e., some San Francisco streets are supplied by distribution lines in Daly City and vice versa). To ensure that there are two distinct electric systems, such that San Francisco customers are serviced by SFPUC distribution lines and PG&E's San Mateo County customers are served by PG&E-owned distribution lines south of the county border, existing electric lines at certain locations would need to be disconnected, and reconnected to other existing distribution lines within the same jurisdiction (if present). In some locations, short segments of new distribution lines in the appropriate jurisdictions would be installed to facilitate such connections. The new segments would be either connected by overhead wires on existing poles or enclosed in new duct banks within city streets and sidewalks. This work is referred to as the "distribution separation work."

Some of the connections and disconnections of existing electric lines would be performed on existing, overhead electric poles. In this case, disconnections would involve the removal of existing wires between existing electric poles to create a physical separation. If removal of a line segment results in a line termination at an existing pole, the resultant "end pole" would be structurally supported, such as by using guy wires.[7] Connections could consist of stringing new electric wires between existing electric poles or installing a riser (conduit) from an underground vault to the electric pole. Figure 5 shows an example if guy wires and / or risers to underground vaults are needed. The electrical circuit would be separated into two circuits. A terminal transformer would be installed on each pole to provide local service where needed. Alternatively, the circuit would travel down the terminal pole into a separate new vault underground. The circuit would then be routed through a trench to provide local service where needed. The individual connection and disconnection points are shown on **Figure 6**; precise locations would be verified on the basis of specific field conditions. For connection and disconnection points (those not shown with an associated proposed duct bank segment), additional trenching may be required to separate the electric systems. While not shown in the figures or the tables below, it is assumed that up to 100 feet of duct bank trenching may be needed for each standalone connection and disconnection point; there are approximately 35 standalone points. Trench dimensions would be similar to those specified for the individual distribution line alignments above.

Tables 4 through **8** show the new distribution lines that would be constructed using either overhead lines or within duct banks at the county border area in San Francisco, Daly City, and Brisbane. The typical trench dimensions would be approximately 4.5 feet wide and 5 feet deep. Power vaults would also be needed at the end of each segment and every 400 feet for each individual alignment. Based on the length of distribution line alignments shown below in Tables 4 through 8, and conservatively assuming all of these are located within duct banks, approximately 58 vaults would be needed.

For the distribution separation work, approximately 5 miles of distribution lines (either overhead lines or within duct banks) would be installed on public rights-of-way (primarily streets), other public lands (e.g., landscaped areas), or private property (e.g., substations, parking lots, or private roads). This distance includes the approximate 4.2 miles of distribution lines for the alignments shown in Tables 4 through 8

[7] A guy wire is a tensioned cabled designed to add stability to a free-standing structure.

below and the estimated 100 feet of distribution line for all standalone connection and disconnection points on Figure 6.

Table 4: Distribution Line Alignment in the Olympic Club Area

Segment	Start	End	Approximate Distance (feet)
Wilshire Avenue	Wilshire Avenue	El Portal Way	1,350
El Portal Way	Wilshire Avenue	El Portal Way	290
Unnamed path	El Portal Way	Lake Merced Blvd	800
Lake Merced Blvd	No name path	Entrance of Olympic Club	680
Olympic Club driveway	Lake Merced Blvd	Clubhouse	3,700
Approximate Total Distance (feet)			**6,820**
Approximate Total Distance (miles)			**1.3**

Note: Most of the distribution line alignment in the Olympic Club area is located unincorporated San Mateo County.

Table 5: Distribution Line Alignment in the Interstate 280 Area

Segment	Start	End	Approximate Distance (feet)
Santa Barbara Avenue	Intersection with Head Street	Single-family residential	275
Head Street	Shakespeare Street	Single-family residential	95
Shakespeare Street	De Long Street	Single-family residential	115
De Long Street	Santa Cruz Avenue	Single-family residential; BART Tracks	305
Santa Cruz Avenue	Santa Cruz Avenue	Single-family residential	350
Approximate Total Distance (feet)			**1,140**
Approximate Total Distance (miles)			**0.2**

Note: All segments are in San Francisco.

Table 6: Distribution Line Alignment in the Mission Street Area

Segment	Start	End	Approximate Distance (feet)
Shakespeare Street	Shakespeare Street	Intersection with Rhine Street	150
Rhine Street	Intersection with Shakespeare Street	Rhine Street	125
Bepler Street	Bepler Street	Intersection with Mission Street/ San Jose Avenue	400
San Jose Avenue / Mission Blvd	Bepler Street	Wellington Avenue	145
Wellington Avenue	Intersection with Mission/San Jose Avenue	Wellington Avenue	170
Crocker Avenue	Irvington Street	Webster Street	470
Wilson Street	Wilson Street	Intersection with Mission Street	315
Goethe Street	Goethe Street	Intersection with Goethe Street	400
Mission Street	Wilson Street	Goethe Street	300
Rice Street	Rice Street	Intersection with Mission Street	300
Templeton Avenue	Templeton	Intersection with Mission Street	67
Mission Street	Rice Street	Templeton Avenue	390
Approximate Total Distance (feet)			**3,232**
Approximate Total Distance (miles)			**0.6**

Note: All segments, except small portions on Shakespeare Street and Rhine Street are in Daly City.

Table 7: Distribution Line Alignment in the Crocker, Crocker Amazon, Southern Hills and Bayshore Heights Area

Segment	Start	End	Approximate Distance (feet)
San Antonio Circle	San Antonio Circle	Mission Hills Drive	200
Mission Hills Drive	San Antonio Circle	Pope Street	95
Pope Street	Missions Hills Drive	Bellevue Avenue	390
Bellevue Avenue	Pope Street	South Hill Boulevard	1,260
Baltimore Way	Baltimore Way	Intersection with Cordova	1,000
South Hills Blvd	Intersection with Chicago Way	Intersection with Prague Street	650
Prague Street	Intersection with Geneva Avenue	Intersection with South Hills Boulevard	250
Saddleback Drive	Saddleback Drive	Carter Street	1,821
Carter Street	Saddleback Drive	Cow Palace parking lot	460
Cow Palace parking lot	Carter Street	Middle of parking lot	560
Approximate Total Distance (feet)			**6,686**
Approximate Total Distance (miles)			**1.3**

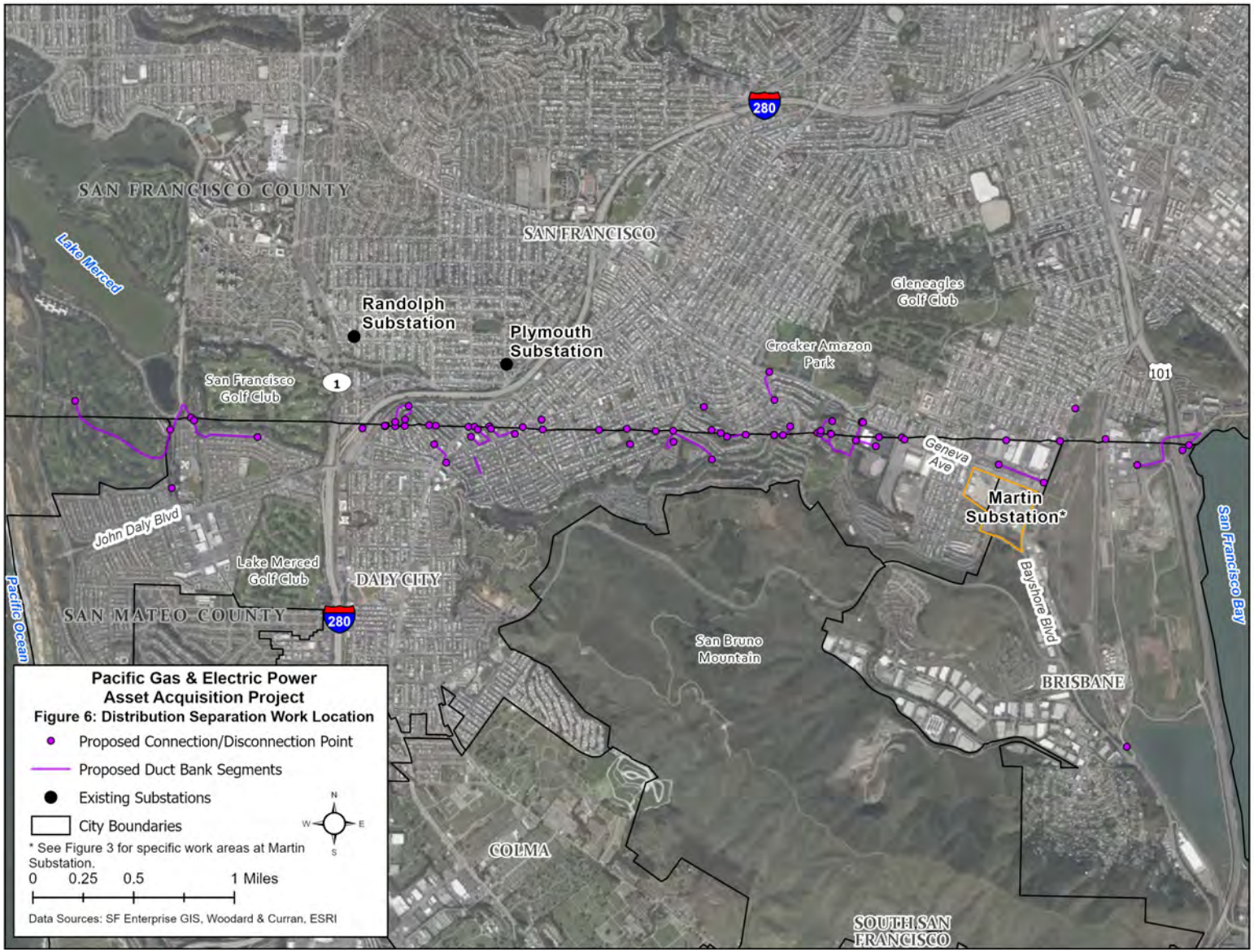
Note: Most segments, except Bellevue Avenue, Pope Street, Mission Hills Drive, and small portions on Baltimore Way and Saddleback Drive are in San Francisco.

Table 8: Distribution Line Alignment in the US-101 Area

Segment	Start	End	Approximate Distance (feet)
MacDonald Avenue	Allan Street	Bayshore Blvd	1,260
Beatty Avenue	Beatty Avenue	Alanna Way	700
Alanna Way	Beatty Avenue	Harney Way	1,570
Harney Way	Alanna Way	Harney Way	650
Approximate Total Distance (feet)			**4,180**
Approximate Total Distance (miles)			**0.8**

Note: Most segments, except portions of Alanna Way and Harney Way are in Daly City.

Figure 6: Distribution Separation Work Location



A.5. Project Construction

A.5.1 Underground Power Line Construction

The installation of the underground cable, duct banks, and vaults for the new distribution lines and the distribution separation work would primarily be completed using a cut-and-cover method (open trenching) along most of the alignment. As described above, average trench depth would be approximately 6 feet for the duct banks and would require shoring. Trench dimensions would vary as needed to avoid conflicts with existing below-grade infrastructure. Existing underground utilities within the proposed construction areas would be protected or relocated prior to excavation. Approximately every 400 feet along the trench, the installation of concrete vaults below grade would require a larger excavation.

Dewatering would be conducted using a pump to remove water from the trench. The water would be pumped into containment tanks and tested for turbidity and pH values as needed. If the water meets acceptable discharge standards, it would be discharged into the storm/sanitary sewer system. Otherwise, it would be disposed of in accordance with all applicable regulatory requirements.

Lane closures would be implemented during construction in streets. Lane closures and other street work would be consistent with the San Francisco Municipal Transportation Agency (SFMTA) "Regulations for Working in San Francisco Streets" ("Blue Book"). All road work within the public rights-of-way within Daly City and Brisbane would comply with local requirements (e.g., encroachment and excavation permit requirements).

Typically, a maximum open trench length of 100 to 400 feet on each city block would occur at any one time. During some construction periods, there may be more than one area of construction activity occurring simultaneously to complete overall construction more quickly. While multiple crews may be in operation at the same time, San Francisco Public Works (Public Works) and SFMTA procedures typically would specify a minimum two-block separation between work zones, although a smaller separation can be approved. Block separations would also be verified with other local jurisdictions (i.e., Daly City and Brisbane public works departments). Steel plating would be placed over trenches to maintain vehicular and pedestrian traffic across areas that are not under active construction. Traffic controls would also be implemented to direct local traffic safely around the work areas.

Following installation of duct banks, trenches and road pavement sections would be restored in compliance with local requirements. While the completed trench sections are being restored, additional trenching would be performed along the alignment. The excavated material would be used as backfill if suitable. When necessary, clean backfill would be imported to the project area. Any excess materials would be tested and disposed of in accordance with applicable requirements.

As part of the final construction activities, SFPUC would restore all removed curbs, curb ramps, gutters, and sidewalks, construct new accessible curb ramps, repave all removed or damaged paved surfaces, restore landscaping or vegetation as necessary (in compliance with Public Works or local standards), and clean the job site to preconstruction conditions. No street trees are planned to be removed, although trees may be trimmed, and shrubs may be removed.

A.5.2 Vault and Cable Installation

The vaults would typically be constructed of prefabricated, steel-reinforced concrete with varying inner dimensions depending on the electrical infrastructure located within the vault. The vaults would be designed to withstand heavy truck traffic. Vaults may include flexible connections (between the vault and conduits) to allow for movement during earthquakes. Installation of each vault would occur over a one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling and compaction of the backfill, and temporary repaving. Final paving would be done at the end of the project.

After installation of the conduits and the vaults, electric and communication cables would be pulled through the conduits within the duct banks

A.5.3 Trenchless Construction

Installation of duct banks beneath MUNI light rail line crossings would require horizontal directional drilling or jack and bore construction methods. Both of these methods require pits at both the launching and receiving ends of the bore. The pit dimensions would be approximately 40 feet long, 20 feet wide and 20 feet deep. At the receiving pit, a minimum rectangular construction access area approximately 100 feet long by 80 feet wide for equipment staging would be required. The actual construction would install a steel casing pipe under the rail line, followed by insertion of conduits within the steel casing pipe, exposed at both ends of the excavation. The conduits would then be extended in duct bank trenches as described elsewhere.

A.5.4 Substation Construction

Installation of equipment at Martin and Potrero substations would involve breaking up the concrete pavement, excavating the ground to the desired depth for foundations, pouring the concrete foundation pad, and installing above-ground equipment. Subsurface components (duct banks and vaults) would be installed in a similar manner as described above. If the STATCOM units at Potrero substation are needed and are stacked, then a deep foundation would be required. As described above, approximately 24 14-inch-diameter piles would be installed up to 100 feet below ground surface to support the units. The piles may be installed using impact pile driving or drilled methods.

Installation of duct banks at the Randolph and Plymouth substations, as described above, would involve heavy equipment for approximately one week. Additional connection work would also be needed.

A.5.5 Excavation and Truck Trips[8]

The total project excavation is estimated to be approximately 102,000 cubic yards. It is conservatively assumed that all of the distribution lines in Tables 4 through 8 would be installed in duct banks, and all of the soil excavated at the substations and half of the soil excavated for the duct banks and vaults could be contaminated and would be exported to a permitted landfill. In addition, there would be approximately 1,500 one-way vendor trips (750 round trips) (e.g., delivery of concrete, vaults, duct banks and conduits). This would represent a total of approximately 19,660 one-way truck trips (9,830 round trips) during

[8] The assumptions for the total excavation volume and number of truck trips are provided in Ramboll's April 15, 2021 Supplemental Data Memo, included in the Air Quality Technical Report (Appendix C).

construction, including disposal of soils and import of backfill. Truck trips would be centralized around Martin and Potrero substations, but also distributed across the portions of the city where work is proposed. Martin substation construction would average 7.3 one-way truck trips per day, Potrero substation would average 1.5 one-way truck trips per day, and the remaining truck trips would be distributed along the trenching activity at a rate of approximately 10 one-way truck trips per work-crew-day, or 176 one-way truck trips per 700-foot-long city block.

A.5.6 Dust Suppression

It is anticipated that water would be used for dust suppression along the construction corridor. The amount of water would vary each day depending on the length of the construction corridor, road surface conditions, weather conditions, including temperature and wind speed, and other site-specific conditions. Non-potable water must be used for soil compaction and dust control activities during project construction and demolition. The SFPUC operates a recycled water truck filling station at the Southeast Water Pollution Control Plant that provides recycled water for these activities.

A.5.7 Hazardous Materials Handling

Equipment, soil, and debris removed from the work area would either be recycled or disposed of according to the provisions of the San Francisco Construction and Demolition Debris Ordinance (chapter 14 of the San Francisco Environment code and chapter 13B of the San Francisco Building Code).

Because of known hazardous material contamination in the project area (at Martin and Potrero substations), construction workers must have appropriate OSHA hazardous waste operations training and personal protective equipment. In addition, all soils must be handled, stored and disposed of in accordance with all local, state, and federal requirements, as well as the requirements of any land use covenants executed for hazardous substances sites. Soils excavated within the Martin and Potrero substations would be tested for contaminants, and excavated spoils would be disposed of at a landfill licensed to accept hazardous wastes, if necessary. Hazardous materials would be transferred either by truck or rail to the nearest landfill that is licensed to accept the waste. Excavated sediments classified as hazardous waste could be trucked from the substations directly to an appropriate facility for disposal, or approximately 1 mile to the Port of San Francisco transfer facility on Cargo Way (at Pier 94), from which point it would be hauled by rail to an appropriate facility for disposal. The closest class I landfill (for hazardous waste) is in Kern County, approximately 215 miles from the project sites. Any sediment that is not classified as hazardous waste and not reused as backfill would be transported by truck to the Altamont Landfill in Livermore, California (non-hazardous waste, class II and III landfill). Debris that is not contaminated would be hauled to either the Recology Hay Road Landfill in Solano County, or to the Republic Corina Los Trancos (Ox Mountain) Landfill in Half Moon Bay, California.

A.5.8 Construction Duration, Workforce and Schedule

The project construction schedule would be subject to negotiations with PG&E. Construction would typically occur weekdays between 7 a.m. and 5 p.m. but could also extend to 8 p.m. depending on construction restrictions. For example, construction activity may be limited to between 9 a.m. and 3 p.m. because of commute hour restrictions. While not expected, weekend work could also be required.

It is assumed that the underground distribution infrastructure would be installed at a rate of approximately 40 feet per day per crew. At this rate, construction would be within 100 feet of any residence along the distribution line for less than one week and would take about 3 to 4 weeks per 700-foot-long city block. Similarly, the excavation and installation of duct bank connections at the Randolph and Plymouth substations would take about one week each; the remaining connection work within these substations (not involving heavy equipment) may take up to six months. Martin and Potrero substations improvements would be completed within approximately one year at each location. If pile installation is needed at the Potrero substation, pile driving would take approximately 12 days.

The total duration of construction would depend on the number of crews working concurrently, which would be confirmed as design work progresses. Work crews would vary between approximately five and nine members. If fewer crews were used, then work would be distributed over a longer timeline. If more crews were to work concurrently on the distribution work, the construction duration would be shorter. This initial study evaluates the following two construction scenarios:

Typical Construction Scenario:

Under the typical construction scenario, up to five crews would work concurrently in year one (one crew at each of the Martin and Potrero substations) and up to three crews would install the new distribution line and conduct the distribution separation work.[9] Subsequently, up to four crews would work concurrently to install the distribution line and conduct the distribution separation work at different locations. Under this scenario, construction would be completed in two years. The number of construction workers would range from 20 to 45.

Accelerated Construction Scenario:

Under the accelerated construction scenario, construction would be completed in one year, with up to 15 crews (one crew each for the Martin and Potrero substations) and 7 to 13 crews for the new distribution line and distribution separation work.[10] The number of construction workers would range from 35 to 135.

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9 The number of concurrent work crews in the typical construction scenario assumes a 50-mile hauling distance for the length of the import haul truck trips; an additional crew may be added if the hauling distance were 20 miles or less.

10 The number of concurrent crews in the accelerated construction scenario assumes up to 7 crews constructing the distribution line with a 50-mile import hauling distance and up to 13 crews with a 20-mile hauling distance.

A.5.9 Construction Equipment

The proposed project would require the following pieces of equipment:

- Saw-cutting machine
- Excavator
- Backhoes / Front-end Loader
- Drill rig
- Skid Loader
- Air Compressors
- Portable Generators
- Flatbed Trucks
- Impact or vibratory pile driver[11]
- Boring machine
- Water Tanks
- Rollers
- Work Crew Passenger vehicles
- Crane
- Paver
- Compactors
- Loaders
- Concrete Trucks

A.5.10 Site Access and Staging

Most of the underground power line construction would be restricted to within roadways. Construction equipment and materials would be staged within areas of the roadway including sidewalks and parking lanes. Work crew passenger vehicles may be parked on side streets or in other areas to minimize use of on-street parking spaces along the project alignment. Staging for work in the substations would occur entirely within the walled/fenced substations.

Access to residences, businesses, and emergency service providers would be maintained at all times, and every effort would be made to minimize impacts to roadway access. The SFPUC and the project construction contractor would coordinate with the SFMTA, the public works departments of Daly City and Brisbane, and other local transit agencies to minimize disruption and delay of traffic movement and transit service on the project streets.

A.5.11 SFPUC Standard Construction Measures

SFPUC has adopted standard construction measures, with the purpose of ensuring that environmentally responsible practices are applied to all SFPUC projects (excerpted below and included as **Appendix B**).[12] Because the measures apply to all SFPUC projects, including projects located within San Francisco and other urban areas as well as projects located in rural and natural areas, such as SFPUC watershed lands, the measures are necessarily broad. As such, the measures may be tailored to fit specific projects. Some measures may not apply in whole or in part to all projects. In addition, these measures may be superseded by more detailed project-specific mitigation measures and/or regulatory permit requirements. The standard construction measures, as well as any mitigation measures adopted as part of the CEQA review process, are required to be implemented pursuant to the construction contract specifications for all SFPUC projects. The

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11 As discussed in Section A.5.4, pile foundations would be required only at the Potrero substation if STATCOM units are determined to be necessary and also need to be stacked due to space constraints.

12 San Francisco Public Utilities Commission, *SFPUC Standard Construction Measures*, Memorandum from Harlan L. Kelly, Jr., general manager, to Michael Carlin, Juliet Ellis, Barbara Hale, Kathryn How, Tommy Moala, Steven Ritchie, and Eric Sandler, July 1, 2015. This reference and all other references in this initial study, unless otherwise noted, are available for review at: https://tinyurl.com/PGEAssetMND

applicability of the standard construction measures to the proposed project is considered under the related resource topic analyses.

The SFPUC would also conduct all construction activities in compliance with applicable regulations and ordinances. Relevant requirements would be included in the contract specifications issued for construction of the proposed project.

1. **Seismic and Geotechnical Studies.** All projects will prepare a characterization of the soil types and potential for liquefaction, subsidence, landslide, fault displacement, and other geological hazards at the project site and be engineered and designed as necessary to minimize risks related to safety and reliability due to such hazards. As necessary, geotechnical investigations will be performed.

2. **Air Quality.** All projects within San Francisco city limits will comply with the Construction Dust Control Ordinance. All projects outside the city will comply with applicable local and state dust control regulations. All projects within city limits will comply with the Clean Construction Ordinance. Projects outside city limits will comply with San Francisco or other applicable thresholds for health risks. All projects, both within and outside city limits, will comply with either San Francisco or other applicable thresholds for construction criteria air pollutants.

   To meet air quality thresholds, all projects (as necessary) will implement air quality controls that will be tailored to the project, such as high-tier engines; verified diesel emissions control strategies, such as diesel particulate filters; customized construction schedules and procedures; and low-emissions fuel.

3. **Water Quality.** All projects will implement erosion and sedimentation controls that will be tailored to the project, such as fiber rolls and/or gravel bags around storm drain inlets, silt fences, or other such measures to prevent discharges of sediment and other pollutants to storm drains and all surface waterways, such as San Francisco Bay, the Pacific Ocean, water supply reservoirs, wetlands, swales, and streams. As required, based on project location and size, a stormwater control plan (in most areas of San Francisco) or a stormwater pollution prevention plan (outside of San Francisco and in certain areas of San Francisco) will be prepared. If uncontaminated groundwater is encountered during excavation activities, it will be discharged in compliance with applicable water quality standards and discharge permit requirements.

4. **Traffic.** All projects will implement traffic control measures to maintain traffic and pedestrian circulation on streets affected by construction of the project. Traffic control measures may include, but not be limited to, using flaggers and/or construction warning signage; scheduling truck trips during non-peak hours to the extent feasible; maintaining access to driveways, private roads, and off-street commercial loading facilities by using steel trench plates or other such methods; and coordinating with local emergency responders to maintain emergency access. For projects in San Francisco, the measures will also, at a minimum, be consistent with the requirements of the San Francisco Municipal Transportation Agency's *Blue Book*. Any temporary rerouting of transit vehicles or relocation of transit facilities would be coordinated with the applicable transit agency, such as the San Francisco Municipal Transportation Agency. All projects will obtain encroachment permits from the applicable jurisdiction for work in public roadways.

5. **Noise.** All projects will comply with local noise ordinances for regulating construction noise. The SFPUC shall undertake measures to minimize noise disruptions at nearby neighbors and sensitive receptors during construction. These efforts could include using best available noise control technologies on equipment (i.e., mufflers, ducts, acoustically attenuating shields), locating stationary noise sources (i.e., pumps and generators) away from sensitive receptors, erecting temporary noise barriers, and other such measures.

6. **Hazardous Materials.** Where there is reason to believe that site soil or groundwater may contain hazardous materials, the SFPUC shall undertake an assessment of the site in accordance with applicable local requirements (e.g., Maher Ordinance) or use reasonable commercial standards (e.g., Phase I and Phase II assessments, as needed). If hazardous materials will be disturbed, the SFPUC shall prepare and implement a plan for treating, containing, or removing the hazardous materials in accordance with any applicable local, state, and federal regulations so as to avoid any adverse exposure to the material during and after construction. In addition, any unidentified hazardous materials encountered during construction will likewise be characterized and appropriately treated, contained, or removed to avoid any adverse exposure. Measures will also be implemented to prevent the release of hazardous materials used during construction, such as storing them pursuant to manufacturer recommendation, maintaining spill kits onsite, and containing any spills that occur to the extent safe and feasible, followed by collection and disposal in accordance with applicable laws. The SFPUC will report spills of reportable quantity to applicable agencies (e.g., the Governor's Office of Emergency Services).

7. **Biological Resources.** All project sites and the immediately surrounding area will be screened to determine whether biological resources may be affected by construction. A qualified biologist will carry out a survey of the project site, as appropriate, to note general resources and identify whether habitat for special-status species and/or migratory birds is present. In the event that further investigation is necessary, the SFPUC will comply with all local, state, and federal requirements for surveys, analysis, and the protection of biological resources (e.g., Migratory Bird Treaty Act, federal and state Endangered Species Acts, etc.). If necessary, measures will be implemented to protect biological resources, such as wildlife exclusionary fencing, work zone buffers, bird deterrents, monitoring by a qualified biologist, and other such measures. If tree removal is required, the SFPUC would comply with any applicable tree protection ordinance.

8. **Visual and Aesthetic Considerations.** All project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from public view where possible. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon project completion, project sites on SFPUC-owned lands will be returned to their general pre-project condition, including re-grading of the site and re-vegetation or re-paving of disturbed areas to an extent consistent with SFPUC's Integrated Vegetation Management Policy. However, where encroachment has occurred on SFPUC-owned lands, the encroaching features may not be restored if inconsistent with the SFPUC policies applicable to management of its property. Project sites on non-SFPUC land will be restored to their general pre-project condition so that the owner may return them to their prior use, unless otherwise arranged with the property owner.

9. **Cultural Resources.** All projects that will alter a building or structure, produce vibrations, or include soil disturbance will be screened to assess whether cultural resources are or may be present and therefore could be affected, as detailed below.

   Archaeological Resources. No archaeological review is required for a project that will not entail ground disturbance. Projects involving ground disturbance will undergo screening for archeological sensitivity, as described below, and implement, as applicable, SFPUC Standard Archaeological Measures I (Discovery), II (Monitoring), and III (Testing/Data Recovery). Standard Construction Measure I will be implemented on all projects involving ground disturbance. Implementation of Standard Archaeological Measures II and III will be based on the screening process described below for projects assessed as having the potential to encounter archaeological resources and/or project sites where an archaeological discovery occurs during construction.

   Projects involving ground disturbance will initially be screened to determine whether there is demonstrable evidence of prior ground disturbance at the project site to the maximum vertical and horizontal extent of the current project's planned disturbance. For projects where prior complete ground disturbance has occurred throughout areas of planned work, the SFPUC will provide evidence of the previous disturbance in the categorical exemption application, and no further archaeological screening will be required.

   For projects on previously undisturbed sites or sites where the depth/extent of prior ground disturbance cannot be documented, or the planned project-related ground disturbance will extend beyond the depth/extent of prior ground disturbance, additional screening will be carried out as detailed below. The additional screening will be conducted by the SFPUC's qualified archaeologist (i.e., meeting the Secretary of the Interior's Professional Qualifications Standards [36 Code of Federal Regulations 61]); if a consultant, the archaeologist will be selected in consultation with the San Francisco Planning Department's Environmental Review Officer (ERO) and meet the criteria or specialization required for the resource type, as identified by the ERO.

   a. The SFPUC's qualified archaeologist will conduct an archival review of the project site, including Environmental Planning's (EP's) archaeological geographical information system data and/or California Historical Resources Information System records as well as other archival sources, as appropriate. The qualified archaeologist will also conduct an archaeological field survey of the project site if, in the archaeologist's judgment, this is warranted by site conditions. Based on the results, the archaeologist will complete and submit to EP a preliminary archaeological checklist (version dated April 2015, to be amended in consultation with the ERO, as needed). This checklist will include recommendations regarding the need for archaeological testing as well as additional research and/or treatment measures, consistent with Archaeological Measures I, II, and III, which are to be implemented by the project to protect and/or treat significant archaeological resources identified as present within the site and potentially affected by the project.

   b. The EP archaeologist (for projects within the city) or the ERO's archaeological designee (for projects outside the city) will conduct a preliminary archaeological review of the preliminary archaeological checklist and other sources as warranted, concur with the checklist's recommendations, and/or amend the checklist in consultation with the SFPUC archaeologist

or archaeological consultant to require additional research, reports, or treatment measures as warranted, based on his/her professional opinion.

c. The SFPUC shall implement the preliminary archaeological checklist/preliminary archaeological review recommendations prior to and/or during project construction consistent with Standard Archaeological Measures I, II, and III, and consult with the EP archeologist in selecting an archaeological consultant, as needed, to implement these measures.

d. Ground-disturbing activities in archeologically sensitive areas, as identified through the above screening, will not begin until the required preconstruction archaeological measures of the preliminary archeological checklist/preliminary archaeological review (e.g., preparation of an archaeological monitoring plan, archaeological treatment plan, and/or an archaeological research design and data recovery plan) have been implemented.

Historic (Built Environment) Resources. For projects within the city that include activities with the potential for direct or indirect effects to historic buildings or structures, initial CEQA screening will include a review, for the project footprint and up to one parcel surrounding the footprint of CCSF's online planning map, all relevant survey data, preservation address files, and other pertinent sources for previously-identified, historically significant buildings and building and structures more than 45 years old that have not been previously evaluated. For projects outside of the City, initial CEQA screening will include a records search of EP's CCSF historical resources data, CHRIS, and other pertinent sources for historically significant or potentially significant buildings and structures older than 45 years.

For projects that would modify an existing building or structure that has been determined by EP as being a significant historical resource (i.e., appears eligible to qualify for the CRHR), or that would introduce new above-ground facilities in the vicinity of a significant historical resource, or that would affect previously unevaluated buildings or structures more than 45 years old, the SFPUC will retain a qualified architectural historian (defined as meeting the Secretary of the Interior's Professional Qualification standards and, if a consultant, also selected in consultation with the ERO) to conduct a historical resource evaluation (HRE). SFPUC will submit the project description and the HRE to the CCSF Planning Department Preservation Planner or to the ERO's-designated qualified architectural historian to assess potential effects. Where the potential for the project to have adverse effects on historic buildings or structures is identified, the CCSF Planning Department Preservation Planner or the ERO's designee will consult with SFPUC to determine if the project can be conducted as planned or if the project design can be revised to avoid the significant impact, and will comply with applicable procedures set forth in Historic Architectural Resource Measure I. If these options are not feasible, the project will need to undergo further review with EP and mitigation may be required. If so, the project would not qualify for a Categorical Exemption from CEQA review.

Where construction will take place in proximity to a building or structure identified as a significant historical resource but would not otherwise directly affect it, the SFPUC will implement protective measures, such as but not limited to, the erection of temporary construction barriers to ensure that inadvertent impacts to such buildings or structures are avoided.

A.6. Operations and Maintenance

The SFPUC would be responsible for the continued operations and maintenance of the acquired assets and new infrastructure in general accordance with the California Public Utilities Commission's standards for the safe and reliable operation of the substation, overhead and underground electric and communications facilities.

Operations and maintenance of the system would involve routine inspections; meter readings; periodic testing, as-needed repairs, and replacement of existing equipment in accordance with prudent utility practice and manufacturers' recommendations during regular maintenance cycles. All distribution system facilities (overhead, underground and substations) would be inspected and maintained in accordance with the California Public Utilities Commission guidelines and general orders (e.g., General Orders 165 and 174 for inspecting overhead and underground facilities, and substations, respectively). These are the same guidelines applicable to PG&E's existing operations. Therefore, this initial study assumes that future operation and maintenance of the city's electrical transmission and distribution systems by the SFPUC would remain substantially the same as existing operation and maintenance practices by PG&E. This initial study evaluates the operations and maintenance of the proposed new infrastructure described above in section A.4.

The SFPUC may consider long-term capital improvement programs such as modernization of the electrical system using Smartgrid technologies. This initial study does not address any capital improvement projects other than those described above. Any capital improvement projects identified in the future would be subject to additional project-specific CEQA review prior to approval.

A.6.1 Operating Hours and Workforce

The proposed electrical system assets would operate 24 hours per day, seven days a week, similar to existing operations. The SFPUC anticipates approximately 200 new employees may be hired for administration, operation and maintenance of the electrical system. Administrative employees (approximately 150 individuals) would be located at the SFPUC headquarters; field personnel would report to the SFPUC operations center at Pier 23.

A.6.2 Energy Use and Supply

The proposed project would separate the electrical distribution system territories served by PG&E and the SFPUC. The total energy delivered to serve the load in San Francisco would not change as a result of the project.

A.7. Regulatory Actions and Approvals

This initial study is intended to provide the information and environmental analysis necessary to assist the public agency decision-makers in considering the approvals necessary for the planning, development, construction, operations, and maintenance of the proposed project. The permits and approvals anticipated to be required from federal, state, and local agencies are listed below. The project could be subject to various local regulations; encroachment permits from Caltrans, San Mateo County, and/or various local jurisdictions could be required. However, because California Government Code section 53090 et seq.

provides that the SFPUC receive intergovernmental immunity from the zoning and building laws of other cities and counties for its lands, local regulations may not be applicable to the SFPUC. The SFPUC would also obtain any other regulatory approvals, as required by law. SFPUC would acquire property rights as needed for the construction, installation, operation, and maintenance of proposed infrastructure on public land or private lands.

A.7.1 Federal Actions and Approvals

- Approval from the Federal Energy Regulatory Commission for transfer of utility assets

A.7.2 State Actions and Approvals

- California Public Utilities Commission
    - Approval for transfer of utility assets
- Regional Water Quality Control Board, San Francisco Bay Region
    - Authorization under section 401 combined Clean Water Act (water quality certification and waste discharge requirements)
    - Construction general permit and stormwater pollution prevention plan, if more than 1 acre of land is disturbed in areas outside of the combined sewer system (i.e., the separate sewer area)
    - Approval of soil management plan and health and safety plan for excavation at the PG&E Potrero Power Plant
- California Department of Toxic Substances Control
    - Approval of a soil management plan and health and safety plan and for excavation at PG&E Martin Service Center
- Caltrans
    - Encroachment permits, access permits
- Bay Area Air Quality Management District
    - Approval of a dust mitigation plan to address naturally-occurring asbestos

A.7.3 Local Actions and Approvals

- San Francisco Public Utilities Commission
    - Adoption of CEQA findings and mitigation monitoring and reporting program
    - Approval of the proposed project
- Board of Supervisors
    - Adoption of the CEQA findings and mitigation monitoring and reporting program adopted by the SFPUC

    - Adoption of an ordinance to authorize the issuance of revenue bonds
    - Approval of real estate rights transfer
- San Mateo County Public Works Department, Cities of Brisbane and Daly City
    - Encroachment permits
- Other City Departments
    - SFPUC will consult/coordinate with San Francisco departments, including without limitation San Francisco Public Works, Department of Building Inspection, Department of Public Health, and the Municipal Transportation Agency, to ensure that soil disturbance and site mitigation, street and sidewalk improvements, on-street parking modifications, dust control, noise control, and building construction complies with substantive requirements of applicable local laws.

B. PROJECT SETTING

B.1. Land Uses in Vicinity

Construction for the project would extend through various neighborhoods in the cities of San Francisco, Daly City, and Brisbane. Land uses in these neighborhoods include residential, commercial, industrial, and public uses. Parcels in the affected areas are zoned as follows:

- San Francisco: Public, Residential, House (RH-1, RH-2), Residential, Mixed (RM-1), Residential, Commercial (RC-3), Neighborhood Commercial (NCD, NC-1 and NC-5), and Industrial (M-1 and M-2). Both Randolph and Plymouth substations are zoned NC-1. Potrero Substation is zoned M-2.
- Daly City: Commercial (C-1); Residential (R-1, R-2), and Planned Development (PD).
- Brisbane: Commercial (C-1 and C-3) and Industrial (M-1). The Martin Substation is zoned M-1.
- San Mateo County: Resource Management-Coastal Zone (RM-CZ/CD) and Residential Estates District/Residential Density District 9 (R-E/S-9).

Parks located adjacent to or in proximity to proposed distribution lines are listed below:

- San Francisco: Crocker Amazon Playground, Cayuga Park, Brotherhood Way Open Space, Merced Heights Playground, Broderick Terry Duel Landmark Park, Lincoln Park
- Daly City: Westlake Park, Mission Hills Park

Fire stations located within 0.25 miles of proposed work areas are listed below:

- San Francisco Fire Department Station 33, 8 Capitol Avenue, San Francisco
- San Francisco Fire Department Station 43, 720 Moscow Street, San Francisco
- North County Fire Authority Station 91, 151 Lake Merced Boulevard, Daly City
- North County Fire Authority Station 92, 18 Bepler Street, Daly City
- Brisbane Fire Department, 3445 Bayshore Boulevard, Brisbane

One police station is located within 0.25 miles of the proposed work areas, listed below:

- Brisbane Police Department, 147 Valley Drive, Brisbane

There are no hospitals within 0.25 miles of the proposed work areas.

Schools within 0.25 miles of the project sites are listed in **Table 9.**

Table 9: Schools within 0.25 Miles of the Project Sites

Name	Address
SAN FRANCISCO	
Living Hope Christian School	1209 Geneva Avenue
Pomeroy Recreation and Rehabilitation Center	207 Skyline Boulevard
Saint Thomas More	50 Thomas More Way
Epiphany Elementary School	600 Italy Avenue
Our Lady of the Visitacion School	785 Sunnydale Avenue
Balboa High School	1000 Cayuga Avenue
John McLaren Early Education School	2055 Sunnydale Avenue
James Denman Middle School / Leadership Charter High	241 Oneida Avenue
Jose Ortega Elementary School	400 Sargent Street
Sheridan Elementary School / Preschool	431 Capitol Avenue
Longfellow Elementary School	755 Morse Street
Guadalupe Elementary School	859 Prague Street
Mt. Vernon Christian Academy	106 Broad Street
Friends of Potrero Hill Nursery School	1060 Tennessee Street
DALY CITY	
Bayshore Elementary School	155 Oriente Street
George Washington Elementary School	251 Whittier Street
Panorama Elementary school	25 Bellevue Avenue

B.2 Cumulative Context

CEQA Guidelines section 15130(b)(1) indicates that a cumulative impact analysis should be based on either (1) a list of past, present, and reasonably foreseeable probable future projects producing closely related impacts that could combine with those of a project, or (2) a summary of projections contained in a general plan or related planning document. This analysis employs both the list-based and projections-based approaches, depending on which approach best suits the resource topic being analyzed. The following factors were used to determine an appropriate list of individual projects to be considered in this cumulative analysis:

- **Similar Environmental Impacts**. A relevant project contributes to effects on resources that are also affected by the project. A relevant future project is defined as one that is "reasonably foreseeable," such as a project for which an application has been filed with the approving agency, or whose funding has been approved.

- **Geographic Scope and Location**. A relevant project is one in the geographic area where effects could combine. The geographic scope varies on a resource-by-resource basis. For example, the geographic scope for evaluating cumulative effects on air quality consists of the affected air basin.
- **Timing and Duration of Implementation**. Effects associated with activities for a relevant project (e.g., short-term construction or long-term operations) would likely coincide with the related effects of the project.

The proposed project, in combination with the cumulative projects in the vicinity of the proposed project, could result in cumulative impacts. **Table 10** lists these cumulative projects, which were identified based on the above-referenced factors, that may be considered in determining cumulative environmental effects that are more localized. Refer to **Figure 7** for the locations of the cumulative projects.

Figure 7: Cumulative Projects

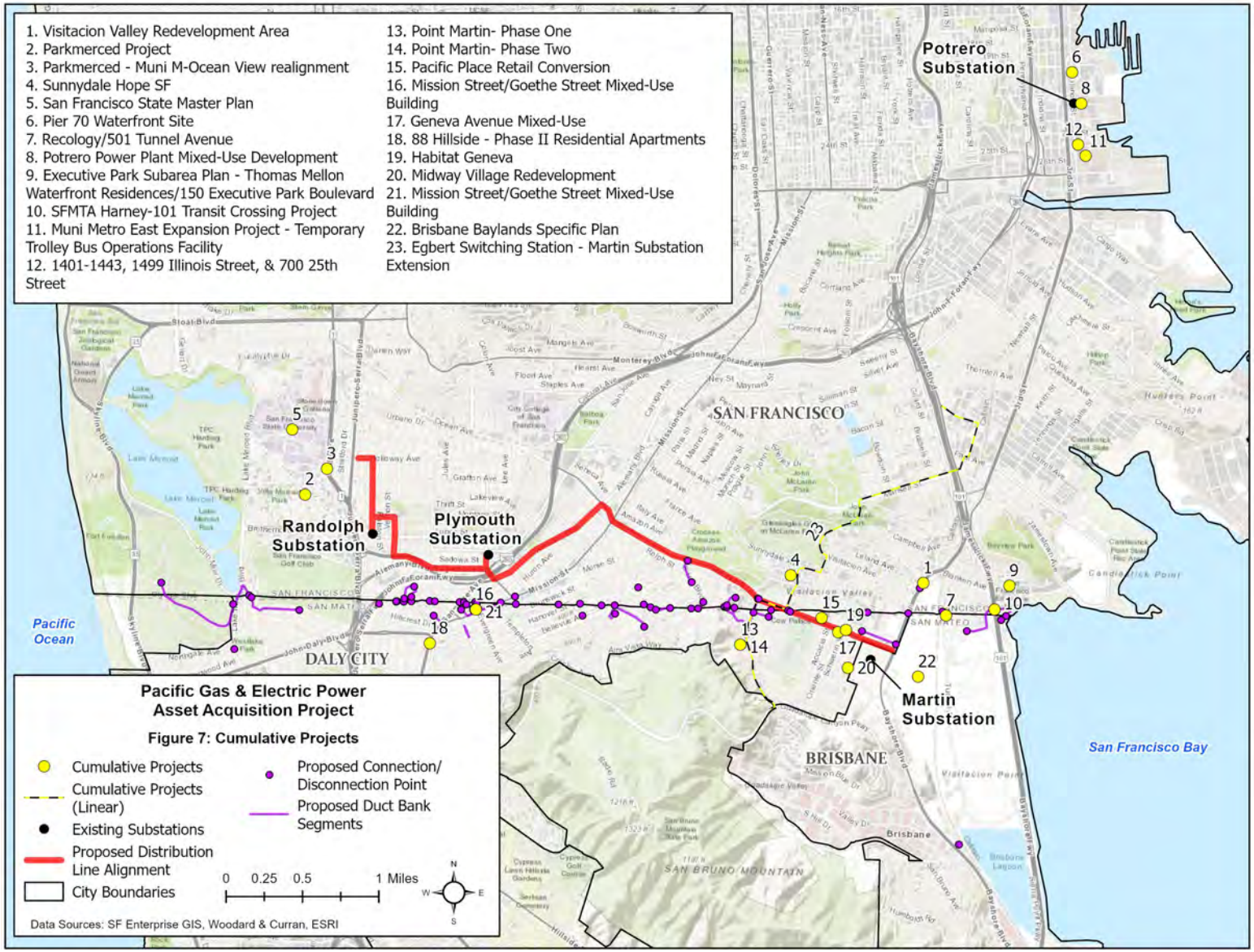

Table 10: Cumulative Projects within Approximately One Quarter Mile of Project Areas

Project No. on Map	Project Name (Jurisdiction)	Project Description	Status/ Estimated Construction Schedule
1	Visitacion Valley Redevelopment Area (San Francisco)	The Visitacion Valley Redevelopment Area Project is a 46-acre area in the Visitacion Valley neighborhood, comprising approximately 124 parcels. The Visitacion Valley project area includes the former Schlage Lock industrial site, located at the southern border of San Francisco, and the properties fronting Bayshore Boulevard and the Visitacion Valley neighborhood's commercial corridor of Leland Avenue. The project involves the demolition of the majority of the existing vacant buildings on the former Schlage Lock site, environmental remediation of the site, and the construction of a mixed-use residential (1,679 dwelling units), retail and office development (18,000 gross square feet).	2020 through 2024
2	Parkmerced Project (San Francisco)	The Parkmerced Project will add about 5,600 new residential units to the 152-acre site's existing 3,221 housing units. It will also provide new commercial and retail services, and open space. The Parkmerced project area is located in the southwestern area of San Francisco, bounded roughly by San Francisco State University to the north, Brotherhood Way to the south, 19th Avenue/Junipero Serra Boulevard to the east, and Lake Merced Boulevard to the west.	2018 through 2025
3	Parkmerced - Muni M-Ocean View realignment (San Francisco)	Realignment of M-Ocean View light rail line consistent with Parkmerced Development Agreement requirements.	Planning stage
4	Sunnydale Hope SF Master Plan (San Francisco)	The Sunnydale Hope SF project would demolish the existing Sunnydale-Velasco public housing complexes and construct replacement housing, new market rate housing, infrastructure, open space, and community amenities. The proposed master plan would result in demolition of 785 existing residential units, and development of 1,700 residential units. The master plan also includes all new streets, utilities, and infrastructure, as well as 3.5 acres of new open spaces and approximately 60,000 square feet of new neighborhood-serving retail and community spaces.	2017 through 2033
5	San Francisco State Master Plan[1] (California State University)	San Francisco State University seeks to update its campus master plan.	Planning stage

Project No. on Map	Project Name (Jurisdiction)	Project Description	Status/ Estimated Construction Schedule
6	Pier 70 Mixed Use District (San Francisco)	The Pier 70 Mixed Use District project involves the development of a 28-acre waterfront site into a mixed-use development, including parks, roads, and infrastructure. Residential development will range from 1,000 to 2,000 new dwelling units. Commercial office space will range from 900,000 to 1,810,000 million gross square feet. Retail and arts space will comprise up to 370,000 gross square feet.	2018 through 2028
7	Recology/501 Tunnel Avenue (San Francisco and Brisbane)	Recology is proposing physical and operational modifications to its 501 Tunnel Avenue campus to consolidate and streamline its regional operations. The proposed project would demolish or repurpose some existing buildings and structures, construct seven new buildings, construct new employee and fleet vehicle/equipment storage surface parking areas, and reconfigure the campus layout. On the San Francisco portion of the site, the proposed project would add a new office building/meeting hall (55,597 gsf), arts building (7,800 gsf), employee/visitor parking garage (116,700 gsf), construction and demolition facility (71,200 gsf), and construction and demolition facility support office (4,000 gsf). On the Brisbane portion of the project site, the proposed project would add a new vehicle maintenance facility (67,000 gsf) and a new weld shop/steam rack facility (13,600 gsf). Recology's regional office, fleet maintenance, and fleet storage operations, currently at 250 Executive Park Boulevard and 900 7th Street, would be relocated to and consolidated on the campus.	2021 through 2024
8	Potrero Power Plant Mixed-Use Development (San Francisco)	The Potrero Power Plant project would redevelop an approximately 29-acre site, including: approximately 2,400 dwelling units; approximately 6 acres of open space, including both passive and active recreation areas, a playground, and waterfront access; 1.2 to 1.9 million gross square feet of commercial uses, which could include office, research and development/life science, retail, hotel, and production/distribution/repair (i.e. light industrial) uses; approximately 100,000 gross square feet of community facilities; approximately 925,000 gross square feet of parking; transportation and circulation improvements, shoreline improvements, and utilities infrastructure improvements.	2020 through 2034

Project No. on Map	Project Name (Jurisdiction)	Project Description	Status/ Estimated Construction Schedule
9	Executive Park Subarea Plan - Thomas Mellon Waterfront Residences/150 Executive Park Boulevard (San Francisco)	The Executive Park Amended Subarea Plan approved in 2011 provides for the transition of an existing office park development within a 14.5-acre site to a primarily residential area with approximately 1,600 residential units and about 73,200 gross square feet of retail, comprised of two development projects. One of the projects, the Thomas Mellon Waterfront Residences project, involves demolishing an existing office building and surface parking lot and constructing five residential buildings, two below grade parking structures, publicly accessible open spaces, new streets, alleyways, and pedestrian walkways. The entire development contains 585 residential units, 346 units with one bedroom and 239 with two or more bedrooms. The total residential area is 752,746 gross square feet, with an additional 9,845 square feet of retail. The total project area is 1,068,891 gross square feet. Development of the second project included in the Executive Park Subarea Plan is currently on hold.	Entitlements approved
10	SFMTA Harney-101 Transit Crossing Project[2]	The Harney-101 Transit Crossing Project would provide undercrossing improvements at Alana Way underneath Highway 101, as well as on nearby streets. Overall potential improvements could include: intersection improvements to the Alana/ Harney/ Thomas Mellon Intersection, widening of Harney Way, addition of sidewalk and bike path to Highway 101 undercrossing, and Beatty Avenue street improvements.	Planning stage
11	Muni Metro East Expansion Project - Temporary Trolley Bus Operations Facility[2] (San Francisco)	SFMTA'S Muni Metro East expansion project at 601 25th Street includes the removal of contaminated soil, soil compaction, utility infrastructure installation, and paving of the existing four eastern acres of the site. The existing construction staging area would be converted to transit vehicle storage (up to 103 60-foot trolley buses, or 143 40-foot trolley buses), transit vehicle wash station, three ancillary temporary trailers and one mobile security shack, and landscaping. The project also includes improved perimeter fencing with powered gates and pedestrian access, site lighting, a public-address system, and simplified traction power/overhead catenary systems.	Planning stage
12	1401-1443, 1499 Illinois Street, & 700 25th Street (San Francisco)	Demolition of 7 existing Production, Distribution and Repair (PDR)-zoned buildings to clear the site for the construction of a new, site wide, PDR Building. The new building would be 3 levels, at 40 feet tall, with roof top parking. In addition to PDR, the project will have 2,500 square feet of new retail at the corner of Illinois and 24th street.	Under review
13	Point Martin- Phase One[3] (Daly City)	Construction of 16 detached homes on 1.9-acre lot at Steve Courter Way and Martin Street.	All entitlements approved

Project No. on Map	Project Name (Jurisdiction)	Project Description	Status/ Estimated Construction Schedule
14	Point Martin- Phase Two[3] (Daly City)	Construction of 117 detached homes on 8.3-acre lot at Steve Courter Way and Martin Street.	All entitlements approved; in plan check
15	Pacific Place Retail Conversion[3] (Daly City)	Construction of 7 condominiums on a 1-acre lot at 2665 Geneva Avenue.	All entitlements approved
16	Mission Street/Goethe Street Mixed-Use Building[3] (Daly City)	Construction of a 36-unit apartment building on a 0.25-acre lot at 6098 Mission Street.	All entitlements approved
17	Geneva Avenue Mixed-Use[3] (Daly City)	Construction of a mixed-use 4-unit apartment building (addition to existing building) with 778 square feet of commercial use on a 0.23-acre lot at 2960 Geneva Avenue.	Application incomplete
18	88 Hillside - Phase II Residential Apartments[3] (Daly City)	Construction of a 167-unit apartment building on a 0.36-acre lot at 6401 Mission Street.	Application incomplete
19	Habitat Geneva[3] (Daly City)	Construction of 6 attached townhomes on a 0.14-acre lot at 3001 Geneva Avenue.	All entitlements approved
20	Midway Village Redevelopment[3] (Daly City)	Construction of a 555-unit apartment building on a 15-acre lot at 45 Midway Drive.	Application incomplete
21	Mission Street/ Goethe Street Mixed-Use Building[3] (Daly City)	Construction of a 1,568 square-foot mixed-use retail building on a 0.25-acre lot at 6098 Mission Street.	All entitlements approved
22	Brisbane Baylands Specific Plan[4] (Brisbane)	Brisbane Baylands Specific Plan proposes development of up to 2,200 residential units and 7 million square feet of commercial use. The project site comprises approximately 540 acres and is bounded on the north by the City and County of San Francisco, on the east by the US 101 freeway, on the west and south by Bayshore Boulevard. Buildout would occur over a 30-year period and involve four distinct activities: demolition and deconstruction, landfill closure and site remediation of the former railyard area; grading for development; construction of proposed uses and related infrastructure.	Notice of Preparation of an Environmental Impact Report (EIR) published on February 20, 2020.

Project No. on Map	Project Name (Jurisdiction)	Project Description	Status/ Estimated Construction Schedule
23	Egbert Switching Station - Martin Substation Extension Project (San Francisco, Daly City, Brisbane)[5]	The project primarily consists of construction, operation, and maintenance of a new 230-kilovolt (kV) switching station in the City and County of San Francisco that would be connected to the local 230 kV system by reconfiguring two existing, underground, single-circuit 230 kV transmission lines located in the City and County of San Francisco, the City of Daly City, and the City of Brisbane. The project would also provide an alternative 230 kV transmission path to serve customers in the City and County of San Francisco in the event that the Martin Substation becomes inoperable due to an extreme event. The project includes a transmission line across Geneva Avenue near the Martin substation.	Final EIR issued on December 23, 2019 and Notice of Determination issued on June 25, 2020. Construction schedule was not specified.

Sources:

Project information without noted sources was obtained from the San Francisco Planning Department's permit tracking database.

1 Future State 2035 - Campus Master Plan Update, San Francisco State University, http://www.futuresfstate.com/, accessed February 24, 2020.

2 San Francisco Municipal Transit Authority, Harney-101 Transit Crossing Project website, San Francisco Municipal Transit Authority, https://www.sfmta.com/projects/harney-101-transit-crossing-project, accessed on February 25, 2020; Muni Metro East Expansion Project website, https://www.sfmta.com/projects/muni-subway-expansion-project. Accessed on February 24, 2021.

3 Current projects list, Daly City Planning Division, https://www.dalycity.org/DocumentCenter/View/3396/Current-Project-List-Updated-01-01-20-PDF?bidId=, accessed February 17, 2021.

4 Brisbane Baylands Specific Plan, Notice of Preparation of an Environmental Impact Report, dated February 20, 2020, http://www.brisbaneca.org/sites/default/files/BaylandsNOP2-20-2020.pdf, accessed February 17, 2021

5 California Public Utilities Commission. 2020. Notice of Determination, Pacific Gas & Electric Egbert Switching Station (Martin Substation Expansion) Project, SCH#2018112046. July 13. https://www.cpuc.ca.gov/environment/info/dudek/egbert/Egber_NOD.pdf, accessed February 17, 2021.

C. COMPATIBILITY WITH EXISTING ZONING AND PLANS

	Applicable	*Not Applicable*
Discuss any variances, special authorizations, or changes proposed to the planning code or zoning map, if applicable.	☐	☒
Discuss any conflicts with any adopted plans and goals of the city or region, if applicable.	☐	☒
Discuss any approvals and/or permits from city departments, other than the planning department or the department of building inspection, or from regional, state, or federal agencies.	☒	☐

This section provides a general description of land use plans and policies that apply to the proposed project and discusses any potential inconsistencies. Project consistency with a particular plan is decided at the time of project approval by the agency charged with that determination. Land use plans typically contain numerous policies that emphasize differing legislative goals; an interpretation of consistency requires decision makers to balance the relevant policies. The board or commission responsible for implementing the plan or policy determines the meaning of the policy as well as whether an individual project satisfies the policy at the time the board considers approval of the project.

The proposed project, the majority of which is located roughly along the San Francisco/San Mateo county line, seeks to acquire substantially all of the electricity distribution and transmission system within San Francisco city limits and certain other assets that are needed to provide reliable electricity service to customers in San Francisco. The proposed work associated with physically separating PG&E's electricity grid from the grid within San Francisco would occur largely within public rights-of-way (city streets) within a variety of land uses, although some work would occur within four existing substation yards that are zoned for industrial uses.

No variances, special authorizations, or changes to the planning code or zoning map are proposed as part of this project; therefore, these issues are not applicable and not discussed further.

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

C.1.1 San Francisco General Plan

The *San Francisco General Plan* (general plan)[13] provides general policies and objectives to guide land use decisions in the city. Any conflicts between the proposed project and policies that relate to physical environmental issues are discussed in Section E, Evaluation of Environmental Effects. The compatibility of the proposed project with general plan policies that do not relate to physical environmental issues would be considered by decision-makers as part of their decision to approve or disapprove the proposed project. The project involves the separation of and upgrades to existing electric infrastructure. The project would not

[13] San Francisco Planning Department, San Francisco General Plan, June 27, 1996, *http://generalplan.sfplanning.org*.

introduce incompatible land uses to the area and would not otherwise conflict with any general plan policies or objectives. Thus, the project would not conflict with the general plan or any other adopted policy.

C.1.2 Proposition M – The Accountable Planning Initiative

In November 1986, the San Francisco voters approved Proposition M, the *Accountable Planning Initiative*, which added Section 101.1 to the planning code to establish eight priority policies. These policies, as well as the sections of this environmental evaluation that address the environmental issues associated with the policies (if applicable), are as follows:

1. Preservation and enhancement of neighborhood-serving retail uses
2. Protection of neighborhood character
3. Preservation and enhancement of affordable housing
4. Discourage use of commuter automobiles
5. Protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership
6. Maximization of earthquake preparedness (Section E.16, Geology and Soils)
7. Landmark and historic building preservation (Section E.4, Cultural Resources)
8. Protection of open space (Section E.10, Wind; Section E.11, Shadow; and Section E.12, Recreation)

Prior to issuing a permit for any project that requires an initial study under CEQA, or issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the general plan, the city is required to find that the proposed project would be consistent with the priority policies. The project would does not appear to conflict with the eight priority policies because the proposed project, which consists of separating existing electrical infrastructure, would:

- Have no effect on neighborhood-serving retail uses, neighborhood character, or affordable housing
- Have no long-term effect on the use of commuter automobiles
- Not directly address issues of earthquake preparedness
- Have no effect on landmark or historic buildings
- Not include commercial office development, nor would it affect resident employment or business ownership
- Have no long-term effect on open space.

C.1.3 San Francisco Bicycle Plan

In August 2009, the board of supervisors approved the *San Francisco Bicycle Plan*[14] (bicycle plan), which includes a citywide bicycle transportation plan comprising a policy framework and a network improvement document. The bicycle plan contains objectives and identifies policy changes to enhance bicycle access and safety with respect to San Francisco's "bike-ability." It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged) and identifies gaps within the citywide bicycle route network that require improvement. The final environmental impact report for the 2009 bicycle plan assessed 56 short-term and long-term bicycle improvement projects. The bicycle plan identifies existing bicycle routes throughout San Francisco. However, bicycle routes would not be substantially affected by temporary construction activities within roadways or within existing electrical substations, as proposed by the project. See Section E.6, Transportation and Circulation, below, for more information on this topic.

C.1.4 Better Streets Plan

The *Better Streets Plan,*[15] adopted in 2010, presents a unified set of standards, guidelines, and implementation strategies to govern how the city designs, builds, and maintains its pedestrian and streetscape facilities. The Better Streets Plan contains goals, policies, and design guidelines to improve pedestrian safety and accessibility, create a unified streetscape design, integrate pedestrians with transit, and improve street ecology and greening. Goals and policies applicable to the project include Goal 9: "San Francisco's streets will be designed for ease of use and access to destinations for all populations, particularly those with visual or mobility impairments," and Policy 9.3: "Maintain accessibility around construction zones per city standards." Access around proposed project construction zones would be maintained through alternative pedestrian access routes and detours with signage. Analysis of potential project effects of construction-period street and sidewalk closures on pedestrians is analyzed in Section E.6, Transportation and Circulation, of this initial study. The proposed project would not conflict with the Better Streets Plan.

C.2. SFPUC Plans and Policies

The SFPUC's 2011 *Strategic Sustainability Plan*[16] provides a framework for planning, managing, and evaluating SFPUC-wide performance, taking into account the long-term economic, environmental, and social impacts of the SFPUC's business activities. This plan consists of a "durable" section, which contains goals, objectives, and performance indicators for use in implementing the SFPUC's vision and values. The goals and objectives are then used to drive the plan's "dynamic" section, which contains specific actions, targets, measures, and budgeting. The SFPUC uses this document to evaluate its performance semiannually, provide an annual score card, and help the SFPUC measure progress on an annual basis.

The Strategic Sustainability Plan contains objectives to "provide high-quality services," "plan for the future," "promote a green and sustainable city," and "invest in [the SFPUC's] communities". The proposed project seeks to acquire the electricity system within San Francisco city limits and certain other assets that are

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14 San Francisco Municipal Transportation Agency, San Francisco Bicycle Plan, June 26, 2009.

15 City and County of San Francisco, San Francisco Better Streets Plan, adopted December 7, 2010.

16 San Francisco Public Utilities Commission, Strategic Sustainability Plan, March 2011, http://sfwater.org/modules/showdocument.aspx?documentid=987.

needed to provide reliable electricity service to customers in San Francisco. As a result, the project would not obviously conflict with any plan provisions.

C.3. Other Jurisdictions' Plans

This section describes the local land use plans adopted by these other jurisdictions that are relevant to the project. Although the SFPUC is not legally bound to the land use plans and policies of other jurisdictions, non-City and County of San Francisco (CCSF) land use plans are discussed in this section to the extent that they provide land use planning information for the jurisdictions in which the project is located. This information is relevant to evaluate project impacts related to the specific significance criteria under CEQA that require an analysis of the compatibility of a proposed project with certain aspects of adopted local land use plans and policies. These particular significance criteria are listed below along with the location in this document where the reader can find the impact analysis:

- 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 (not applicable)
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (analyzed in Section E.15, Biological Resources)
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (not applicable)
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.), or would cause a substantial increase in transit demand that cannot be accommodated by existing or proposed transit capacity or alternative travel modes (analyzed in Section E.6, Transportation and Circulation)
- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (analyzed in Section E.7, Noise)
- Conflict with existing zoning for agricultural use or a Williamson Act contract (not applicable)

The following factors affect the application of other jurisdictions' plans to the proposed project:

Local Agency Project Approval. Elements of the project would require local grading and encroachment permits from various jurisdictions in which construction activities occur.

Building and Zoning Ordinances. Building and zoning ordinances are the most specific expressions of general plan goals, objectives, and policies. State law and judicial interpretations of state law (California Government Code Section 53090 et seq.) mutually exempt cities and counties from complying with each other's building and zoning ordinances. The SFPUC, which is part of the CCSF, is therefore exempt from complying with the building and zoning ordinances of other cities and counties. This same state law also exempts public utilities and special-purpose local agencies (such as electric utilities) from complying with local building and zoning ordinances when locating or constructing facilities for the transmission of electricity.

Local Government Notification and Consistency Determination Requirements. California Government Code Section 65402(b) requires that the SFPUC inform cities and counties of its plans to construct projects or acquire or dispose of extraterritorial property within their jurisdictions. The local governments then have 40 days to determine if the project is consistent with their general plans; these consistency determinations are advisory to the SFPUC rather than binding. Prior to project implementation, local jurisdictions would be notified pursuant to California Government Code Section 65402(b). Notwithstanding the above, where CCSF-owned facilities are sited outside of San Francisco, the SFPUC seeks to work cooperatively with local jurisdictions to avoid conflicts with local land use plans and building and zoning codes.

C.3.1 City of Brisbane

Within the planning area for the City of Brisbane, project sites include the Martin Substation and portions of existing distribution lines within Brisbane. The *City of Brisbane General Plan* addresses construction noise through municipal code restrictions on evening construction and addresses construction air quality through grading ordinance provisions for dust control.[17]

C.3.2 City of Daly City

The planning area for the *City of Daly City General Plan* (Daly City General Plan)[18] encompasses areas where work on electricity distribution lines would occur. The Daly City General Plan seeks to reduce construction-related air quality and water quality impacts through compliance with Bay Area Air Quality Management District's CEQA guidelines and applicable municipal regional stormwater National Pollutant Discharge Elimination System (NPDES) permits. It supports uniform enforcement of control measures for construction-related noise impacts, such as restricting construction times during weekdays and prohibiting construction on weekends.

C.3.3 San Mateo County

The planning area for San Mateo County General Plan encompasses areas, mostly within the Olympic Club, where work on electricity distribution lines would occur. The County of San Mateo General Plan Policies[19] address regulation of excavation and grading to protect against accelerated soil erosion and sedimentation and of noise levels from land uses through establishment of land use compatibility and nuisance thresholds.

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17 City of Brisbane, adopted 1994. Includes Community Health and Safety update adopted by City Council February 2019 (Resolution 2019-05). Available at: https://www.brisbaneca.org/cd/page/general-plan.

18 City of Daly City, Daly City 2030 General Plan, adopted March 25, 2013. Housing Element revised March 9, 2015. Available at: https://www.dalycity.org/363/General-Plan

19 County of San Mateo Planning and Building, General Plan Policies, Updated January 2013. Available at: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/SMC-GP%20Policies%202013.pdf

C.4. Regional Plans and Policies

C.4.1 Clean Air Plan

The Bay Area Air Quality Management District's 2017 *Clean Air Plan*[20] demonstrates how the San Francisco Bay Area will reduce emissions and concentrations of harmful air pollutants, reduce greenhouse gas emissions, achieve compliance with state ozone standards, and reduce the transport of ozone and ozone precursors to neighboring air basins.

The proposed project would include appropriate measures that would reduce pollutant emissions generated by construction of the proposed project. Therefore, the proposed project would not disrupt or hinder implementation of control measures identified in the 2017 Clean Air Plan or otherwise conflict with the 2017 Clean Air Plan. Pollutant emissions generated by construction and operation of the proposed project are analyzed in Section E.8, Air Quality, and Section E.9, Greenhouse Gas Emissions, of this initial study.

C.4.2 Water Quality Control Plan for the San Francisco Bay Basin

The San Francisco Regional Water Quality Control Board's (RWQCB's) *Water Quality Control Plan for the San Francisco Bay Basin*[21] (basin plan) guides water quality control planning in the San Francisco Bay Basin. The basin plan designates beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives. As described in Section E.17, Hydrology and Water Quality, of this initial study, the proposed project would not result in substantial water quality effects; thus, the proposed project would not conflict with the basin plan.

C.5. Approvals and Permits

See Section A.8, Regulatory Actions and Approvals, for a list of anticipated approvals from federal, state, and local agencies.

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20 Bay Area Air Quality Management District, Clean Air Plan, adopted April 19, 2017, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans.

21 California Regional Water Quality Control Board, San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, approved November 5, 2019. , http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

D. SUMMARY OF ENVIRONMENTAL EFFECTS AND APPROACH TO ANALYSIS

D.1. Summary of Environmental Effects

The project could potentially result in adverse physical effects on the environmental resources checked below, and where those impacts are significant or potentially significant, the California Environmental Quality Act (CEQA) requires identification of mitigation measures to reduce the severity of the impacts to a less-than-significant level to the extent feasible. This initial study presents a more detailed checklist and discussion of each environmental resource, unless otherwise noted below.

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

D.2. Approach to Analysis

The transfer of most of the PG&E assets, including property rights, would not involve any physical changes to the environment. In addition, the acquisition of new property rights from public and private landowners would not involve any physical changes to the environment. Therefore, the transfers and property rights acquisitions would have no potential for adverse environmental effects and are not discussed for the environmental topics presented below. The analysis below identifies the physical changes to the environment that could result from the proposed construction and operation of new and modifications to existing electricity infrastructure. The analysis also addresses the employment of up to 200 new employees

and the operation of newly installed equipment such as transformers, STATCOMs, transmission and distribution line segments. Operation and maintenance of the electric system in San Francisco would remain substantially the same as existing operations and maintenance under PG&E ownership as required by California Public Utilities Commission guidelines and orders. Because these routine activities are ongoing and would not change substantially under the proposed project, these activities would not have the potential to result in environmental effects relative to existing conditions and are not therefore considered in the evaluation of environmental impacts presented below.

The initial study checklists presented in Section E, Evaluation of Environmental Effects, correlate with CEQA significance criteria used to evaluate the project impacts for each environmental topic. The impact evaluation considers project impacts both individually and cumulatively. For the significance criteria checked "less than significant with mitigation incorporated," "less-than-significant impact," "no impact," or "not applicable," the impact analysis determined that the project would not have a significant adverse impact with respect to those environmental issues. A full discussion is presented for criteria checked "less than significant with mitigation incorporated" and "less-than-significant impact," and a brief discussion is included for criteria checked "no impact" or "not applicable." The impacts corresponding to the topics checked above would be less than significant with mitigation incorporated. The impact analyses are presented in Sections E.1 through E.23, below.

Impacts are numbered throughout this initial study using an environmental topic identifier (e.g., "CR" for cultural resources) followed by sequentially numbered impacts. Mitigation measures are numbered to correspond to the associated impacts (e.g., Mitigation Measure M-CR-1 addresses Impact CR-1). Cumulative impacts are discussed at the end of the impact analysis for each environmental topic and identified by the letter "C" (e.g., Impact C-CR addresses cumulative impacts on cultural resources).

E. EVALUATION OF ENVIRONMENTAL EFFECTS

E.1. Land Use and Planning

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
1.	**LAND USE AND LAND USE PLANNING—Would the project:**					
a)	Physically divide an established community?	☐	☐	☐	☒	☐
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒	☐

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

Physical division of an established community would typically involve construction of a physical barrier to neighborhood access, such as a new freeway, or removal of a means of access, such as a bridge or a roadway, which would not occur under the proposed project. The proposed project would install electrical distribution lines and vaults within public and private streets and properties, connections to electrical utility poles, and equipment within existing substations. The majority of the proposed project would be underground and would not divide an established community. The new, permanent above-ground project components, such as overhead utility wires and equipment within substations would not block access between adjacent land uses or physically divide an established community. The use of staging areas within and adjacent to the affected roadways and within substations during construction would not physically divide established communities as access to neighboring areas would be maintained at all times and because these areas do not act as corridors between or within existing neighborhoods. Therefore, the proposed project would not physically divide an established community, and there would be no impact.

Impact LU-2: The proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (No Impact)

Conflicts with land use plans, policies, and regulations do not necessarily indicate a significant environmental land use impact under CEQA, unless a project substantially conflicts with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect such that a substantial adverse physical change in the environment would result. To the extent that physical environmental impacts may result from such conflicts, the physical impacts are evaluated under the relevant environmental topic sections of this initial study.

As discussed in Section C, Compatibility with Existing Zoning and Plans, the proposed project would not substantially conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, including the Bay Area Air Quality Management District's *2017 Clean Air Plan, San*

Francisco's Strategies to Address Greenhouse Gas Emissions, and the San Francisco Regional Water Quality Control Board's *San Francisco Basin Plan*. Applicable local land use policies include the San Francisco General Plan, which describes the comprehensive long-term land use policies for the city. The general plan consists of the following 10 elements that set forth goals, policies, and objectives for the physical development of San Francisco: housing, commerce and industry, recreation and open space, transportation, urban design, environmental protection, community facilities, community safety, arts, and air quality. The proposed project is consistent with the relevant objectives and policies:

> Environmental Protection Objective 4: "Assure that the ambient air of San Francisco and the Bay Region is clean, provides maximum visibility, and meets air quality standards;" Policy 4.1: "Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District."
>
> Air Quality Element Objective 5: "Minimize particulate matter emissions from road and construction sites;" Policy 5.1: "Continue policies to minimize particulate matter emissions during road and building construction and demolition."

The objectives and policies are relevant to the proposed project because the use of construction equipment during project implementation would, if not properly managed, create dust and result in emissions of criteria air pollutants. The SFPUC would require the construction contractor to implement site-specific best management practices to control dust and emissions of criteria air pollutants in accordance with the Construction Dust Control Ordinance. Portions of the proposed project would be located within an Air Pollutant Exposure Zone,[22] which is an area with high background concentrations of air pollutants. As such, within San Francisco, the SFPUC would comply with the Clean Construction Ordinance, which requires public projects to reduce emissions at construction sites in areas that have been classified as Air Pollutant Exposure Zones. Compliance with the Clean Construction Ordinance is analyzed in detail in Section E.8, Air Quality, of this initial study. The proposed project would be consistent with objectives and policies for minimizing particulate matter emissions due to compliance with the air quality standards of the Bay Area Air Quality Management District, the San Francisco Dust Control Ordinance and the Clean Construction Ordinance. The proposed project would not conflict with the environmental protection and air quality elements of the general plan nor would it substantially conflict with any applicable general plan goals, policies, and objectives.

The County of San Mateo and the cities of Brisbane and Daly City have relevant general plan policies that address environmental effects such as construction noise, air quality, soil erosion, and water quality. The proposed project would comply with the substantive requirements of the local ordinances implementing these and all other relevant plans, policies, and regulations; therefore, the project would not result in a significant physical environmental impact due to a conflict with any land use plans, policies, or regulation of these cities adopted for the purpose of avoiding or mitigating environmental impacts.

The proposed project would involve reconfiguration and installation of infrastructure for the SFPUC, rather than PG&E, to distribute electricity to customers in San Francisco. Operation would be similar to the current operation of the existing electricity system. The proposed project would comply with all applicable environmental regulations. The proposed project would not cause a significant physical environmental

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[22] San Francisco Planning Department, Property Information Map, Air Pollutant Exposure Zone Map 2020. Available at: https://sfplanninggis.org/pim

impact due to a conflict with any applicable land use plans policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact.

Impact C-LU: The proposed project, in combination with cumulative projects, would not physically divide an established community, nor would it cause a significant environmental effect due to a conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. (No Impact)

Because the proposed project would have no land use impacts, it would not contribute to any potential cumulative land use impacts (no impact).

E.2. Aesthetics

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
2.	**AESTHETICS—Except as provided in Public Resources Code Section 21099, would the project:**					
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment that contribute to a scenic public setting?	☐	☐	☒	☐	☐
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒	☐
d)	Create a new source of substantial light or glare that would adversely affect daytime- or nighttime views in the area?	☐	☐	☒	☐	☐

The proposed project is located within an urbanized area; therefore, the analysis of Topic E.2(c) focuses on whether the project would conflict with applicable zoning and other regulations governing scenic quality.

The project sites are in developed and on both sloped and generally flat, low-lying areas. As described in Section A, Project Description, the areas surrounding the proposed project are urban and developed, containing a variety of industrial, commercial, and residential uses. The existing visual quality of the project sites and surrounding area is considered low because of its developed urban setting and lack of long-range views of scenic areas. Views of the project sites are typically short-range views, primarily from adjacent streets and parcels. This is because of intervening structures between the project sites and observers at longer distances.

Impact AE-1 and AE-2: The proposed project would not have a substantial adverse effect on a scenic vista or substantially damage scenic resources (Less than Significant)

A project would have a significant effect on scenic vistas if it would substantially degrade important public view corridors or obstruct scenic views from public areas that are seen by a substantial number of people. A scenic vista is generally an expansive, publicly accessible view that is recognized and valued for its scenic quality. Scenic vistas are typically available from vista points, designated scenic highways, or parks. The urban design element of the general plan includes objectives and policies to protect major views in the city,

with particular attention paid to views of open space and water.[23] For this analysis, public views of San Francisco Bay are considered scenic vistas.

Scenic resources include trees, rock outcroppings, and other landscape features that contribute to the scenic character of a public area. The urban design element of the general plan contains objectives and policies to protect natural resources such as sand dunes; hills; cliffs; open spaces, including recreational resources; San Francisco Bay; and the Pacific Ocean, all of which contribute to the visual framework of the city. There are no scenic resources in the vicinity of the project work areas, with the exception of a short distribution line segment within Harney Way which is adjacent to San Francisco Bay.

Construction

Construction activities, equipment and materials, and vehicles would not have a significant effect on scenic vistas because project sites are generally not visible from scenic viewpoints, as the sites are primarily within low-lying areas and existing streets. Views of construction equipment and materials during the construction period would appear similar to the existing elements in the viewshed, which include urban elements such as buildings, trucks, and vehicles. Construction would not degrade any scenic views in the project area because construction activities would be temporary, and the equipment and activity would be similar to existing elements in the viewshed. As a result, construction of the proposed project would not substantially alter scenic vistas in the area.

The proposed project would not involve construction activities within San Francisco Bay. The construction equipment, vehicles, and stockpiles would be limited to the fenced area or adjacent roadways. The proposed project would not damage scenic resources and there would be no impact.

Potential impacts on scenic vistas and resources would be further minimized with implementation of SFPUC Standard Construction Measure 8 (Visual and Aesthetic Considerations), which requires construction sites to be maintained in a clean and orderly state and returned to their general pre-project condition after construction. As a result, construction of the proposed project would not have a substantial adverse effect on a scenic vista or substantially damage scenic resources. Impacts on these resources would be less than significant.

Operation

The majority of project components, such as the electrical distribution lines and vaults, would be below grade and would not affect scenic vistas or scenic resources during project operation because the components would not be visible. Visible components of the completed project would include equipment within the substations and electrical lines attached to power poles. The proposed breakers, transformers, and control houses at the Martin Substation and STATCOM units at Potrero Substation would be similar to surrounding switchyard infrastructure (see Figure 5 for example photos of some above-ground equipment). At Martin Substation, new breakers and transformers would be similar in bulk, size, and appearance to the other existing breakers and transformers. The control houses would blend in with other trailers on site. The proposed infrastructure would have heights ranging from 8 to 20 feet. Most of the above-ground structures would be blocked from public street views by the approximately 10-foot-tall solid wall that surrounds the substation. At

[23] San Francisco Planning Department, San Francisco General Plan Urban Design Element, 2018, http://generalplan.sfplanning.org/I5_Urban_Design.htm.

Potrero Substation, the STATCOM units would be approximately 12 feet tall (or 40 feet if stacked) and would blend in with other existing structures; they would also partially be blocked from public street views by an existing 8-foot-tall solid wall on 23rd Street and an 8-foot-tall chain-link fence (with slats) on Illinois Street. Both substations are existing industrial sites, and the installation of proposed infrastructure comparable in appearance, size, and height would integrate with existing structures.

The distribution separation work would occur within residential, commercial, industrial, and public uses throughout the southern portion of the project area. Disconnections could involve the removal of wires between existing electric poles to create a physical separation. In such a case, the end poles would be structurally supported, such as by installing guy wires. Connections could consist of installing electric wires between existing electric poles or installing a riser (conduit) from an underground vault to the electric pole. Figure 5 shows an example of changes associated with the separation work. Connections and disconnections of electric lines would minimally change the visual environment, due to the presence of existing overhead facilities such as power lines and poles.

The visible proposed project elements would be similar in appearance to existing visual elements within the substations and in the vicinity of the distribution area. The impact on scenic vistas and scenic resources would be less than significant due to the limited change in visual quality that would result from the proposed project elements.

Impact AE-3: The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. (No Impact)

Construction and Operation

The urban design element of the San Francisco General Plan includes objectives and policies to protect major views in the city and natural resources that contribute to the visual framework of the city. San Mateo County General Plan policies call for minimizing the adverse visual quality of utility structures, including overhead wires and utility poles. The City of Brisbane General Plan community character chapter acknowledges the importance of San Bruno Mountain to the community and identifies policies for maintaining its beauty and habitat. The proposed project would not conflict with these policies because the project would not degrade or obstruct any scenic views or vistas observed from a public area or damage scenic resources within the project sites or proposed staging areas. Construction of the proposed project could be visible from publicly accessible viewpoints; however, construction activities would be temporary and would not substantially or permanently alter the existing scenic quality of the area. The proposed project would not construct any buildings or structures, other than two trailer-like control buildings, transformers and other equipment within industrial substations, and utility poles; these components would not be subject to the San Francisco Arts Commission Civic Design Review process and Public Arts Program. In San Mateo County, the proposed distribution line would be installed underground and would not be visible; distribution separation work typically would replace existing overhead wires with new connections or install underground connections. As a result, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality.

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

Construction

Project construction would typically occur weekdays between 7 a.m. and 5 p.m., but could extend to 8 p.m. at some locations depending upon construction restrictions during commute hours. Depending upon the time of year, lighting could be required for construction in the early evening hours. During evening work, exterior lighting to accommodate the work at the project sites would be temporary and short-term in nature. Construction lighting, if needed, would be confined to the project footprint and directed downwards to the active construction area. Construction lighting would not affect nighttime views in the area, because there are no long-range views and the extent of construction lighting would be limited. Construction of the proposed project would not result in a substantial source of light that could adversely affect nighttime views in the area. As a result, the impact from construction lighting would be less than significant.

Project construction would not include any equipment or materials with highly reflective surfaces that would introduce a source of glare during construction; therefore, no construction impacts related to glare would occur.

Operation

Limited exterior security lighting is proposed for new infrastructure within the Potrero and Martin substations, such as for the control houses and STATCOM units. Lighting would be shielded and directed downward and would generally not be viewed from outside of the substations. These substations are surrounded by urban streets with nighttime street lighting. Security lighting would not result in a substantial source of light that could adversely affect nighttime views in the area. The impact from operational lighting would be less than significant. The proposed project components would not include any highly reflective surfaces and would not introduce a source of glare; therefore, glare-related impacts would not occur.

Impact C-AE: The proposed project, in combination with the cumulative projects, would not have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or conflict with applicable zoning and other regulations regarding scenic quality, or generate substantial new sources of light or glare. (Less than Significant)

The geographic scope for potential cumulative aesthetic impacts includes cumulative projects within the publicly accessible viewshed of the proposed project, which extends approximately 1,000 feet in every direction from the project sites. The visual setting of the project sites is defined by topography and the density of development in the area. Because of the density of development in the vicinity and the proposed project's location in generally topographically low areas, most views of the project sites are relatively short range.

Scenic Vistas and Scenic Resources

As discussed in Impact AE-1, the project construction and operation would have a less-than-significant impact on scenic vistas and scenic resources. The cumulative projects would involve construction equipment and activity that could have an adverse effect on scenic views in the proposed project area. Given the existing urban setting, construction activities associated with the cumulative projects are common in the area and would be temporary. As a result, construction of the proposed project, in combination with the

cumulative projects, would have a less-than-significant cumulative impact on scenic vistas and scenic resources.

During operation, long-term visual impacts could occur if the proposed project, in combination with the cumulative projects, would result in a substantial adverse effect on a scenic vista. These projects are located within areas zoned for industrial, commercial and residential uses and would be consistent with the surrounding land uses. Operation of the proposed project, in combination with the identified cumulative projects, would have a less-than-significant cumulative impact on scenic vistas and scenic resources and would not conflict with regulations governing scenic quality.

Lighting and Glare

The project would have no impacts related to construction and operational glare, and therefore would not contribute to any potential cumulative impacts related to glare. Cumulative impacts related to lighting would occur if the proposed project, in combination with cumulative projects, were to adversely affect nighttime views in the area. As discussed under Impact AE-3, exterior lighting would be needed to accommodate evening construction (if required) and for operational security lighting within the substations. The construction lighting would not affect scenic views and would be visible only for short durations from adjacent areas. Security lighting inside the substations would be shielded and directed downwards. Cumulative projects near the substations, such as the Potrero Power Station Mixed-Use Development Project, the Pier 70 Mixed Use District Project, and the Brisbane Baylands Specific Plan also would include nighttime lighting from new streetlights, and exterior and interior building illumination. Given the existing nighttime views include these types of illumination of the urban environment, the proposed project and cumulative projects would not result in a significant cumulative impact related to nighttime lighting.

E.3. Population and Housing

Topics:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
3.	**POPULATION AND HOUSING—Would the project:**					
a)	Induce substantial unplanned 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 people or housing units, necessitating the construction of replacement housing?	☐	☐	☐	☒	☐

Impact PH-1: The proposed project would not induce substantial unplanned 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). (Less than Significant)

In general, a project would be considered growth-inducing if its implementation were to result in substantial unplanned population increases and/or new development that might not occur if the project were not implemented. The proposed project would separate the electric system and install certain equipment so that the SFPUC, rather than PG&E, would provide electricity to customers in San Francisco. The total energy delivered to serve the city's load would not change as a result of the SFPUC's acquisition of PG&E assets. The proposed project would not involve the development of new homes or businesses, which could directly induce population growth, nor would it extend the electricity system into new areas, which could indirectly induce population growth.

Construction

Project construction may involve up to 15 construction crews of five to nine members, for a maximum of 135 construction workers, during a one-year period. Should fewer construction crews work concurrently, the construction duration would be longer. According to the California Employment Development Department, the average number of construction jobs from March 2019 to March 2020 was about 43,515 jobs in San Francisco and San Mateo counties (combined)[24]. The Association of Bay Area Governments (ABAG) estimates the total number of new project construction jobs that will be added in San Francisco and San Mateo counties by 2040 will be about 4,860.[25] Given the site's proximity to regional population centers, and considering the size of the regional construction work force, project construction workers would very likely be drawn primarily from the local and regional construction workforce. Project construction workers who do not live in the project vicinity would most likely commute from elsewhere in the city or the Bay Area rather than temporarily relocate from more distant cities or towns. Consequently, construction of the proposed project would not induce population growth by attracting a substantial number of construction workers from outside the region to the area. Therefore, project construction would not create a demand for

[24] California EDD, Current Industry Employment Statistics (Industry Employment) Data, https://www.labormarketinfo.edd.ca.gov/geography/md/san-francisco-redwood-city-south-san-francisco.html, accessed April 20, 2020.

[25] *Plan Bay Area Projections 2040* estimates that there would be 23,320 construction jobs in San Francisco, and 27,340 construction jobs in San Mateo County by 2040 (ABAG/MTC, *Plan Bay Area Projections 2040, A Companion to Plan Bay Area 2040*, November 2018).

additional housing or other facilities and services associated with growth and impacts would be less than significant.

Operation

Project-generated employment growth would represent a significant impact if the growth would substantially exceed the employment growth anticipated by the city or region (i.e., Association of Bay Area Governments [ABAG]), and would not be accommodated by existing or planned services, infrastructure or regional housing projections.

As described in Section A.6.1, approximately 200 workers may be hired for operation and maintenance of the electrical system. Between 2010 and 2040, ABAG's *Plan Bay Area 2040* forecasts that the number of total jobs in the city will increase from 576,800 to 872,500, or a total growth of 295,700 new jobs.[26] The maximum projected employment increase associated with the project would represent less than 0.07 percent of this increase. This incremental increase in employment would not be significant and is within the growth anticipated under Plan Bay Area projections for the city. Given the relatively modest number of new employees, workers would likely be drawn from the existing labor market in the San Francisco Bay Area and commute from nearby cities rather than relocate to San Francisco and create demand for additional housing or other services. Therefore, the growth-inducing impact of project operations would be less than significant.

Impact PH-2: The proposed project would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing. (No Impact)

The project sites do not include existing housing or residential uses. Therefore, the proposed project would not displace existing residences, nor would it result in the displacement of any people. Because the project would not displace existing housing units or people, and therefore would not necessitate construction of replacement housing, there would be no impact.

Impact C-PH: The proposed project, in combination with the cumulative projects, would not induce substantial unplanned population growth or create demand for additional housing. (Less than Significant)

As discussed in Impact PH-2, the proposed project would not displace any existing people or housing or result in the need for replacement housing. Thus, the project would not contribute to any potential cumulative impact associated with displacement of people or housing (no impact).

Construction

As discussed under Impact PH-1, the maximum number of construction workers on site during active construction of the proposed project would be approximately 135 per day, assuming 15 crews working concurrently. Although construction employment associated with the proposed project would be temporary, it could coincide with construction employment generated by some of the identified cumulative projects. Given the size of the regional construction workforce, the construction labor force in San Francisco County and the surrounding counties is expected to accommodate ongoing demand for construction labor, as discussed above. Therefore, construction of the proposed project, in combination with the cumulative projects, would

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[26] *Plan Bay Area Projections 2040* estimates that there would be 23,320 construction jobs in San Francisco, and 27,340 construction jobs in San Mateo County by 2040 (ABAG/MTC, *Plan Bay Area Projections 2040, A Companion to Plan Bay Area 2040*, November 2018).

have a less-than-significant cumulative impact on unplanned population growth or demand for additional housing.

Operation

Project operational employment would result in up to approximately 200 new employees. As discussed above, ABAG Plan Bay Area 2040 forecasts that the number of jobs in the city will increase by 295,700 jobs between 2010 and 2040. Given the estimated 0.07 percent contribution to forecasted employment growth, the project would not contribute considerably to any potential impacts on unplanned employment growth. Therefore, the population and housing impact of project operations to cumulative growth would be less than significant.

E.4. Cultural Resources

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
4. CULTURAL RESOURCES—Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code?	☐	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐	☐

Historical resources are those properties that meet the definition for historical resources in CEQA section 21084.1 and CEQA Guidelines section 15064.5. "Historical Resources" include properties listed in, or formally determined eligible for listing in, the California Register of Historical Resources (California Register) or listed in an adopted local historic register. The term "local historic register" or "local register of historical resources" refers to a list of resources that are officially designated or recognized as historically significant by a local government pursuant to resolution or ordinance. Historical resources also include resources identified as significant in a historical resource survey meeting certain criteria. Additionally, properties that are not listed, but are otherwise determined to be historically significant based on substantial evidence, would also be considered a historical resource. A property may be considered a historical resource if it meets any of the California Register criteria related to (1) events, (2) persons, (3) architecture, or (4) information potential that make it eligible for listing in the California Register, or if it is considered a contributor to an existing or potential historic district. The significance of a historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance." Historical resources identified within the project area of potential effect and vicinity are described below.

The Martin Substation was previously recorded on the Department of Parks and Recreation (DPR) 523A form used for recording and evaluating historic resources.[27] The record indicates that the Martin Substation compound, including the pump house, potentially meets the California Register of Historic Resources Criterion 1 "for its importance in the economic, industrial, and residential development of the south San Francisco region that resulted from the introduction of a major supply of hydroelectricity to the region. The period of significance for this criterion is 1922, when the station came online, to 1945, when it was expanded to accommodate anticipated post-World War II growth." According to the DPR 523A record, the substation compound represents the architectural design of Ivan Frickstad, who was "responsible for instilling a high sense of architectural expression into the company industrial structures of the 1920s." Under Frickstad's direction, "PG&E used its embellishment of industrial structures as a way to improve public relations, market hydroelectricity, and uphold their public image as a company concerned about beautifying the

[27] State of California – The Resources Agency 2008. Department of Parks and Recreation Primary Record (# P-41-002206). Jul 14.

landscape, both urban and rural… Martin Substation was built following Frickstad's 'out-of-town' design, with expanses of concrete walls broken by roof cornices, banks of metal slabs, and glass windows and other architectural details. The buildings at the compound, from the large substation to the handling house to the small pump house display a cohesive design and represent Frickstad's desire to create an elegant and majestic atmosphere in what today would be considered merely industrial buildings. As such, the substation is eligible under Criterion 3 as an example of a modest scaled Frickstad design." The 1922 pump house was considered not individually eligible, but "appears to be a contributor to the historic district as an example of a Frickstad-designed support building and as a type of ancillary hydroelectric generation structure." Based on Google Earth aerial photography of the site, the pump house was removed sometime between April and September 2008. The area where the pump house once stood is occupied by trailers.

The 2003 Jefferson-Martin 230 kV Transmission Line Project Final EIR[28] (which included modifications of the Martin Substation) identified one historic property outside the Martin Substation, at the southwest corner of Bayshore Highway and Main Street (approximately 800 feet south of the southernmost portion of the switchyard). This site consisted of concrete foundations of an old dairy barn and associated outbuildings.

The Potrero Power Station Mixed-Use Development Project Draft EIR[29] identified historic resources in and around the former Potrero Power Plant area. Historic resources include the Third Street Industrial District, a historic district initially identified in the 2001 Central Waterfront Historic Resources Survey Summary Report and found eligible for listing in the California Register of Historic Resources in 2008. The PG&E south switchyard (project site) is outside the boundaries of the Third Street Industrial District. The district consists of the highest concentration of light industrial and processing properties within the Central Waterfront district. Several buildings contribute to the district's historical significance, three of which also have been previously determined to be individually eligible for listing on the California Register of Historic Places (all of which are located within the Potrero Power Station Mixed-Use Development Project Site and are outside of the project site).

To the north of the former Potrero Power Plant is the 66-acre Union Iron Works Historic District (Pier 70), which is listed on the National Register of Historic Places.[30] Features of the Union Iron Works Historic District include buildings, piers, slips, cranes, historic rail features, and the remnants of a former shipyard workers' neighborhood.

Based on the San Francisco Article 10 Landmarks and Historic Districts map,[31] no landmarks are located within the project area. The Broderick Terry Duel Landmark Park is located in Daly City and is listed as Registered California Landmark No. 19. However, this landmark is not considered a CEQA historic resource because it is not a registered landmark with a designation of 770 or higher.[32] A plaque commemorates the

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28 PG&E. 2003. *Jefferson-Martin 230 kV Transmission Line Project Final EIR, Section D.5.* October. Available at: https://www.cpuc.ca.gov/Environment/info/aspen/jefferson_martin/feir.htm.

29 San Francisco Planning Department. 2018. *Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005.* Figure 4.D-1, Historical Resources On and Near the Project Site, p. 4.D-10. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

30 Ibid., p. 4.D-15.

31 San Francisco Planning Department. 2008. San Francisco Article 10 Landmarks and Historic Districts. October. Available at: https://archives.sfplanning.org/documents/4477-Landmarks_October_2008_compressed.pdf

32 As outlined in California Public Resources Code section 5031(a), California Registered Historical Landmark Nos. 770 and above are automatically listed in the California Register; lower numbers are not automatically listed because they are not presumed to have been evaluated using the framework currently required for California Register eligibility.

duel that took place on September 13, 1859 between United States Senator David C. Broderick of California and ex-Chief Justice of the Supreme Court of California David S. Terry.[33] This duel was one of the final legally sanctioned duels on American soil.

Impact CR-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code. (Less than Significant)

Construction

Project construction activities would occur within a portion of the PG&E Martin substation, which has been identified as a historical resource. Construction would also occur within the PG&E south switchyard at the Potrero substation, which is located near the Third Street Industrial District. Construction would not directly affect existing historic structures. Construction vibration effects on historic resources are evaluated in Section E7, Noise. As discussed, potential impacts on historic resources resulting from vibrations due to construction equipment would be less than significant based on the distance of historic resources from project construction areas.

Operation

The proposed project would install equipment within the PG&E Martin substation, which has been identified as a historical resource. At the Martin substation, the project would install equipment such as breakers, transformers, and two control houses within the switchyard; the precise locations have not yet been determined. These structures would be up to 30 feet wide and 50 feet long and range from 8 to 20 feet in height. Improvements would not require the removal of any existing structures. The equipment proposed for installation at the PG&E Martin substation would be similar in scale to existing substation structures and would conform to the existing industrial use of the site. The equipment would be integrated functionally and visually with the other existing industrial uses of the substation and historic district. Because the proposed above-ground components at the Martin substation would visually integrate with existing facilities, they would not result in an adverse change to the physical characteristics of the substation or its immediate surroundings such that it would prevent the substation from conveying its historical significance.[34]

At the Potrero substation, the project may install three STATCOM units, approximately 10 feet wide by 40 feet-long and 12 feet tall (40 feet if stacked). These units would be located within the PG&E south switchyard area, which is outside of the Third Street Industrial District boundaries. Several contributing structures to the historic district are located east of the PG&E switchyard.[35] Similar to the Martin Station, the proposed equipment would be integrated functionally and visually with the other existing industrial uses. Because the STATCOM units would visually integrate with existing facilities, they would not result in an adverse change

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33 Atlas Obscura. No Date. Broderick-Terry Duel Site. Available at: https://www.atlasobscura.com/places/broderick-terry-duel-site. Accessed on October 17, 2019

34 San Francisco Planning Department, 2019. Memorandum from Justin Greving, Senior Preservation Planner to Julie Moore, Principal Environmental Planner. October 31.

35 As described in the Potrero Power Station Mixed-Use Development Project EIR, four or five of the six structures on that project site that are contributors to the Third Street Industrial District (Station A, the Gate House, the Meter House, and the Compressor House located east of the PG&E switchyard) would be demolished (p. 4.D-24).

to the physical characteristics of the substation or its immediate surroundings, including the significance of the Third Street Industrial District.

Based on the discussion above, the project would not materially impair a historical resource and the impact would be less than significant.

Impact CR-2: The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. (Less than Significant)

Archaeological resources are the evidence left in the soil of historic or prehistoric occupation sites and activities. The significance of archaeological resources is determined based on California Register criteria. Significant archaeological resources are a subset of historical resources as defined under CEQA guidelines section 15064.5.

Construction

An archaeological review was performed by a planning department staff archaeologist to determine the potential for encountering archeological resources during construction.[36] The review included a literature review of previous archaeological research results in the proposed project vicinity and review of prehistoric archaeological sensitivity modeling for the project area. Based upon this review, several locations within the project area were identified as either "sensitive" or "highly sensitive" for near surface prehistoric and/or 19th century historic resources. This material could be exposed and removed at one or more location during trench excavations for installation of the distribution line or foundation excavations within the substations. Without appropriate precautions, this could result in the loss of significant historical information, which would be a potentially significant archaeological impact.

Implementation of SFPUC Standard Archaeological Measures I (Archaeological Discovery), II (Archaeological Monitoring), and III (Archaeological Testing) would ensure that trenching and excavation would not result in significant impacts to archeological resources. Standard Archaeological Measure I requires construction crew training in identification of archaeological materials prior to the start of excavation, and implementation of stop work provisions to allow for archaeological assessment in the event of a potential archaeological discovery, including discoveries of historic materials, human remains, and prehistoric deposits. In addition, on discovery of an archeological site associated with descendant Native Americans or other descendant group, an appropriate representative of the descendant group must be contacted and invited to consult regarding the appropriate treatment and, if applicable, interpretation of the site and recovered materials. Standard Archaeological Measure II requires development of an archaeological monitoring plan prior to construction and the presence of an archeological monitor on the site during excavation. The archeological monitor would halt construction, if needed, for inspection, documentation, and assessment to determine whether a discovery is a significant resource. If so, all applicable elements of Standard Archaeological Measure III would apply. In areas where an archaeological resource is expected to be present, Standard Archaeological Measure III requires an archaeological field investigation prior to construction to determine the presence and integrity of the archaeological resource. In compliance with these standard construction measures, a qualified archaeological consultant would develop and implement an Archaeological Monitoring Plan/Archaeological Testing Plan for the project, when more detail on

[36] San Francisco Planning Department, SFPUC Preliminary Archaeological Checklist for the PG&E Asset Acquisition Project, October 8, 2019, revised January 7, 2020.

required excavations at each location has been developed. For the areas identified as sensitive for historic or prehistoric resources in the preliminary archaeological review, additional assessment will be required in the archaeological monitoring plan and/or archaeological testing plan to determine the standard construction measures appropriate for the project circumstances based on depth of excavation, prior soil disturbances, and depth of existing fill. It is anticipated that monitoring will be warranted in most or all of the areas identified as high or very high sensitivity, and testing may be warranted for the locations in the easternmost portions of the project, including the Martin Substation, and possibly at the Potrero substation. The project archaeological consultant would consult with the planning department on the appropriate scope for the archaeological monitoring/testing plan and additional research would be required to more precisely identify the potential for archaeological impact at specific locations once excavation details have been determined. With the implementation of these required measures, impacts to archaeological resources would be less than significant.

Operation

Repair and replacement of newly installed facilities as part of ongoing maintenance activities in the future may require ground disturbance. It is assumed that any such work would be confined to the same footprint and depth of soil disturbance as project construction, the potential to encounter archeological resources is low. Moreover, the SFPUC implements Standard Construction Measure 9, Cultural Resources (including archaeological measures I, II, and III) for all construction projects that include soil disturbance. With implementation of this standard construction measure, as described above for construction, impacts to archaeological resources from operations and maintenance would be less than significant.

Impact CR-3: The proposed project would not cause a substantial adverse impact on human remains, including those interred outside of formal cemeteries. (Less than Significant)

Construction

There are no known human burials or archaeological resources that contain human remains in the area of potential project effects; however, the possibility of encountering human remains, either within the context of a buried prehistoric deposit or in isolation in pre-bay sediments, cannot be entirely discounted. Earth-moving activities associated with construction of the proposed project could result in direct impacts on previously undiscovered human remains. Therefore, without appropriate precautions, the potential impact regarding disturbance to human remains could be significant. The proposed project is subject to the provisions of California Health and Safety Code, section 7050.5, with respect to the discovery of human remains. Public Resources Code section 5097.98 regulates the treatment and disposition of human remains encountered during construction, and SFPUC Standard Archaeological Measure I (Archaeological Discovery) requires work to be halted, notification of appropriate agencies and, if the remains are Native American, notification of a Native American most likely descendant, and development of a treatment plan in consultation with the most likely descendant in the event that human remains or other funerary objects are encountered during construction. Compliance with state regulatory requirements and implementation of SFPUC Archaeological Measure I would ensure that impacts on human remains, including those interred outside of formal cemeteries, would be less than significant.

Operation

Repair and replacement of newly installed facilities as part of ongoing maintenance activities in the future may require ground disturbance. However, because it is assumed that any such maintenance activities

would be confined to the same footprint and depth of soil disturbance as existing facilities, and therefore would not result in new soil disturbance, the potential to encounter human remains is low. Moreover, the SFPUC implements Standard Construction Measure 9, Cultural Resources (including archaeological resources and human remains) for all construction projects that include soil disturbance. With implementation of this standard construction requirement, as described above for construction, impacts on human remains would be less than significant.

Impact C-CR: The proposed project, in combination with the cumulative projects, would not have a significant cumulative impact on historical resources, archaeological resources, or human remains. (Less than Significant)

The geographic scope for cumulative cultural resource impacts encompasses areas within or immediately adjacent to the proposed project sites. All cumulative projects identified are assumed to involve some degree of ground disturbance during construction and have the potential to impact historic architectural, archaeological, and human remains. However, impacts on historic and archaeological cultural resources are site specific.

Historic Resources

As indicated above under Impact CR-1, historic resources in the project vicinity are limited to the PG&E Martin substation and the Third Street Industrial District, adjacent to the PG&E Potrero switchyard. The proposed project would have less-than-significant impacts on these historic resources. No reasonably foreseeable cumulative projects were identified that would also affect historic resources at the PG&E Martin substation; thus, there would be no cumulative impact on the PG&E Martin substation historical resources.

The Potrero Power Station Mixed-Use Development EIR identified significant and unavoidable impacts on individually significant buildings and on the integrity of a historic district at a project-level and cumulative level, from the demolition of historic buildings and new construction of a mixed-use development on the Potrero Power Station site.[37] Accordingly, there would be a significant cumulative impact on historic resources. The proposed project would not demolish any structures and would introduce equipment within the PG&E switchyard that would be compatible with existing switchyard and other industrial uses of the historic district. As such, the project would not contribute to the significant cumulative impact on the Third Street Industrial District, and the impact would be less than significant.

Archaeological Resources and Human Remains

As discussed above, the proposed project's impacts would be less than significant with compliance with state regulatory requirements and the required implementation of SFPUC Standard Archaeological Measures I (Archaeological Discovery), II (Archaeological Monitoring), and III (Archaeological Testing). Because these impacts are site-specific and generally limited to the immediate construction area, the proposed project, in combination with other cumulative projects, would not result in a significant

[37] San Francisco Planning Department. 2018. *Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005, Section 4D.* October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

cumulative impact on archaeological resources and human remains. This impact would be less than significant.

E.5. Tribal Cultural Resources

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Not Applicable*
5. TRIBAL CULTURAL RESOURCES.					
a) 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:					
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐	☐
ii) 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.	☐	☒	☐	☐	☐

Impact TC-1: The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource. (Less than Significant with Mitigation)

Tribal cultural resources are those resources that meet the definitions in CEQA section 21074. Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either: (a) included or determined to be eligible for inclusion in the California Register of Historical Resources, or (b) included in a local register of historical resources, as defined in Public Resources Code section 5020.1(k). All prehistoric archaeological resources in San Francisco are presumed to be potential tribal cultural resources based on the results of planning department consultation with Native American representatives. Any substantial adverse change to the significance of a tribal cultural resource during construction would be a significant impact.

Pursuant to CEQA section 21080.3.1(d), on October 27, 2021, the planning department contacted Native American tribal representatives for San Francisco and San Mateo counties using lists provided by the Native American Heritage Commission, as well as Ohlone interested parties who have requested notification. The notices provided a description of the proposed project and requested comments on the identification, presence, and significance of tribal cultural resources in the project vicinity. During the 30-day comment period, one Native American tribal representative contacted the planning department to request consultation. Consultation occurred on December 9, 2021.

Construction

Planning department archaeological review and Native American tribal consultation identified several locations within the project area that are sensitive for near surface pre-contact archaeological resources, which are presumed to represent tribal cultural resources. Project construction would require excavation in these areas, which could result in a significant impact on tribal cultural resources. As discussed under Impact CR-2, implementation of SFPUC Standard Archaeological Measures I (Archaeological Discovery), II (Archaeological Monitoring), and III (Archaeological Testing) would be required for the project. In compliance with these standard construction measures and **Mitigation Measure M-TC-1, Tribal Cultural Resource Archaeological Resource Program**, a qualified archaeological consultant would develop an archaeological monitoring plan/archaeological testing plan for planning department review prior to construction, when more detail on required excavations at each location has been developed. The plan would outline the requirements for worker archaeological resources awareness training, including local Native American cultural sensitivity training, and construction monitoring in areas of high potential for prehistoric resources, including monitoring by a local Ohlone representative. The representative would be offered the opportunity to monitor archeological field investigations in areas of high sensitivity for pre-contact resources and to consult regarding the appropriate treatment of any Native American discoveries, whether preservation in place or data recovery and, if applicable, interpretation of the site and the recovered materials. If a pre-contact resource is discovered, a tribal cultural resources preservation plan and/or interpretation plan produced in consultation with the archaeological consultant and affiliated tribal representatives, and approved by the planning department environmental review officer, would be required to guide the preservation and/or interpretive program. If data recovery consistent with the procedures outlined in SFPUC standard archaeological measures II and III is implemented, the tribal cultural resources interpretation plan would identify, as appropriate, proposed locations for land acknowledgement, displays, or installations, the proposed content and materials of those displays or installations, the producers or artists of the displays or installations, and a long-term maintenance program for physical and digital materials. Implementation of Mitigation Measure M-TC-1, Tribal Cultural Resources Archaeological Resource Program and SFPUC Standard Archaeological Measure I (Archaeological Discovery), SFPUC Standard Archaeological Measure II (Monitoring), and SFPUC Standard Archaeological Measure III (Testing), which set forth procedures for identification, protection, and treatment of archaeological resources, would ensure that any potential tribal cultural resource encountered during construction excavation is promptly recognized, appropriately treated, and, if applicable, subject to an interpretive program developed in consultation with the associated Native American tribal representatives. Impacts on tribal cultural resources would be less than significant with mitigation.

Operation

Repair and replacement of newly installed facilities as part of ongoing maintenance activities in the future may require ground disturbance. Because these facilities would occur in the same footprint as previously disturbed by project construction, the potential to encounter tribal cultural resources is low. The SFPUC implements Standard Construction Measure 9, Cultural Resources (including archaeological measures I, II, and III) for all construction projects that include soil disturbance. With implementation of this standard construction requirement and Mitigation Measure M-TC-1, Tribal Cultural Resource Archaeological Resource Program, as described above for construction, impacts on tribal cultural resources would be less than significant.

Mitigation Measure M-TC-1: Tribal Cultural Resources Archaeological Resource Program

Native American Construction Monitoring and Sensitivity Training. A local Native American representative shall monitor soils disturbance in areas of high potential for prehistoric resources. The SFPUC or archaeological consultant shall select an Ohlone representative and the representative shall provide input on the work locations, types of soil disturbance, and appropriate timing and intensity of Native American construction monitoring. At minimum, the Native American monitor would be informed of any Native American archaeological discoveries and would participate in any subsequent testing, treatment, and monitoring relative to such discoveries. The local Native American representative, at their own discretion, shall provide a Native American cultural sensitivity training to all project contractors to inform them that the project is on Ohlone homelands; of the significance of potential tribal cultural resources; and of their role in protecting such resources should any be found during construction.

Preservation in Place or Data Recovery. In the event of the discovery of an archaeological resource of Native American origin, the Environmental Review Officer (ERO), the SFPUC, and the local Native American representative shall consult to determine whether preservation in place would be feasible and effective in mitigating project effects on the tribal cultural resource. Coordination shall take place with the previously identified Native American monitor. If it is determined that preservation-in-place of the tribal cultural resource would be both feasible and effective, then the archeological consultant shall prepare an archaeological/tribal cultural resource preservation plan (Preservation Plan) in consultation with the local Native American representative, which shall be implemented by the SFPUC during construction. The consultant shall submit a draft Preservation Plan to Planning for review and approval, and SFPUC would implement the approved plan prior to further ground disturbing activity in the area to ensure that the resource is protected.

If the ERO, in consultation with the local Native American representatives and the SFPUC, determines that preservation-in-place of the tribal cultural resources is not feasible, or would not sufficiently mitigate the impact to the tribal cultural resource, then archaeological data recovery shall be implemented as required by the ERO, consistent with procedures set forth in SFPUC standard archaeological measures II and III, and in consultation with affiliated Native American tribal representatives.

Land Acknowledgement and Interpretive Program. After data recovery has been completed, the SFPUC, in consultation with local Native American representatives including the Association of Ramaytush Ohlone, and with the archaeological consultant as needed, shall prepare a Tribal Cultural Resources Interpretation Plan (TCRIP) to guide the program. The TCRIP should describe the content, medium, and location of planned program material as well as long-term maintenance programs for physical and digital materials. The TCRIP shall be submitted to ERO for review and approval prior to implementation of the program.

The land acknowledgement may consist of a physical plaque installed on the project site or another medium as determined through consultation with local Native American representatives. Interpretation would be either a physical installation, digital content, or other interpretive elements agreed upon by the ERO, SFPUC, and local Native American representatives. Tribal cultural resources interpretation and land acknowledgement may be planned jointly with archaeological

interpretation, at the discretion of SFPUC in consultation with the tribe, the archaeological consultant, and the ERO.

Upon approval of the TCRIP and prior to project operation or completion, the interpretive program shall be implemented by the SFPUC. Local Native American representatives who are substantially involved in preparation or implementation of the interpretive program shall be appropriately compensated by the SFPUC.

Impact C-TC: The proposed project, in combination with the cumulative projects, would not result in a significant cumulative impact on tribal cultural resources. (Less than Significant)

The geographic scope for cumulative tribal cultural resource impacts encompasses areas within or immediately adjacent to the proposed project sites; impacts on tribal cultural resources are site specific.

All of the cumulative projects identified are assumed to involve some degree of ground disturbance during construction and, therefore, have the potential to uncover and disturb previously unidentified tribal cultural resources. The proposed project's impacts would be less than significant with required implementation of SFPUC Standard Archaeological Measures I (Archaeological Discovery), II (Archaeological Monitoring), and III (Archaeological Testing), by requiring identification/discovery efforts, testing/evaluation, and either preservation in-place or archaeological data recovery, and implementation of an interpretive program for tribal cultural resources. Because these impacts are site-specific and generally limited to the immediate construction area, the proposed project, in combination with other reasonably foreseeable cumulative projects, would not result in a significant cumulative impact on tribal cultural resources. This impact would be less than significant.

E.6. Transportation and Circulation

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
6.	**TRANSPORTATION AND CIRCULATION— Would the project:**					
a)	Involve construction that would require a substantially extended duration or intensive activity, the effects of which would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit?	☐	☐	☒	☐	☐
b)	Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations?	☐	☐	☒	☐	☐
c)	Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access?	☐	☐	☒	☐	☐
d)	Substantially delay public transit?	☐	☐	☒	☐	☐
e)	Cause substantial additional vehicle miles travelled or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network?	☐	☐	☒	☐	☐
f)	Result in a loading deficit, the secondary effects of which would create potentially hazardous conditions for people walking, bicycling, or driving; or substantially delay public transit?	☐	☐	☒	☐	☐
g)	Result in a substantial vehicular parking deficit, the secondary effects of which would create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit?	☐	☐	☒	☐	☐

In accordance with its transportation impact analysis guidelines,[38] the planning department uses significance criteria to facilitate the transportation analysis and address the CEQA Guidelines Appendix G checklist criteria. The department separates the significance criteria into construction and operation. Significance criterion E.6(a) addresses construction impacts while significance criteria E.6(b) through E.6(g) address operational impacts. Operational activities that involve construction, such as the repair and replacement of equipment, are assessed in the construction impact analysis below.

[38] San Francisco Planning Department, *Transportation Impact Analysis Guidelines*, October 14, 2019.

Existing Conditions

The project would install electrical system infrastructure within approximately 10 miles of city streets and existing substation facilities. The following generally describes the existing transportation and circulation conditions of the project area.

Regional Roadways

Portions of the project sites are located within 0.25 mile of various regional roadways: Interstate 280 (I-280); U.S. Highway 101 (U.S. 101); Highway 1; and State Route 35.

Local Roadways

The distribution alignment is located predominantly within public streets, and within some private streets, located within industrial, commercial, and residential neighborhoods. In addition to public rights-of-way, proposed distribution lines would also be installed on a private road (i.e., The Olympic Club) and on private and state-owned parking lots (i.e., The Olympic Club and the Cow Palace Upper lot, respectively).

Bicycling Conditions

On-street bicycle facilities include city-designated routes that are part of the San Francisco bicycle network. Bicycle routes are classified as *class I, class II, class III*, or *class IV* facilities. Class I bikeways are bike paths with exclusive rights-of-way for use by bicyclists, with minimal cross flow by motorized vehicles. Class II bikeways are bike lanes striped within the paved areas of roadways and established for the exclusive use of bicyclists. Class III bikeways are signed bike routes that allow bicycles to share streets with vehicles. Class IV bikeways are on-street separated bikeways reserved for bicyclists, with physical separation between the bikeway and travel lanes. The proposed project alignments are adjacent to and/or cross various bikeways at multiple locations:[39,40,41]

- Class I bikeway: Lake Merced Boulevard
- Class II bikeways: Brotherhood Way, Sagamore Street, Geneva Avenue, Alemany Boulevard, and Bayshore Avenue
- Class III bikeways: Lake Merced Boulevard, Holloway Avenue, Geneva Avenue, and Alana Way

Walking Conditions

Pedestrian facilities generally include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape and landscape amenities (e.g., benches, tree-lined buffers, planters, bulb-outs, street lighting). Pedestrian facilities vary across the distribution alignment street network.

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39 SFMTA. 2019. *San Francisco Bike Map*. May 30. Available at: https://www.sfmta.com/sites/default/files/pdf_map/2019/05/sf_bike_map2019_5.31.19.pdf.

40 San Francisco Bicycle Coalition. 2014. *San Francisco Bike Map & Walk*ing Guide. Available at: https://www.sfbike.org/wp-content/uploads/2014/03/SF_Bike_Map_and_Walking_Guide_2014.pdf

41 City of Daly City. 2004. Bicycle Master Plan. February 9.

Public Transit Conditions

The proposed project alignments for the new distribution lines follow, are adjacent to, and/or cross various municipal bus routes at multiple locations,[42,43,44] including the following:

- San Francisco MUNI:
    - Lines 18 and 122 along Lake Merced Boulevard
    - Line 29 along Holloway Avenue and along Byxbee Street
    - Line M and M-OWL at Randolph Street and Arch Street
    - Line 54 along Sagamore Street and Plymouth Avenue
    - Line 14X at San Jose Avenue and Sickles Avenue
    - Line 88 at Sickles Avenue and Alemany Boulevard
    - Lines 8AX, 8BX, 8X, 9, 9R, 43, 54, 91, 24, and 29 along Geneva Avenue
    - Lines 14, 14L, 14X, 88 along Mission Street
    - Line 121 along Lowell Street
    - Line 43 along South Hill Boulevard and on Curtis Street at Prague Street
    - Lines 8X, 8BX, 9, 56, 91, KT, 292, 397, and T-OWL along Bayshore Boulevard
    - Line 56 along Alana Way
- San Mateo County SamTrans:
    - Lines 24, 120, 121, 130, and ECR on Mission Street
    - Lines 29 and 121 on Bellevue Avenue
    - Lines 292, 397, and Brisbane-Bay along Bayshore Boulevard

Emergency Access Conditions

Emergency vehicle access to the project sites is provided by the surrounding public and private street network (most of the project sites are located within or adjacent to city streets). As described in section B.1, there are five fire stations and one police station within one-quarter mile of project sites.

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42 SFMTA. 2019. *San Franc*isco Transit Map. Winter-Spring. Available at: https://www.sfmta.com/sites/default/files/pdf_map/2019/06/sfmta-metro-06.12.2019-web.pdf.

43 SamTrans. 2018. *Bus Route Map.* Available at: http://www.samtrans.com/Assets/maps/SamTrans+Maps/SamTrans_Peninsula_Vertical_8-2018.pdf.

44 Google Earth. 2019. Google Earth Map. Accessed on October 10, 2019.

Loading Conditions

The project sites are located along approximately 10 miles of city streets, portions of which likely contain passenger loading zones, commercial loading zones, or no stopping/tow away zones.

Significance Criteria

The criteria for determining the significance of impacts for the proposed project are consistent with the environmental checklist in Appendix G of the CEQA Guidelines, as modified by the department in the 2019 San Francisco Transportation Impact Analysis Guidelines.

Implementation of the proposed project would have a significant effect on transportation and circulation if:

Construction of the project would have a significant effect on the environment if it would require a substantially extended duration or intense activity; and the effects would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with accessibility for people walking or bicycling or substantially delay public transit.

Operation of the project would have a significant effect if it would:

- Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.
- Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.
- Substantially delay public transit.
- Cause substantial additional VMT or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network.
- Result in a loading deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit.
- Result in a substantial vehicular parking deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit.

Impact Evaluation

The following describes the transportation-related features of the project not described in detail in Section A, Project Description.

Construction Trips

Project-generated trips are comprised of those made by construction workers traveling to and from the project sites and hauling truck trips associated with the excavation and transport of construction materials. As stated in the project description, project construction would occur concurrently at different locations, with separate work crews at the substations and along the distribution lines. Each work crew is expected to

have five to nine construction workers. Approximately 19,660 one-way haul truck trips are estimated for construction. Truck trips would be centralized around Martin and Potrero substations, but also distributed across the portions of the city where distribution line work would occur. Martin substation construction would average 7.3 one-way truck trips per day, Potrero substation would average 1.5 one-way truck trips per day, and the remaining truck trips would be distributed along the trenching activity at an average rate of 10 one-way truck trips per work-crew-day, or 176 one-way truck trips per city block.

Traffic generated by construction vehicles at each location on the distribution line would average approximately 10 one-way haul truck trips (five round trips) and 10 to 18 worker vehicle trips (five to nine round trips) per work-crew day. Haul truck trips would occur intermittently during the day; worker trips are assumed to occur at the beginning and end of the workday during the a.m. and p.m. peak hours.

Under the typical construction scenario, assuming five crews were to work concurrently at different project sites, the total construction vehicle trips per day would be 50 one-way haul truck trips (25 round trips) and 50 to 90 one-way worker vehicle trips (25 to 45 round trips). Under this scenario, project construction would take two years.

Under the accelerated construction scenario of 15 crews working concurrently, the total construction vehicle trips per day would be 150 one-way haul truck trips (75 round trips) and 150 to 270 one-way worker vehicle trips (75 to 135 round trips) per day. Under this scenario, proposed project construction would take approximately one year.

The actual number of truck trips would vary depending on the number of crews working concurrently.

Standard Construction Traffic Control Measures

As described in Section A.5.11, SFPUC Standard Construction Measure 4 (Traffic), traffic control measures would be implemented as a part of the proposed project to minimize potential impacts from truck traffic on circulation and reduce potential safety hazards associated with proposed construction activities. These traffic control measures would conform to the municipal transportation agency's Blue Book and other local regulations and encroachment permit requirements. The traffic control measures may include, but would not be limited to:

- Scheduling truck trips during non-peak hours to the extent feasible. In the event of travel lane closure, installation of advanced warning signs to provide road users advance notice of lane shift and to minimize hazards associated with shifting travel lanes.
- Deployment of flaggers where workers or equipment would temporarily block a travel lane for access into and out of a construction area.
- Use of flaggers, illuminated signs, a temporary stop sign, or a combination of these methods to slow approaching traffic where construction trucks are making wide turns.
- Implementation of roadside safety protocols, such as advanced "Road Work Ahead" warning signs and speed control (including signs informing drivers of state-legislated double fines for speed infractions in a construction zone) to achieve required speed reductions for safe traffic flow.

- Storage of all equipment and materials in designated staging areas to minimize obstruction of traffic.

Impact TR-1: Project construction would not require a substantially extended duration or intensive activity, the effects of which would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit. (Less than Significant)

The 2019 transportation impact analysis guidelines set forth screening criteria for types of construction activities that would typically not result in significant construction-related transportation effects. According to the guidelines, construction impact analysis considers the intensity of project construction activities as well as the anticipated duration and site context. Project construction that is not multi-phased or longer than 30 months at one location is generally considered not to be of an extended duration or intensity. This project meets the screening criterion because the overall project construction would be less than 30 months and the longest construction at one location (the Potrero and Martin substations) would be approximately 12 months or less and would not involve construction within the public right-of-way. Duct bank installation in the public right-of-way would advance approximately 40 feet per day as distribution lines are installed. At this rate, construction would take about three to four weeks on a 700-foot-long city block. In addition, the areas surrounding the proposed alignment are well served by other roadways and have adequate facilities for people walking, biking, and public transit.

Potentially Hazardous Conditions

The proposed project would result in a temporary increase in vehicular traffic traveling to and from the various project sites. The project would generate a maximum of approximately 150 one-way truck trips and 270 construction worker trips (one-way trips) per day under the most intensive construction scenario, assuming 15 crews are working concurrently; fewer trips would be generated if fewer crews were used. These vehicle trips would be spread out geographically given the dispersed work locations. Most of the construction activities for the new distribution line installation and distribution separation work would occur on public streets, which would require the temporary closure of travel lanes and the temporary occupancy of on-street parking spaces. To the extent possible, at least one lane of traffic would be open during construction and access would be provided to adjacent properties. Open trenches would be covered with steel plates during evenings and weekends. Construction along the distribution line would proceed at approximately 40 feet per day, so the construction duration along any city block would be short-term, generally about two to four weeks, depending on the length of the city block. Installation of equipment at the substations would occur entirely within the substations.

Construction activities affecting the public right-of-way within San Francisco must comply with the San Francisco Transportation Code, and the San Francisco Public Works Code. The transportation code provides the authority for the municipal transportation agency's Regulations for Working in San Francisco Streets, also known as the *Blue Book*. The Blue Book is a manual for city agencies, utility crews, private contractors, and others doing work in San Francisco streets. Among other things, the public works code regulates construction operations (e.g. excavation or street closure) in the public right-of-way so that these actions are carried out while maintaining public safety and convenience. Depending on the type of construction activity (i.e., proposed travel lane and sidewalk closures), a permit approval by the municipal transportation agency may first require recommendation for approval from the Transportation Advisory Staff Committee, a multi-agency review body.

For construction activities affecting the public right-of-way in Daly City and Brisbane, the contractor must obtain encroachment permits from these jurisdictions, which would provide similar requirements for work in streets. Through the permit review and approval process, appropriate detours and signage would be required to maintain circulation and the safety of vehicles, bicyclists, and people walking. Because lane closures would be temporary, at least one lane of traffic would be open at most locations and, if necessary, detours would be provided in accordance with local regulations, project construction would not result in hazardous conditions to vehicles, bicyclists, and people walking.

Bicycling

The proposed project would require the temporary closure of travel lanes and bicycle lanes, which would require rerouting bicycle lanes during construction. These closures would be short-term, approximately three to four weeks per city block, as construction advances along the proposed alignment. Despite the reduction in roadway capacity, bicyclists would continue to be able to share the roadway with vehicular traffic. As discussed above, appropriate detours, signage, and/or flaggers would be required to maintain bicyclist circulation and safety.

The proposed project would generate construction vehicle traffic along streets which are part of the citywide bicycle network. Because the truck volumes that would be generated by each construction site on the distribution alignment are low (approximately 10 one-way trucks per work-crew day) and would be dispersed throughout the day and the construction locations, potential conflicts between bicyclists and trucks would be low and generally similar to existing conditions. Similarly, the proposed project would generate construction worker vehicle trips (one-way trips) during both the a.m. and p.m. peak hours within the same bicycle network; these vehicle trips would be dispersed throughout the project area. The construction worker vehicle trips would not create any substantial queues or block access for bicyclists.

For these reasons, the proposed project would not create potentially hazardous conditions for bicyclists or interfere with bicycle accessibility.

Walking

Project construction could require temporary closure of sidewalks adjacent to work sites on streets during the distribution line installation and distribution separation work. Generally, sidewalks on the opposite side of the street would remain open for pedestrians. In accordance with the Blue Book, local regulations, and SFPUC Standard Construction Measure 4 (Traffic), the SFPUC would ensure that pedestrian access is maintained for all users, and that pedestrians are notified of alternative pedestrian access routes and detours by posting adequate signage. For these reasons, the proposed project would not create potentially hazardous conditions for people walking or interfere with pedestrian accessibility.

Public Transit Operations

The proposed project would require the temporary closure of travel lanes and bus stops, which would require rerouting bus lines and relocating bus stops during construction. To comply with SFPUC Standard Construction Measure 4 (Traffic), Blue Book, and local regulations, appropriate detours and signage would be required to maintain transit circulation and avoid delays.

Construction would generate up to 135 construction worker vehicle trips during the a.m. and the p.m. peak hours on roads that may have transit operations. The trips would be spread along streets to access the

construction sites and would not cause potential conflict with transit operation or substantially delay public transit. As described under traffic circulation above, approximately 150 one-way truck trips) would access 15 construction sites daily. Per the SFPUC Standard Construction Measure 4 (Traffic), truck trips would be scheduled during non-peak hours when feasible. Trucks may cause a few seconds of delay due to slower movements and larger turning radii. The few seconds of delay would not conflict with transit operation or substantially delay public transit.

Project construction would not create potentially hazardous conditions for public transit operations or cause substantial delays.

Emergency Access

Of the fire stations within 0.25 miles of the proposed project, three are located in close proximity to the project alignment. San Francisco Fire Department Station 33 is located on Capitol Avenue approximately 200 feet south of the proposed distribution line alignment on Sagamore Street. North County Fire Authority Station 92 is located along a portion Bepler Street where distribution separation work is proposed. North County Fire Authority Station 91 is located on Lake Merced Boulevard; there is a proposed connection/disconnection point in the roadway adjacent to this fire station. No police department stations exist along the project alignment. The street network serving the project vicinity currently accommodates the movements of emergency vehicles. The proposed project would have temporary impacts on traffic flow and lane configurations near the distribution line and distribution separation construction areas. Emergency vehicle access and access to adjacent properties would be maintained throughout construction.

Furthermore, the traffic control measures included as a part of SFPUC's Standard Construction Measure 4 (Traffic) would require coordination with local emergency responders to maintain emergency access. These measures would conform to the Blue Book and other local regulations and would specify the circulation and detour plans during construction and require the contractor to notify the police and emergency responders of any lane or road closure and traffic control measures to be implemented. Compliance with the requirements of municipal transportation agency and San Francisco Public Works (or those of other local jurisdictions) and implementation of the traffic control measures included in SFPUC's Standard Construction Measure 4 (Traffic) would minimize potential impacts to emergency access. Although the proposed project would temporarily generate additional traffic, such an increase in vehicles would not impede or hinder the movement of emergency vehicles in the project vicinity because California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes (California Vehicle Code section 21806). The impact to emergency access would be less than significant because emergency access would be maintained on local roads throughout the duration of construction.

Conclusion

Active construction of the proposed project and ongoing operation, maintenance, inspection and repairs of infrastructure associated with the electricity system would not require a substantially extended duration or intensive activity. With implementation of SFPUC's Standard Construction Measure 4 (Traffic) and compliance with the Blue Book and local regulations, project construction would not create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit. Impacts would be less than significant.

Impact TR-2: Operation of the project would not result in significant transportation impacts (Less than Significant)

After project construction is completed, vehicular circulation, pedestrian and bicycle access would be restored to existing conditions. Project operations would be generally similar to existing operations, requiring routine inspections, repair and maintenance of the electrical system. While the SFPUC would employ approximately 50 new people to conduct field operations for the infrastructure assets, the expected number of field operations staff, locations of the assets, and operational requirements would be generally similar to existing conditions. These operations would generally occur in the public right-of-way and could include temporary closure of travel lanes, bicycle lanes, and sidewalks. These types of activities are discussed above under Impact TR-1.

Project operations are anticipated to include approximately 200 new employees, of which 150 would be located at the SFPUC headquarters for administrative support and 50 would be located at the SFPUC operations center at Pier 23 and deployed for field operations. The project would conservatively generate 450 trips daily to/from the SFPUC headquarters and 200 trips daily to/from the Pier 23 offices. During the p.m. peak hour, this would result in approximately 36 vehicle trips at the SFPUC offices and 12 vehicle trips at Pier 23.[45] Project operations would not result in a substantial number of new vehicle trips during the p.m. peak hour at each office location. Each office site is well served by public transit. Passenger and commercial loading zones are conveniently located in the vicinity of the office lobbies. For these reasons, operation of the proposed project would not result in potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; interfere with accessibility for people walking or bicycling, or result in inadequate emergency access; result in substantial transit delay; cause substantial additional VMT or substantially induce additional automobile travel; result in a loading deficit; or result in a substantial vehicular parking deficit.

Impact C-TR: The proposed project, in combination with the cumulative projects, would not contribute considerably to adverse cumulative transportation conditions. (Less than Significant)

The cumulative analysis considers the construction-phase traffic of the proposed project and cumulative projects where construction schedules would overlap. The geographic scope for potential cumulative impacts includes roadways where the cumulative projects have the potential for overlapping effects with the proposed project (i.e., use of same roadways).

Construction of the proposed project and cumulative projects could result in a significant cumulative transportation impact if combined construction activities would result in potentially hazardous conditions or interfere with access for pedestrians, bicyclists, motorists, transit operations, and emergency vehicles. The proposed project, and all cumulative projects, would be required to comply with the constraints of excavation permits and the Blue Book or local encroachment permit requirements. In addition, certain projects may require a Special Traffic Permit from SFMTA. As part of the Special Traffic Permit process for capital projects, SFMTA prepares traffic specifications that allow for defined lane reductions during certain hours, and SFMTA would document any transit coordination that has been determined between the project(s) and Muni during design phase field meetings. The SFPUC would implement traffic control measures to reduce potential safety hazards associated with the project construction activities in accordance with Standard

[45] San Francisco Planning Department, PG&E Power Asset Acquisition Project – Travel Demand, January 14, 2021.

Construction Measure 4 (Traffic). The measures would conform to the Blue Book and, in the event of lane closure may include, but would not be limited to, installation of advanced detour signs to notify users regarding the detour. Compliance with construction transportation regulations such as the Blue Book, Special Traffic Permit, excavation permit, encroachment permit, and implementation of SFPUC Standard Construction Measure 4 (Traffic), would result in less-than-significant cumulative impacts on transportation conditions.

Operation of the proposed project and cumulative projects could result in a significant cumulative transportation impact if combined activities would result in potentially hazardous conditions or interfere with access for pedestrians, bicyclists, motorists, transit operations, and emergency vehicles. Project operations would not result in a substantial number of new vehicle trips during the p.m. peak hour resulting from new employees at each office location and would not contribute considerably to any potential cumulative transportation impact. Cumulative impacts on transportation conditions would be less than significant.

E.7. Noise

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
7. NOISE—Would the project:					
a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐	☐
b) Generate excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐	☐
c) For a project located in the vicinity of a private airstrip or an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☐	☒

The project sites are not located in the vicinity of a private airstrip or an airport land use plan area. Therefore, Topic E.7(c) is not applicable and is not discussed further.

Existing Noise Sources and Levels

The project sites encompass a total of approximately 10 miles of underground power distribution lines and four substations located in a variety of settings from quiet residential neighborhoods and golf courses, to busy commercial corridors and industrial areas. There are various noise sources in the vicinity, including vehicle traffic on nearby highways, traffic along adjacent roadways, Bay Area Rapid Transit, Caltrain and MUNI trains, and nearby industrial facilities.

According to the San Francisco General Plan, Background Noise Level Map, noise levels within the project vicinity are expected to range from 50 dBA[46] to over 70 dBA L_{dn}, depending on proximity to rail lines and high-volume roadways such as I-280 and Highway 101.[47,48] Noise measurements at the Martin substation show average noise levels of 78 dBA L_{dn}.[49] In the vicinity of the Martin substation around Geneva Avenue in

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46 The A-weighted sound level (dBA) is a sound pressure measurement that de-emphasizes the very low- and very high-frequency components of the sound. The de-emphasis of the very low and high frequencies mimics the frequency response of the human ear and correlates well with subjective reactions to noise.

47 The DNL or Ldn is the Leq, or Energy Equivalent Level, of the A-weighted noise level over a 24-hour period with a 10-dB penalty applied to noise levels between 10 p.m. to 7 a.m.

48 City and County of San Francisco Planning Department, Department of Public Health, Areas Potentially requiring Noise Insultations: Date: March 2009. https://sfplanning.org/sites/default/files/resources/2019-09/Noise.pdf

49 California Public Utilities Commission, 2003. PG&E Jefferson-Martin 230 kV Transmission Line Project Draft EIR, p. D.11-17. July. Available at: https://www.cpuc.ca.gov/Environment/info/aspen/jefferson_martin/deir/text/D11_Noise.pdf.

Daly City, noise levels range from 65-70 dBA CNEL.[50,51] In the vicinity of the Potrero substation, noise measurements indicate that daytime ambient noise levels average 67 dBA.[52]

Noise-Sensitive Receptors

Noise-sensitive receptors generally include hospitals, skilled nursing/convalescent care facilities, schools, daycares, churches, libraries, and residences. Sensitive receptors, predominantly residences, are located adjacent to the distribution alignment, and the Randolph and Plymouth substations. The nearest sensitive receptors to the PG&E Martin substation are residences across Geneva Avenue located approximately 200 feet north. The nearest existing sensitive receptors to the PG&E south switchyard at the Potrero substation are located at a distance of approximately 300 feet; future residents of the Potrero Power Station Mixed-Use Development Project would be located at a distance of approximately 50 feet, as shown on **Figure 8**.

Existing Vibration Sources

The Caltrain railroad tracks, located within 0.25 mile of the electrical distribution alignment near the Bayshore Caltrain Station, are an existing source of vibration.[53] A portion of the project sites on the distribution alignment are also located along the municipal transportation agency KT-Ingleside/Third Street light rail route, which is also a source of vibration.

Vibration-Sensitive Receptors

Receptors sensitive to vibration include structures (especially older masonry structures), people (especially residents, the elderly and the sick), and equipment (e.g., magnetic resonance imaging equipment, high-resolution lithographic, optical and electron microscopes).[54] Potential vibration-sensitive structures in proximity to the project sites include buildings and infrastructure that may be damaged as a result of proposed construction activities. Additionally, the nearest vibration-sensitive individuals are residents located along the distribution alignments.

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50 CNEL is a weighted average of noise level over time. It is used to compare the noisiness of neighborhoods. CNEL is a single number result that is calculated for a complete 24-hour period.

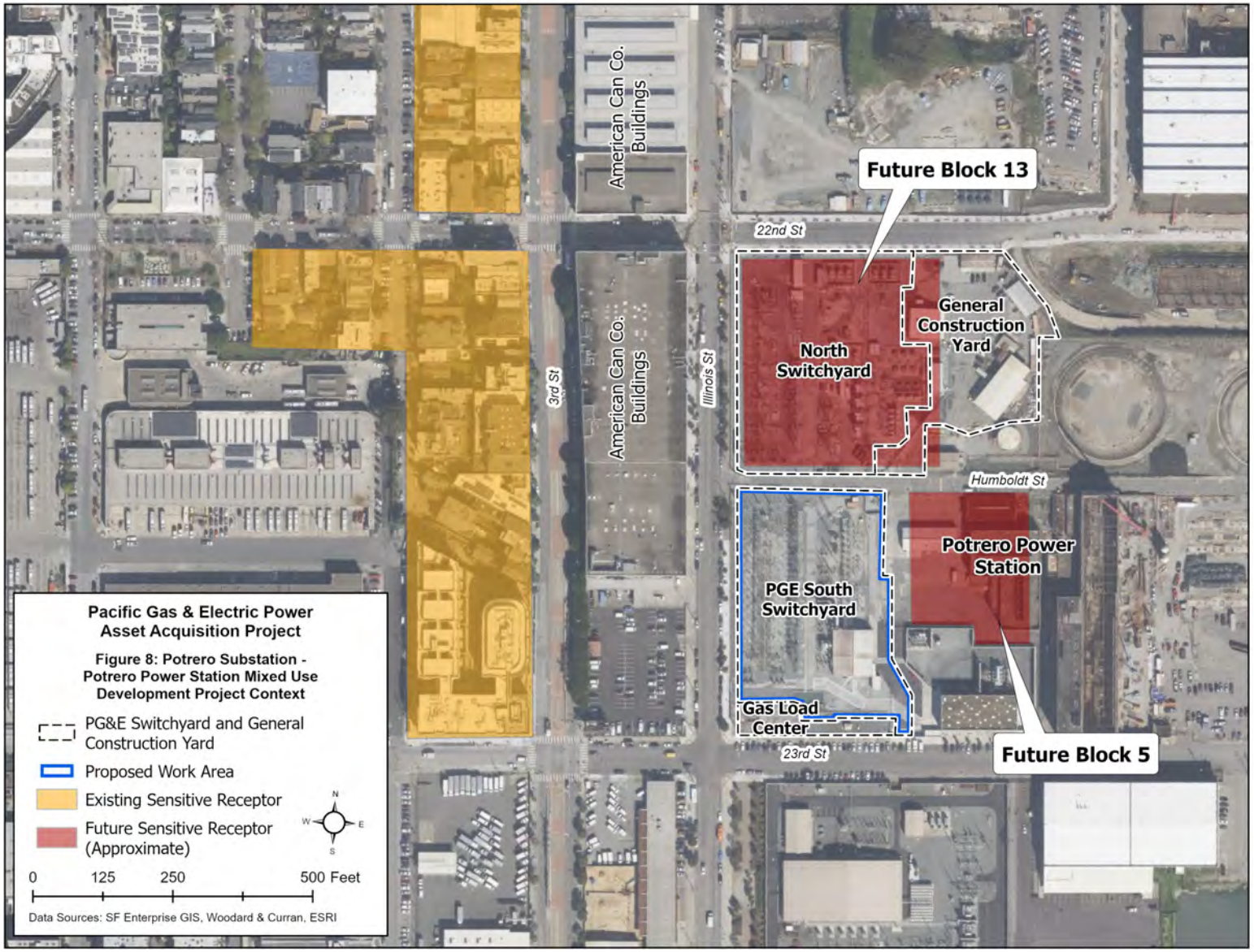
51 City of Daly City. 2013. *Daly City 2030 General Plan, Noise Element*, Figure NE-3, p. 208. March 25. Available at: https://www.dalycity.org/DocumentCenter/View/874/2030-General-Plan-PDF?bidId=

52 San Francisco Planning Department. 2018. *Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005.* Table 4.F-2. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

53 Vibration is the physical manifestation of energy carried through the earth and structures. Groundborne vibration consists of rapidly fluctuating motions or waves. It has the potential to annoy people and damage buildings. The most common descriptor used to quantify construction vibration amplitude in relation to impacts to structures is the peak particle velocity (PPV), defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec).

54 United States Department of Transportation, Federal Transit Administration, Office of Planning and Environment. Transit Noise and Vibration Impact Assessment Manual, September 2018. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Figure 8: Potrero Substation - Potrero Power Station Mixed-Use Development Project Context



Applicable Noise Standards

City and County of San Francisco

The San Francisco noise ordinance is codified in police code sections 2907 through 2909.

Police code sections 2907 and 2908 regulate construction equipment and construction work at night. Police code section 2907(a) limits noise from construction equipment to 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance. Exemptions to this requirement include impact tools with approved mufflers, pavement breakers, and jackhammers with approved acoustic shields, and construction equipment used in connection with emergency work. Police Code section 2908 prohibits nighttime construction (between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dBA at the nearest property line unless a special permit has been issued by the city. On public properties, sections 2907 and 2908 are enforced by Public Works.

Police code section 2909 regulates noise from any machine, device, entertainment, or combination of such sources. Police code section 2909(c) generally prohibits fixed mechanical equipment noise 10 dBA more than the ambient noise level on public property at a distance of 25 feet or more, unless the machine or device is being operated to serve or maintain the property. Police code section 2909(d) sets the maximum allowable interior noise from fixed mechanical equipment within a dwelling unit at 45 dBA between 10 p.m. and 7 a.m. and 55 dBA between 7 a.m. to 10 p.m.

County of San Mateo

The San Mateo County Code of Ordinances (chapter 4.88) provides exterior and interior noise level standards for daytime and nighttime noise at sensitive receptor locations. Construction noise is exempt from the provisions of the chapter provided construction activities occur between 7 a.m. to 6 p.m. weekdays and 9 a.m. to 5 p.m. on Saturdays.

City of Brisbane

The City of Brisbane municipal code (chapter 8.28) limits construction to the hours of 7 a.m. to 7 p.m. Monday through Friday, and 9 a.m. to 7 p.m. on Saturdays, Sundays, and holidays. No individual piece of construction equipment shall produce a noise level exceeding 83 dBA as measured at 25 feet, and limits construction noise to 86 dBA at the property line. Mechanical noise shall not exceed the local ambient noise level to any receiver by more than 10 dBA for a cumulative period of more than 10 minutes per hour, more than 20 dBA for more than 3 minutes per hour, or a noise level more than 30 dBA.

Daly City

The Daly City municipal code does not have any restrictions on construction noise. Section 9.22.030 addresses disturbing the peace and has no quantitative limits; it prohibits noise disturbance between 10 p.m. and 6 a.m. The Daly City 2030 General Plan states that construction noises are regulated through the environmental review process by the Engineering and Planning Division. Typically, construction activities are limited to the daytime hours, 8 a.m. to 5 p.m., and prohibited on weekends and holidays. The general plan noise compatibility guidelines define normally acceptable noise levels for residential use at 60 dBA CNEL.

Impact NO-1: Project construction would cause a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Less than Significant with Mitigation)

This impact analysis evaluates the potential for construction equipment to generate noise levels in excess of standards established in local noise ordinances using the default reference noise levels compiled by the Federal Highway Administration for the types of equipment proposed to be used onsite. The analysis also assesses the potential for construction-related noise to cause a substantial temporary or periodic increase in ambient noise levels at the closest sensitive receptors. The planning department uses the Federal Transit Administration general assessment construction impact guidelines, in part, to analyze potential daytime construction noise impacts. The general assessment compares the two loudest pieces of equipment operating simultaneously at the same location against the residential daytime criteria of 90 dBA at nearby sensitive receptors. The planning department also considers whether construction noise would result in an increase of 10 dBA over existing daytime noise levels at the nearest sensitive receptor. Nighttime construction noise is evaluated for its potential to result in sleep disturbance. If these quantitative standards are exceeded, the evaluation then considers the duration and severity of the exceedance to determine whether the project would result in a substantial temporary increase in noise levels. In those instances where the use of construction equipment would be limited in duration (usually less than two weeks) and frequency, it is reasonable to assume a less-than-significant noise impact and a detailed construction noise analysis is not generally required.

Construction of the proposed project would temporarily generate noise. Noise levels associated with the construction equipment anticipated to be used during construction of the proposed project are listed in **Table 11**. Construction would generally occur Monday through Friday from 7 a.m. to 5 p.m.; however, work could extend to 8 p.m. depending on local restrictions (or to 7 p.m. within the City of Brisbane).

Noise Ordinance Compliance

Because no nighttime construction would occur (8 p.m. to 7 a.m. in San Francisco and 7 p.m. to 7 a.m. in Brisbane), project construction would not take place outside the construction time limits of the noise regulations and would not result in sleep disturbance at nearby sensitive receptor locations.

In accordance with SFPUC Standard Construction Measure 5 (Noise), the project would comply with local noise ordinances for regulating construction noise. For construction in San Francisco, non-impact equipment operating between 7 a.m. and 8 p.m. would need to comply with the section 2907 requirement limiting noise levels to 80 dBA at a distance of 100 feet from the equipment. Noise attenuates at a rate of 6 dBA per doubling of distance; therefore, noise levels that exceed 86 dBA at 50 feet would exceed the noise limit established by section 2907. Impact equipment, such as pile drivers and jackhammers, are exempt from the noise ordinance.

With the exception of concrete saws (up to 84 dBA at 100 feet), no non-impact equipment would emit noise levels in excess of the San Francisco noise ordinance criterion of 80 dBA at 100 feet. At Potrero substation, pile driving may be necessary if space constraints require stacking of the STATCOM units; however, impact equipment are exempt from the noise ordinance. In Brisbane, various construction equipment operating between 7 a.m. and 7 p.m. would emit noise levels in excess of the noise limit of 83 dBA at 25 feet. In unincorporated San Mateo county, construction is exempt from noise level standards unless construction occurs outside the construction hours listed above. While general construction is expected to be within

those construction hours, it is possible that construction could extend beyond those hours and be subject to the noise thresholds. In accordance with SFPUC Standard Construction Measure 5 (Noise), the SFPUC would comply with local noise ordinances. In order to comply with the local noise ordinances, the SFPUC would use best available noise control technologies on equipment (i.e., mufflers, ducts, acoustically attenuating shields, locate stationary noise sources (i.e., pumps and generators) away from sensitive receptors, erect temporary noise barriers, and other such measures as needed to reduce construction noise. Therefore, construction activities would comply with the local noise ordinances.

Table 11: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dBA, Lmax at 25 feet)	Noise Level (dBA, Lmax at 50 feet)	Noise Level (dBA, Lmax at 100 feet)
Concrete Saw	*96*	**90**	**84**
Impact Pile Driver[1]	*107*	**101**	**95**
Vibratory Pile Driver[1]	*107*	**101**	**95**
Loader	*85*	79	73
Excavator	*87*	81	75
Auger Drill Rig	*90*	84	78
Grader	*91*	85	79
Compactor	*89*	83	77
Dump Truck	82	76	70
Flatbed Truck	80	74	68
Concrete Truck	*87*	81	75
Forklift (gas-powered)	*89*	83	77
Generator	*87*	81	75
Air Compressor	*86*	80	74
Roller	*86*	80	74
Crane	*87*	81	75
Backhoe	82	76	82
Paver	83	77	71
San Francisco Noise Ordinance Limit[1]	92	86	80
Brisbane Municipal Code (any construction equipment)	83	77	70

SOURCES:

U.S. Department of Transportation, Federal Highway Administration, 9.0 Construction Equipment Noise Levels and Ranges, Table 9.1, RCNM Default Noise Emission Reference Levels and Usage Factors, *Construction Noise Handbook*, Updated July 2011. Available online at http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm;

U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006. Available online at http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf.

[1] The San Francisco Noise Ordinance exempts impact equipment, such as pile drivers.

Noise Impacts on Receptors Along Distribution Alignments, and Randolph and Plymouth Substations

Construction along the distribution alignments and the distribution separation work would be located primarily on public and private streets adjacent to residential, commercial, and industrial uses. As such, the nearest sensitive receptors could be within 15 feet of proposed project sites. Construction of the

underground distribution line and vaults would proceed in a linear fashion along each street, such that no individual home would be affected for long durations. As described in the project description, typically work would occur on an open trench length of 100 to 400 feet on an individual city block at any one time. Portions of the excavated trench would be covered with steel trench plates while distribution line installation would advance approximately 40 feet per day within the trench. Construction activities in front of individual residences would be brief, and construction within 100 feet of any residence would be less than one week. The construction duration on the longest city block, about 700 feet, is estimated to be three to four weeks. Similarly, construction of the underground distribution line and vaults at the Randolph and Plymouth substations is estimated to take less than one week at each substation; additional connection work not involving heavy equipment may continue intermittently at these substations for up to six months. Typical construction equipment listed in Table 11 would be used, with the exception of particularly noisy equipment such as pile drivers. Due to the short duration of construction activities near sensitive receptors, such equipment would not result in a substantial temporary increase in ambient noise levels and construction noise impacts would be less than significant.

Potrero and Martin Substation Construction Noise Impacts on Existing Nearby Receptors

Construction activities at the Potrero and Martin substations would entail similar construction equipment for excavations of duct bank alignments and foundations, installation of concrete equipment pads, and conduits and equipment. The estimated duration of construction at each substation is approximately 12 months. The closest sensitive receptors to the northern portion of the Martin substation, where work would occur, are residences located to the north across Geneva Avenue, approximately 200 feet away. The closest existing sensitive receptors to the PG&E south switchyard in the Potrero substation are residences approximately 300 feet west along Third Street. In the future, with development of the Potrero Power Station Mixed-Use Project, residences would be located approximately 50 feet from the PG&E switchyard, as shown in Figure 8. Because the timing of project construction is uncertain, noise impacts on future residents are separately evaluated in the subsection below.

Using FTA methodology, noise levels resulting from simultaneous operation of the two noisiest pieces of equipment were estimated for typical construction activities at the PG&E Martin and Potrero substations and are presented in **Tables 12** and **13,** respectively. As indicated in Table 12, the maximum combined daytime noise levels at 50 feet during project construction at the Martin substation would be approximately 91 dBA (L_{eq}). Noise levels would attenuate with distance to approximately 79 dBA at the closest sensitive receptor approximately 200 feet from the Martin Substation, assuming no intervening structures. As shown in Table 13, the maximum combined daytime noise levels at 50 feet from construction activity at the Potrero substation would be 101.3 dBA, which would attenuate to approximately 86 dBA at the closest sensitive receptor, approximately 300 feet from the project site. This would be the maximum noise level if pile driving were needed and would occur for a duration of approximately 12 days. If pile driving is not needed, then a concrete saw and grader would be the two noisiest pieces of construction equipment. Assuming the simultaneous operation of this equipment, construction noise levels would be 91 dBA at 50 feet from the equipment and would attenuate to approximately 76 dBA at the closest sensitive receptor. Given the presence of intervening buildings, actual noise levels at sensitive receptors would be lower than calculated. As shown in Table 12 and Table 13**,** maximum construction noise levels from construction at both the Martin and Potrero substations would be below FTA daytime construction noise criteria of 90 dBA at noise sensitive receptors.

Table 12: Estimated Maximum Noise Levels from Project Construction Activities at Martin Substation at the Nearest Sensitive Receptor

Equipment	Hourly Noise Level (dBA L_{eq}) at 50 Feet	Distance to Receptor (feet)	Estimated Construction Noise Level (dBA L_{eq}) Adjusted for Distance
Concrete Saw and Grader	91	200	79

Table 13: Estimated Maximum Noise Levels from Project Construction Activities at Potrero Substation at the Nearest Existing Sensitive Receptor

Equipment	Hourly Noise Level (dBA L_{eq}) at 50 Feet	Distance to Receptor (feet)	Estimated Construction Noise Level (dBA L_{eq}) Adjusted for Distance
Concrete Saw and Pile Driver (if STATCOM units are stacked and pile driving needed)	101	300	86
Concrete Saw and Grader (if STATCOM units are not stacked and pile driving is not needed)	91	300	76

Ambient noise levels in the vicinity of the Potrero substation were identified from noise measurements collected for the Potrero Power Plant Mixed-Use Development Project EIR. These measurements indicate that daytime ambient noise levels average 67 dBA.[55] In the vicinity of the Martin substation around Geneva Avenue in Daly City, noise levels range from 65-70 dBA CNEL, based on information in the Daly City general Plan.[56]

The planning department also considers whether construction noise would result in an increase of 10 dBA over existing daytime noise levels at the nearest sensitive receptor. Therefore, based on ambient noise levels in the vicinity, persistent noise levels at sensitive receptors exceeding 77 dBA from Potrero substation construction and 75 dBA from Martin substation construction would exceed the 10 dBA above ambient criteria. With the exception of the no pile driving scenario at the Potrero substation prior to construction of the Potrero Power Station Mixed Use Project, construction noise would exceed the planning department's 10 dBA increase above ambient noise level criteria. Construction noise levels would be expected to vary during the construction period, as the mix of equipment needed for specific construction activities is different. Typically, noisy excavation equipment required during the initial phase would be replaced by

55 San Francisco Planning Department. 2018. Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005. Table 4.F-2. October 3. Available at: sfplanning.org/sfceqadocs.

56 City of Daly City. 2020. *Daly City 2030 General Plan, Noise Element*, Figure NE-3, p. 208. Available at: https://www.dalycity.org/DocumentCenter/View/903/Noise-Element-PDF

smaller equipment during the more detailed work for placement and connection of conduits in trenches. It is not anticipated that the two noisiest pieces of equipment, analyzed in Tables 12 and 13, would operate simultaneously the entire year, rather that these noise level exceedances could occur intermittently during construction. For example, pile driving would only occur for 12 days (if needed) and concrete saws are generally used for relatively detailed demolition work, such as opening up a specific area for excavation, and the duration and frequency of their use is usually not extensive. However, because the duration of the construction period would be substantial, approximately one year, construction noise at the Martin substation would be considered a significant impact. Given that construction at the Potrero site would only exceed 10 dBA above ambient noise levels in the event pile driving is required and for only 12 days, construction at the Potrero substation, under the assumption that sensitive receptors are 300 feet away from construction activities, would not be considered a substantial temporary increase in ambient noise levels and this impact at the Potrero substation would be less than significant. However, as discussed below, in the event sensitive receptors occupy buildings closer to the site, at 50 feet from construction activities, and under cumulative conditions, the project's construction noise impact at the Potrero substation is considered significant. To reduce the potential noise impacts of the project, **Mitigation Measure M-NO-1: Construction Noise Control** would be implemented to reduce construction noise impacts. Implementation of Mitigation Measure M-NO-1: Construction Noise Control requires the SFPUC and its construction contractor to develop and implement feasible noise control measures during construction, considering site constraints. The construction noise control plan shall be developed with a performance target of reducing construction noise levels to below 90 dBA and 10 dBA above ambient noise levels at sensitive receptor locations. Measures in the construction noise plan would directly lessen construction noise levels and the durations of exceedances of these quantitative criteria through various methods including, but not limited to, the following: (1) placing a barrier between the sensitive receptor(s) and the noise sources; (2) use of best available noise control techniques; (3) locating noisy stationary equipment as far as possible from sensitive receptors; and (4) alternative methods of pile driving. For example, use of exhaust mufflers and noise jackets can reduce equipment noise by 10 dBA and effective noise barriers typically reduce noise levels by 5 to 10 dBA.[57] Additional measures include requirements to identify a construction noise manager, track and respond to complaints, and noise monitoring. These measures would serve to lessen construction noise increases and durations of exceedances of the quantitative criteria at sensitive receptor locations. With implementation of Mitigation Measure M-NO-1: Construction Noise Control, the expected duration and intensity of construction noise would be reduced to a less-than-significant level.

Potrero Substation Construction Noise Impacts on Future Receptors

Construction of the proposed Potrero Power Station Mixed-Use Development project is planned to occur in six phases, beginning in 2022 through 2034. Because the timing of the proposed project is uncertain, it is possible that project construction would occur after some residents have occupied the mixed-use development project, which would result in the presence of new residential receptors closer to the proposed project construction area than under current conditions. Future planned development at the Potrero Power Station Mixed-Use project includes residential development and a daycare use in proximity to the project site. Construction of Block 5, approximately 50 feet east of the project site (see Figure 8), is scheduled to occur between 2027-2031; construction of Block 13 on the PG&E switchyard north of Humboldt Street, about 90 feet from the project site, is estimated to occur between 2030-2034. This analysis considers potential noise impacts if construction of the proposed project would occur after residential development is established on the adjacent property and residents occupy the new development. As shown in **Table 14**, the

[57] FHWA, Keeping the Noise Down, Highway Traffic Noise Barriers, February 2001.

maximum combined daytime noise levels at the Potrero substation would be 101.3 dBA at the closest future sensitive receptor located 50 feet from construction activity, which would exceed the FTA's daytime noise criteria for residential uses. This noise level assumes that pile driving would be necessary and would occur for a limited duration. Using the current ambient noise conditions as the basis for the ambient noise criteria (67 dBA),[58] construction noise at the nearest receptor would be in excess of 10 dBA above ambient noise levels and thus also exceed this criterion. If pile driving is not implemented, the combined noise levels would still exceed both FTA 90 dBA noise level and the 10 dBA above ambient noise criteria. As discussed above, it should be noted that the two noisiest pieces of equipment, analyzed in Table 14 below, would be used intermittently and would not be operating simultaneously the entire year. The duration of pile driving, if needed, would be approximately 12 days. However, because construction noise levels would substantially exceed the 10 dBA above ambient criteria (by as much as 24 dBA) even in the no pile driving scenario and because the duration of construction would be approximately one year, project construction noise on future residents at the Potrero Power Station Mixed-Use Project would be significant and **Mitigation Measure M-NO-1: Construction Noise Control** would be required. For the reasons discussed above, Mitigation Measure M-NO-1: Construction Noise Control would substantially lessen the duration and intensity of construction noise exceedances to less than significant.

Table 14: Estimated Noise Levels from Project Construction Activities at Potrero Substation at the Nearest Future Sensitive Receptor

Combined Equipment	Hourly Noise Level (dBA L_{eq}) at 50 Feet	Distance to Receptor (feet)	Estimated Construction Noise Level (dBA L_{eq}) Adjusted for Distance
Concrete Saw and Pile Driver (if STATCOM units are stacked and pile driving needed)	101	50	101
Concrete Saw and Grader (if STATCOM units are not stacked)	91	50	91

Mitigation Measure M-NO-1: Construction Noise Control

SFPUC shall require its contractor to implement a project-specific construction noise control plan for construction at the Martin Substation. The SFPUC shall require its contractor to implement a project-specific noise control plan for construction at the Potrero Substation if any of the following apply: the Potrero Power Plant Mixed-Use Development project construction occurs at the same time as project construction; or, if future residents have occupied the Potrero Power Plant Mixed-Use Development by the time project construction occurs.

The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include all feasible measures to reduce construction

58 San Francisco Planning Department. 2018. Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005. Table 4.F-2. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

noise. The construction noise control plan shall identify noise control measures to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA (1-hour Leq) and 10 dBA above the ambient noise level at noise sensitive receptors (nearby residents and childcare uses). The construction noise control plan shall include the following measures, or other effective measures, to reduce construction noise levels:

- Use construction vehicles and equipment that is in good working order and inspect mufflers for proper functionality.
- Select "quiet" construction methods and equipment (such as improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields) for all equipment and trucks.
- Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors.
- Prohibit idling of inactive construction equipment for more than five minutes.
- Use alternative methods to impact pile driving (such as drilled piles, sonic pile drivers, auger cast-in-place) where feasible, in consideration of geotechnical and structural requirements and conditions.
- Where the use of driven impact piles cannot be avoided, properly fit impact pile driving equipment with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer.
- Use electrically powered equipment instead of pneumatic or internal-combustion powered equipment, where feasible. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- Locate stationary noise-generating sources (such as generators) as far away as possible from noise-sensitive receptors, muffle such noise sources, and construct barriers around such sources and/or the construction site.
- Enclose or shield stationary noise sources from neighboring noise-sensitive uses with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas if feasible.
- Install temporary barriers, barrier-backed sound curtains and/or acoustical panels around working powered impact equipment and, if necessary, around the project site perimeters. When temporary barrier units are joined together, the matting surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise.

The construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures and monitoring of construction noise levels:

- Designation of an on-site construction noise manager for the project;
- Notification of neighboring noise sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., pier drilling, pile driving, and other activities that may generate noise levels greater than 90 dBA at noise sensitive receptors or noise levels that may exceed 10 dBA above ambient noise levels) about the estimated duration of the activity;

- A sign posted on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- A procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- A list of measures for responding to and tracking complaints pertaining to construction noise. Such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation) and during high-intensity construction activities (e.g. pile driving) to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures.

Impact NO-2: Project operations would cause a substantial permanent increase in ambient noise levels at noise-sensitive receptors above levels existing without the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Less than Significant with Mitigation)

The proposed project would result in the installation of new transformers at the Martin substation and HVAC systems at the Potrero substation, which would produce operational noise. Proposed equipment at the Randolph and Plymouth substations, the underground duct banks, and the separated distribution lines are not expected to generate noise. This impact analysis evaluates the potential for new equipment to generate noise levels in excess of standards established in local noise ordinances, including the Brisbane and Daly City noise ordinances described above for project components at the Martin substation. For project components in San Francisco, the analysis uses police code section 2909 to evaluate operational noise. For this project, an increase of 10 dBA above ambient levels at 25 feet from the noise source or an exceedance of the daytime or nighttime interior noise limit of 55 dBA and 45 dBA, respectively at the closest sensitive receptors is considered to be a substantial noise increase.[59] Compliance with these local noise ordinances are appropriate significance thresholds because the ordinances address the potential for operational noise to cause a substantial increase in ambient noise levels and address increases in noise at sensitive receptors.

Proposed above-ground project components at the Martin substation include two control houses, two bus tie breakers, two 115/12 kV transformers, and eight circuit breakers. Underground electricity equipment, such as duct banks and vaults, are not considered to result in operational noise. Of the proposed equipment, the two transformers would emit noise during operation. Based on the type of transformers proposed, each transformer could generate up to 55 dBA at 6 feet;[60] when combined, two transformers would generate noise levels of 58 dBA.[61] Transformer noise consists of two components: a pure-tone or "hum" noise and noise from cooling fans.[62] The tonal quality of the "hum" may be considered irritating. The Governor's Office of Planning and Research General Plan Noise Element Guidelines indicate that the computed noise exposure

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59 The 45-dBA nighttime interior noise limit is equivalent to an exterior limit of 60 dBA with the windows open because it assumes a 15-dBA reduction is achieved by the building with the windows open. Similarly, the 55-dBA daytime interior noise limit is equivalent to an exterior limit of 70 dBA assuming a 15-dBA reduction is achieved by the building with the windows open.

60 National Electrical Manufacturers Association. 2019. NEMA Standards Publication TR 1-2013 (R2019) Transformers, Step Voltage Regulators and Reactors.

61 OMNI calculator, sound pressure distance attenuation calculator. Available at: https://www.omnicalculator.com/physics/distance-attenuation

62 The cooling fans typically would only operate under emergency conditions (e.g., if the system overheats).

values may be adjusted by adding a 5 dB correction to pure-tone noise levels to account for the increased sensitivity of people to tonal noise.[63]

The PG&E Martin substation is located in the City of Brisbane, but the nearest sensitive receptors are residences in Daly City, across Geneva Avenue, approximately 200 feet north of the substation boundary. At that distance, noise levels from the new transformers at the nearest residence would attenuate to 28 dBA. Adding a 5 dBA correction to the transformer noise level to conservatively account for the pure-tone noise component, the transformer noise level at these receptors would be 33 dBA. The Daly City general plan reports ambient noise levels along Geneva Avenue to be 65 – 70 dBA. Because the transformer noise levels would not exceed the ambient noise levels in the vicinity of the receptor, operational noise would not exceed the Brisbane noise ordinance standards.[64] The transformer noise levels at these receptors would also be below the 60 dBA noise level considered acceptable by the City of Daly City general plan noise compatibility guidelines. Therefore, proposed equipment at Martin Substation would not exceed the local noise ordinance or result in a substantial, permanent increase in ambient noise levels at sensitive receptors and the impact would be less than significant.

At the Potrero substation, if STATCOM units are installed, the HVAC system for each STATCOM unit could generate noise as high as 75 dBA at 30 feet. Assuming three STATCOM units are located adjacent to one another, the combined noise level would be approximately 80 dBA at 30 feet. Police code section 2909(c) generally prohibits fixed mechanical equipment noise that is 10 dBA more than the ambient noise level on public property at a distance of 25 feet or more, unless the machine or device is being operated to serve or maintain the property. In the vicinity of the Potrero substation, noise measurements indicate that ambient daytime noise levels average 67 dBA, respectively.[65] Thus, the proposed equipment would exceed the ambient noise level 25 feet from the property by more than 10 dBA which would be a significant impact. However, it should be noted that because the equipment would be operated to serve the electric substation on public property, the noise exceedance may be allowed by the noise ordinance.

Police code section 2909(d) sets the maximum allowable interior noise within a dwelling unit at 55 dBA between 7 a.m. to 10 p.m. and 45 dBA between 10 p.m. and 7 a.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed. At the nearest existing residential receptor 300 feet away on Third Street, the estimated noise level from new mechanical equipment would attenuate to approximately 65 dBA. Assuming a 15 dB reduction in noise from the building exterior to interior (with windows open), mechanical equipment noise would be 50 dBA. Therefore, operational noise would meet the daytime interior noise limit of 55 dBA, but would exceed the nighttime interior noise limit of 45-dBA. At the nearest future residential receptor 50 feet away in the Potrero Power Station Mixed-Use development, the noise level from the new mechanical equipment is estimated to be up to 76 dBA, which equates to an interior noise level of 61 dBA, exceeding both the daytime and nighttime interior noise standards of 55 dBA and 45 dBA, respectively in section 2909(d). This would be a significant impact. **Mitigation Measure M-NO-2: Fixed Mechanical Equipment Noise Control** is required.

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63 California Governor's Office of Planning and Research, 2020. General Plan Guidelines and Technical Advisories, Appendix D: Noise Element Guidelines, Table 1. Available at: https://www.opr.ca.gov/docs/OPR_Appendix_D_final.pdf.

64 Pursuant to the Brisbane noise ordinance, mechanical noise shall not exceed the local ambient noise level to any receiver by more than 10 dBA for a cumulative period of more than 10 minutes per hour, more than 20 dBA for more than 3 minutes per hour, or a noise level more than 30 dBA. Available at: https://library.municode.com/ca/brisbane/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.28NOCO

65 San Francisco Planning Department. 2018. *Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005.* Table 4.F-2. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

Implementation of Mitigation Measure M-NO-2: Fixed Mechanical Equipment Noise Control would reduce the operational noise levels of mechanical equipment at the Potrero substation by requiring the use of quieter models, mufflers, and/or enclosures as needed to ensure project noise levels do not exceed acceptable noise levels at the nearest sensitive receptor. This impact would be less than significant with the required mitigation.

Mitigation Measure M-NO-2: Fixed Mechanical Equipment Noise Control

The SFPUC shall demonstrate with reasonable certainty that the fixed mechanical equipment at the Potrero substation (such as heating, ventilation and air conditioning [HVAC] equipment) meets the noise limits specified in section 2909c of the noise ordinance (i.e., a 10 dB increase above ambient at a distance of 25 feet or more) and section 2909d interior noise limits of 55 dBA and 45 dBA for daytime and nighttime hours, respectively, assuming windows open, inside any sleeping or living room in any existing or future nearby residential dwelling unit except where building ventilation is achieved through mechanical systems that allow windows to remain closed. Acoustical treatments required to meet the noise ordinance may include, but are not limited to:

- Enclosing or placing barriers around noise-generating mechanical equipment
- Installing relatively quiet models of air handlers, exhaust fans, and other mechanical equipment
- Using mufflers or silencers on equipment exhaust fans
- Orienting or shielding equipment to protect noise sensitive receptors (residents and childcare center) and
- Increasing the distance between noise-generating equipment and noise-sensitive receptors

Impact NO-3: The proposed project would generate excessive groundborne vibration or groundborne noise levels. (Less than Significant with Mitigation)

Vibration Levels

Groundborne vibration from construction activities can produce detectable vibration at nearby buildings, infrastructure, and sensitive receptors. The main concerns associated with construction-generated vibration include sleep disturbance, building or utility damage, and interference with vibration-sensitive instruments or machinery, including instruments or machinery used in research laboratories or hospitals. Potential vibration-related impacts to structures, equipment, utilities, or people from construction are generally limited to the use of impact equipment such as pile drivers, hoe rams, and vibratory compactors. The potential for construction activities to generate vibration affecting each of these receptor types is discussed below, following the discussion of vibration levels that may be generated during construction from various types of equipment. **Table 15** summarizes vibration levels generated by typical heavy construction equipment proposed for use as part of the proposed project at various distances.

Table 15: Construction Equipment Vibration Levels at Various Distances (PPV)

Equipment	5 Feet	10 Feet	15 Feet	25 Feet	50 Feet	75 Feet	100 Feet
Pile driver (impact hammer)[2]	**7.200**	**2.546**	**1.386**	**0.644**	0.228	0.124	0.081
Pile driver (vibratory)	**1.901**	**0.672**	**0.366**	0.170	0.060	0.033	0.021
Caisson drilling	**0.995**	**0.352**	0.191	0.089	0.031	0.017	0.011
Loaded trucks	**0.850**	**0.300**	0.164	0.076	0.027	0.015	0.010
Small bulldozer	0.034	0.012	0.006	0.003	0.001	0.001	0.000
Large bulldozer	**0.995**	**0.352**	0.191	0.089	0.031	0.017	0.011
Vibratory roller	**2.348**	**0.830**	**0.452**	0.210	0.074	0.040	0.026

Notes:
1. Groundborne vibration levels vary based upon the substrate that underlies the site (soil, bedrock, etc.). Calculated using the following formula: Peak Particle Velocity (PPV) equip = PPVref x (Dref/D)1.5. The value of 1.5 is based upon competent soils: most sands, sandy clays, silty clays, gravel, silts, weathered rock (can dig with shovel)
2. Reported ground vibration levels vary considerably due to many factors, including soil types, geology, method, and equipment size; the typical range for impact pile driver and vibratory pile driver are presented.
3. Vibration levels exceeding the 0.3 PPV threshold for potential damage to older residential structures are in **bold.**

Sources:
Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf
California Department of Transportation, Transportation and Construction Vibration Guidance Manual, April 2020. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf

Approach to Analysis

This analysis uses peak-particle velocity (PPV) guidelines from the California Department of Transportation and the Federal Transit Administration to determine whether construction of the proposed project could result in vibration impacts. Because no nighttime construction is proposed, potential construction impacts related to sleep disturbance at residential receptors would not occur and are not analyzed.

Construction

Groundborne vibrations would be generated during construction activities due to the use of heavy equipment and construction truck traffic. Typical vibration levels for equipment that would be used during project construction are provided in Table 15 above. Pile installation (potentially at Potrero substation) using impact hammers would generate the highest level of groundborne vibration. Vibration threshold guidelines for potential damage to various structures are shown on **Table 16**.

Table 16: Vibratory Threshold Guidelines (PPV)

Source Character	Building Damage (Modern Industrial/ Commercial)	Building Damage (Older Residential)	Building Damage (Historic Buildings)	Damage to Underground Utilities
Frequent Intermittent/ Continuous	0.5	0.3	0.25	4.0
Transient	2.0	0.5	0.5	

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Table 19. April 2020. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf

Note: Transient sources create a single, isolated vibration event (e.g. blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, vibratory pile drivers, and vibratory compaction equipment.

Substations

Historic Resources

At the Potrero Substation, the nearest historic structure is the American Can Company Building along Illinois Street (located approximately 100 feet from the western boundary of the PG&E south switchyard), as shown in Figure 8. This structure is a contributing resource to the Third Street Industrial Historic District. The nearest structures within the historic district that are also individually-eligible historic resources under the California Register are the Meter House and Compressor House, located approximately 150 feet east of the eastern boundary of the PG&E switchyard (these buildings will ultimately be demolished as part of the Potrero Power Station Mixed-Use Development Project). Assuming a typical vibration level of 0.23 PPV for impact pile drivers, 0.06 PPV for vibratory drivers, and 0.07 PPV for vibratory rollers at 50 feet, the vibration levels from the use of these equipment would be below the threshold for damage to historic structures from vibration (0.25 in/sec PPV shown in Table 16). Thus, construction of the project at Potrero Substation is not expected to result in damage to buildings that contribute to Third Street Industrial District and no adverse vibratory effects to historic structures are anticipated.

At the Martin Substation historic district, the project construction site would be located approximately 80 feet from the Martin substation building, a historic resource. As no pile driving would occur at this site, the maximum vibration levels from equipment would be generated by vibratory rollers. At a distance of 75 feet, this equipment would generate vibration levels of 0.04 PPV, which would be well below the 0.25 PPV building damage threshold for historic buildings. As a result, construction vibration impacts on the historic resource would be less than significant.

Nearby Buildings and Critical Utilities

As discussed above under Impact NO-1, it is possible that buildings associated with the Potrero Power Station Mixed-Use Project may be constructed prior to project construction. The nearest building would be approximately 50 feet from the PG&E switchyard. Vibration levels from heavy construction equipment would be less than the 0.5 PPV damage threshold for modern buildings at this distance and impacts would be less than significant.

There is one industrial building located within the PG&E south switchyard at the Potrero substation. Vibration levels could exceed the 0.5 PPV damage threshold at this building if impact pile drivers were used

within 30 feet or vibratory pile drivers were used within 13 feet. As noted in the project description, pile driving would only occur if STATCOM units are necessary and need to be stacked due to space constraints. Because vibration levels could cause damage to an existing building or structures in the event pile driving is required, this impact would be significant. Implementation of **Mitigation Measure M-NO-3: Protection of Adjacent Buildings and Utilities and Vibration Monitoring During Construction** would require the SFPUC and/or its contractors to prepare and implement a vibration management and monitoring plan to assess the potential for damage to nearby buildings and critical utility infrastructure from pile driving. The plan will require: 1) a pre-construction survey to document conditions of industrial buildings and natural gas pipeline in the project area; 2) engineering analysis to develop site-specific vibration damage thresholds and performance criteria for stoppage of work; 3) vibration monitoring to detect vibration levels in excess of the standards in the plan and alternative construction techniques to be implemented in that event; 4) inspection of the industrial building and pipeline in the event construction activities exceed the established standards; and, 5) repair of damaged structures caused by the project to pre-project conditions. With implementation of Mitigation Measure M-NO-3, project impacts on buildings and infrastructure from groundborne vibration would be less than significant.

A PG&E natural gas transmission pipeline traverses generally along or adjacent to Illinois Street between 22nd Street and Humboldt Street, along the western portion of Humboldt Street, along the eastern boundary of the PG&E switchyard between Humboldt Street and 23rd Street, and along or adjacent to 23rd Street back to Illinois Street.[66] Because damage to a natural gas transmission pipeline could result in accidental hazards to the public (e.g., explosion), the pipeline is considered a critical structure. Thus, the vibration criteria for buried utility would be applicable to this project. Construction in the Potrero substation could exceed vibration thresholds for potential damage to an underground utility of 4.0 PPV if impact pile driving were to occur within approximately 7.5 feet of the gas pipeline, or if vibratory pile driving were to occur within 3.5 feet of the pipeline. This would be a significant impact. While the precise locations of the STATCOM units have not yet been determined, the SFPUC would coordinate with PG&E as required by law to identify the location of the gas pipeline.[67] PG&E regulations for construction work within 10 feet of a pipeline include the physical presence of a PG&E inspector whenever work within 10 feet of a pipeline is performed; grading and digging standards; the placement of pipeline markers during demolition and construction; standards for construction machinery and loading near and on top of underground pipelines; and limitations on placing landscaping, structures, or fencing within certain distances from the pipeline. These practices, as required by law, are in place to minimize potential construction impacts to underground natural gas pipelines. Further, as required by Mitigation Measure M-NO-3: Protection of Adjacent Buildings and Utilities and Vibration Monitoring During Construction, a site-specific vibration monitoring plan would be developed if pile driving is needed which would establish more specific vibration damage thresholds, vibration monitoring, criteria for stopping work, alternative construction techniques, inspection and repair of damaged structures. These requirements would ensure that construction vibration would not damage the gas transmission line and the impact would be less than significant.

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66 PG&E. Explore our natural gas transmission pipeline map. https://www.pge.com/en_US/safety/how-the-system-works/natural-gas-system-overview/gas-transmission-pipeline/gas-transmission-pipelines.page. Accessed 14 May 2020.

67 California Government Code 4216 requires advance notification of excavation to a regional notification center (USA North). PG&E is required to arrange a field meeting when a USA ticket is requested for work within 10 feet of a gas transmission pipeline. Available: https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=5.&title=1.&part=&chapter=3.1.&article=2.

Mitigation Measure M-NO-3: Protection of Adjacent Buildings and Utilities and Vibration Monitoring During Construction

In the event that the SFPUC determines that pile driving is required at the Potrero Substation, the SFPUC shall first avoid:

a) impact pile driving within 30 feet or vibratory pile driving within 13 feet of the industrial building located within the PG&E south switchyard; and

b) impact pile driving within 7.5 feet or vibratory pile driving within 3.5 feet of the PG&E natural gas transmission pipeline.

If it is not possible to avoid pile driving within the distances described above for the industrial building and the PG&E natural gas transmission pipeline, then the SFPUC shall undertake the following additional measures.

Prior to the start of any pile-driving activity at the Potrero Substation, the SFPUC and/or its contractor shall prepare a Pre-Construction Survey and Vibration Management and Monitoring Plan. The plan shall identify all feasible means to avoid vibration induced damage to the potentially affected industrial building and the PG&E natural gas pipeline at the PG&E south switchyard in the Potrero substation. The SFPUC shall ensure that the following requirements are included in contract specifications, as necessary.

Pre-construction Survey. Prior to the start of any ground-disturbing activity, the SFPUC or its contractor shall engage a consultant to undertake a pre-construction survey of the potentially affected industrial building and natural gas pipeline at the PG&E south switchyard. A structural engineer or other professional with similar qualifications shall document the existing conditions of the potentially affected industrial building and natural gas pipeline (e.g., records review, inspection, and photographs).

The Vibration Management and Monitoring Plan shall include, at a minimum, the following components, as applicable.

- *Maximum Vibration Level.* Based on the anticipated construction methods and condition of the affected industrial building and natural gas pipeline, a qualified acoustical/vibration consultant, in consultation with a structural engineer or other qualified professional, shall establish a maximum vibration level that shall not be exceeded at the industrial building and natural gas pipeline based on existing building and pipeline conditions, soil conditions, and anticipated construction practices (common standards are a PPV of 0.5 inch per second for modern industrial/commercial buildings and a PPV of 4.0 for underground utilities).
- *Buffer Distances.* The plan shall identify buffer distances for construction equipment to maintain vibration levels below thresholds at the structures (e.g., 0.5 PPV in/sec for the existing building at the Potrero south switchyard and 4.0 PPV in/sec for the gas pipeline).
- *Alternative Construction Equipment and Techniques*. The plan shall identify potential alternative construction equipment and techniques that could be implemented to reduce

construction vibration levels to below established standards in the event vibration monitoring indicates vibration levels may exceed the maximum vibration level identified in the plan (e.g. pre-drilled piles, pile blocks, smaller equipment).

- *Vibration Monitoring*. The plan shall identify the method and equipment for vibration monitoring. To ensure that construction vibration levels do not exceed the established standard, the acoustical/vibration consultant shall monitor vibration levels at the potentially affected industrial building and natural gas pipeline and prohibit construction activities that generate vibration levels in excess of the standard.
    - Should construction vibration levels be observed in excess of the standards established in the plan, the contractor shall halt construction and put alternative construction techniques identified in the plan into practice.
    - The structural engineer (or other qualified professional) shall inspect the potentially affected industrial building and natural gas pipeline in the event the construction activities exceed the established standards.
    - If vibration damage has occurred, the structural engineer shall immediately notify the SFPUC and prepare a damage report documenting the features of the building and/or structure that has been damaged.
- *Damage Repair*. The plan shall also identify provisions to be followed should damage occur due to construction-related vibration. The building and pipeline shall be remediated to their pre-construction condition at the conclusion of vibration-generating activity on the site.

Distribution Line Work

Construction of duct banks and overhead lines along the proposed distribution alignment would primarily occur within the public right-of-way (e.g. city streets), as is common for utility projects in the city. In addition, duct banks would be installed within the substation properties. Nearby buildings are typically at least 15 feet from project construction sites. Distribution line would require the use of bulldozers and trucks that generate vibration levels ranging from 0.006 to 0.191 PPV. Because vibration levels from construction equipment would be below the vibration building damage threshold of 0.3 PPV for older residential buildings at this distance and the duration of construction at any location would be brief, the potential for vibration damage to nearby buildings would be less than significant.

Operation

The proposed project would involve electricity distribution by the SFPUC in a manner similar to existing PG&E operations. The transformers, STATCOMs, circuit breakers, and bus tie breakers would be installed on concrete pad foundations within the Martin and Potrero substations and would not result in new sources of substantial vibration. Operational impacts related to groundborne vibration would be less than significant.

Impact C-NO: The proposed project, in combination with the cumulative projects, would cause substantial cumulative noise and vibration impacts. (Less than Significant with Mitigation)

Construction

Cumulative construction-related noise increases would occur if any nearby cumulative projects are constructed at the same time as the proposed project and affect the same sensitive receptors as the proposed project for a substantial duration of time. Noise contributions from past and present projects are reflected in ambient noise levels within the project vicinity. The geographic extent for the cumulative impact analysis for noise is limited to cumulative projects within 1,000 feet of the project sites because noise levels and vibration attenuate with distance and line of sight obstructions.

Construction of the cumulative projects would involve use of equipment and vehicles that would generate noise. As discussed above, project construction of the duct banks along the distribution alignment and within the Randolph and Plymouth substations, and the distribution separation work would be within 100 feet of any location for less than a week, and less than three to four weeks on a given block. While cumulative projects may be constructed at the same time in the vicinity, because project construction would overlap with construction of cumulative projects for only a brief period of time, cumulative construction noise impacts along the alignments would not be substantial (less than significant).

Project construction at the PG&E Martin is estimated to take approximately one year to complete. Nearby cumulative projects that could be under construction at the same and affect the same sensitive receptors as project construction are limited to the Brisbane Baylands Specific Plan. The western boundary of the Brisbane Baylands Specific Plan area is located approximately 200 feet east of the Martin Substation. The buildout of the specific plan would occur over an approximately 30-year period, and include four distinct construction activities: demolition and deconstruction; landfill closure and site remediation of the former railyard area, including excavation of approximately 5 million cubic yards of soil; grading and soil import; construction of buildings and infrastructure. [68] No construction schedule is currently available pending environmental review and project approval; therefore, this analysis conservatively assumes that construction could overlap with project construction at the Martin Substation. Construction noise levels from demolition, earthmoving, pile driving, and construction for the Brisbane Baylands Specific Plan are expected to be significant. Because the Baylands site is located between 100-700 feet from the residences along Geneva Avenue across from the Martin substation, construction noise would affect some of the same sensitive receptors and the cumulative construction noise levels would be significant. The duration of the project's contribution to the significant cumulative noise impact (approximately one year) would be minor with respect to the 30-year buildout of the specific plan area. The construction activities associated with the Baylands site would be far more intensive (noisy) than those proposed under the project. Further, project construction noise would be reduced to less-than-significant levels with implementation of M-NO-1, Construction Noise Control. For these reasons, the project's contribution to the cumulative construction noise impact would not be considerable (less than significant).

Project construction at the Potrero substation PG&E switchyard is estimated to take approximately one year. Nearby cumulative projects that are likely to be under construction at the same time and affect the same receptors as the project include the Potrero Power Station Mixed-Use Development (with a 14-year

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68 City of Brisbane, 2020. Brisbane Baylands Specific Plan Notice of Preparation of an Environmental Impact Report. P. 14. February 20. Available at: https://www.brisbaneca.org/sites/default/files/fileattachments/baylands/page/14672/finalbaylandsnop2-20-2020.pdf.

construction schedule), located immediately adjacent to the project site, and the Pier 70 Mixed Use District Project (with a 10-year construction schedule), located about one quarter mile to the north. Construction of the Potrero Mixed-Use Development is planned to occur in six phases, beginning in 2022 through 2034 with the highest noise levels ranging from 79 dBA to 94 dBA at 50 feet.[69] The EIRs for each of these nearby projects found significant construction noise and cumulative construction noise impacts. The proposed project's construction noise could combine with the noise from these two projects and the existing sensitive receptors along Third Street and future residents of these development projects could experience significant cumulative construction noise impacts from overlapping construction schedules. Therefore, cumulative noise impacts would be significant. Given the 14-year construction schedule for the Potrero Power Plant Mixed-Use Project and the 10-year construction schedule for Pier 70 Mixed Use District, the significant cumulative noise impact would persist for an extended duration, increasing its severity on nearby sensitive receptors. Due to the project's estimated noise levels at sensitive receptors (in particular future residents), one-year construction duration, the project's construction noise contribution would be considerable (significant).

To reduce project-level construction noise impacts, implementation of **Mitigation Measure M-NO-1: Construction Noise Control**, described above under Impact NO-1, would be required. The noise control measures required by this measure would serve to lessen the project's contribution to cumulative construction noise increases at sensitive receptor locations. With implementation of Mitigation Measure M-NO-1, Construction Noise Controls, the duration and intensity of the project's contribution to cumulative construction noise would be less than cumulatively considerable.

Operation

Noise-generating equipment would be installed at the Martin and Potrero substations. As discussed above in Impact NO-2, operational noise impacts from the two transformers at the Martin substation generate noise levels of 58 dBA at 6 feet, which would be a less-than-significant impact. Noise level measurements at the Martin substation indicate that ambient noise levels are 78 dBA, and ambient noise levels along Geneva Avenue range from 65 to 70 dBA. The existing ambient noise environment would be predominant and the transformers would not contribute appreciably to cumulative noise levels.

Noise impacts from STATCOM units, if required at the Potrero substation, would be significant. The Potrero Power Station Mixed-Use Development Project is located in close proximity to this site, and includes rooftop HVAC units estimated to generate noise levels as high as 75 dBA at 30 feet;[70] a noise level equivalent to the project's stationary equipment noise. Together, the cumulative noise impacts from operation of stationary equipment at both projects would be significant because the combined noise level would exceed interior noise ordinance standards based on the proximity of future residents to both rooftop HVAC units and the proposed HVAC systems for the STATCOM units. Because the project would contribute approximately half of the cumulative mechanical equipment noise, its contribution would be considerable. **Mitigation Measure M-NO-2, Fixed Mechanical Equipment Noise Controls**, as described above under Impact NO-2, would reduce the operational noise levels of mechanical equipment at the Potrero substation by requiring the use of quieter models, mufflers, and enclosures as needed to ensure project operational noise levels do not

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69 San Francisco Planning Department. 2018. *Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005.* P. 4F-33. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

70 San Francisco Planning Department. 2018. Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005. P. 4F-56. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

exceed 10 dBA above the ambient level at 25 feet and interior noise levels at nearby sensitive receptors do not exceed 55 dBA during daytime hours and 45 dBA during nighttime hours. With implementation of Mitigation Measure M-NO-2, the project's contribution to the cumulative noise impact would be not be considerable.

Vibration

Construction and Operation

A cumulative vibration impact would occur when vibration from cumulative projects combine to exceed the thresholds at the same infrastructure or sensitive receptor. Because vibration attenuates rapidly with distance, cumulative projects would need to be under construction within very close proximity and at the same time as project construction for this to occur. The nearest cumulative project, the Potrero Power Station Mixed-Use Project would be located 50 feet from the project site. Because vibration impacts are highly localized and attenuate with distance, cumulative construction vibration impacts would not occur and this impact would be less than significant. The proposed project does not have the potential to result in cumulative vibration impacts from operation because the proposed project would not result in groundborne vibration.

E.8. Air Quality

Topics:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
8.	**AIR QUALITY—Would the project:**					
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard?	☐	☒	☐	☐	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐	☐

Setting

Air Basins

San Francisco Bay Area Air Basin

The Bay Area Air Quality Management District (Bay Area air district) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin, which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa Counties and portions of Sonoma and Solano Counties. The Bay Area air district is responsible for attaining and maintaining air quality in the San Francisco Bay Area Air Basin within federal and state air quality standards, as established by the federal Clean Air Act and the California Clean Air Act, respectively. Specifically, the Bay Area air district has the responsibility to monitor ambient air pollutant levels throughout the San Francisco Bay Area Air Basin and develop and implement strategies to attain the applicable federal and state standards. The state and federal Clean Air Acts require plans to be developed for areas that do not meet air quality standards.

The most recent air quality plan, the *2017 Clean Air Plan,*[71] was adopted by the Bay Area air district on April 19, 2017. The *2017 Clean Air Plan* updates the most recent ozone plan, the *2010 Clean Air Plan*, in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and greenhouse gases in a single, integrated plan; and establish emission control measures to be adopted or implemented. The *2017 Clean Air Plan* contains the following primary goals:

- Protect air quality and health at the regional and local scale: Attain all state and national air quality standards, and eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and

71 Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 19, 2017

- Protect the climate: Reduce Bay Area greenhouse gas emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The *2017 Clean Air Plan* represents the most current applicable air quality plan for the San Francisco Bay Area Air Basin. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of air quality plans.

Criteria Air Pollutants

In accordance with the state and federal Clean Air Acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. The state and federal air quality standards were developed to protect public health and welfare. Exposure to these criteria air pollutants, even for a short-term period, may increase the risk of health effects.

In general, the San Francisco Bay Area air basin experiences low concentrations of most pollutants when compared to federal or state standards. The air basin is designated as either in *attainment*[72] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which the air basin is designated as non-attainment for the state and/or federal standards. By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, the project's impact on air quality would be considered significant.[73]

Projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. **Table 17** identifies the air quality significance thresholds for the San Francisco Bay Area Air Basin. Projects that result in criteria air pollutant emissions below these significance thresholds would not result in a cumulatively considerable net increase of any non-attainment criteria pollutant.

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

73 Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, May 2017. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 17: Criteria Air Pollutant Significance Thresholds for the San Francisco Bay Area Air Basin

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Source: Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Ozone Precursors. As previously discussed, the San Francisco Bay Area air basin is currently designated as non-attainment areas for ozone and particulate matter. Ozone is a secondary air pollutant that is produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NOx). Ozone can cause respiratory problems (e.g., chest pain, coughing, throat irritation) and exacerbate existing respiratory problems, such as asthma and bronchitis.[74]

The potential for a project to result in a cumulatively considerable net increase in non-attainment criteria air pollutants is based on the state and federal emissions limits under the state and federal Clean Air Acts, respectively, for stationary sources. To ensure that new stationary emission sources do not cause or contribute to a violation of an air quality standard, air district regulations (regulation 2, rule 2 for the Bay Area air district) require any new source that emits criteria air pollutants above a specified emissions limit to offset those emissions from the ozone precursors ROG and NOx. These offsets reduce emissions to levels at which new sources are not anticipated to contribute to an air quality violation, leading to potential health effects, or result in a considerable net increase in criteria air pollutants.

Although this regulation applies to new or modified stationary sources, projects, such as the proposed project, result in ROG and NO_x emissions as a result of increases in vehicle trips, maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of projects and those projects that result in emissions below these thresholds would not result in a considerable net increase in ROG and NOx emissions. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)[75]. PM_{10} particles are a threat to health because they can enter the lungs and are small enough that the respiratory system cannot naturally filter them out. PM_{10} can exacerbate

74 United States Environmental Protection Agency, *Criteria Air Pollutants.* 2018, *https://www.epa.gov/criteria-air-pollutants,* accessed March 8, 2019.

75 PM_{10} is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or smaller. $PM_{2.5}$, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

asthma and bronchitis and potentially contribute to premature death. $PM_{2.5}$ is considered more hazardous to human health than PM_{10} because it can contain a larger variety of dangerous components than PM_{10} and can travel farther into the lungs, potentially causing scarring of lung tissue and reduced lung capacity.[76]

The air district has established thresholds of significance for PM_{10} and $PM_{2.5}$ based on the emissions limit in the federal New Source Review for stationary sources in non-attainment areas. The emission limits identified in Table 17 represent levels at which a source is not expected to have an impact on the region's air quality.[77] Similar to ozone precursor thresholds identified above, projects typically result in particulate matter emissions as a result of increases in vehicle trips, maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a project. Because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Fugitive Dust. Fugitive dust emissions, comprised primarily of PM_{10}, are typically generated during construction phases. Studies have shown that the application of best management practices at construction sites significantly controls fugitive dust,[78] and individual measures have been shown to reduce fugitive dust from 30 to 90 percent.[79] The Bay Area air district has identified a number of best management practices to control fugitive dust emissions from construction activities.[80] The city's Construction Dust Control Ordinance (ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust, and the best management practices employed in compliance with the Construction Dust Control Ordinance are an effective strategy for controlling construction-related fugitive dust.

Toxic Air Contaminants

In addition to criteria air pollutants, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. The human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but rather are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis that evaluates human health exposure to toxic

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76 United States Environmental Protection Agency, Health and Environmental Effects of Particulate Matter, https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm accessed May 20, 2021.

77 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, page 2-2, May 2017. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

78 Western Regional Air Partnership, WRAP Fugitive Dust Handbook, 2006, http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf, accessed May 5, 2016.

79 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, page D-47, May 2017. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

80 Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, May 2017. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

substances; this assessment, considered together with information regarding the toxic potency of the particular substances, yields quantitative estimates of health risks.[81]

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's daycare centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 7 days per week, for 30 years.[82] Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to fine particulate matter ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and impaired lung development in children as well as hospitalization for cardiopulmonary disease.[83] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The California Air Resources Board (California air board) identified DPM as a TAC in 1998. This was based primarily on evidence that demonstrated cancer effects in humans.[84] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC that is routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the Bay Area air district to conduct a citywide health risk assessment based on an inventory and assessment of air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed the "Air Pollutant Exposure Zone," were identified based on health protective criteria that considers estimated cancer risk, exposures to fine particulate matter, proximity to freeways, and locations with particularly vulnerable populations. Much of the project site is located within the Air Pollutant Exposure Zone, including parts of the distribution line alignment within San Francisco. The Potrero substation is adjacent to the Air Pollutant Exposure Zone. Each of the Air Pollutant Exposure Zone criteria is discussed below.

Excess Cancer Risk. The Air Pollution Exposure Zone includes areas where modeled cancer risk exceeds 100 incidents per one million persons exposed. This criterion is based on United States Environmental Protection Agency (EPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[85] As described by the Bay Area air district, the EPA considers a cancer risk of 100 per million to be within the "acceptable" range of cancer risk. Furthermore, in the 1989

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81 In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified regulated source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

82 California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, pages 4-44, 8-6, February 2015. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

83 San Francisco Department of Public Health, Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008.

84 California Air Resources Board, Fact Sheet, The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines, October 1998.

85 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, page D-35, May 2017.

preamble to the benzene National Emissions Standards for Hazardous Air Pollutants rulemaking,[86] the EPA states that it "…strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." The 100 per one million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the San Francisco Bay Area Air Basin based on Bay Area air district regional modeling.[87]

Fine Particulate Matter ($PM_{2.5}$). In April 2011, the EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, "Particulate Matter Policy Assessment." In this document, EPA staff concludes that the then current federal annual $PM_{2.5}$ standard of 15 micrograms per cubic meter ($\mu g/m^3$) should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. The Air Pollutant Exposure Zone for San Francisco is based on the health protective $PM_{2.5}$ standard of 11 $\mu g/m^3$, as supported by the EPA's Particulate Matter Policy Assessment, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Proximity to Freeways. According to the California air board, studies have shown an association between the proximity of sensitive land uses to freeways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. Siting sensitive uses in close proximity to freeways increases both the exposure to air pollution and the potential for adverse health effects. Evidence shows that sensitive uses located within a 500-foot buffer of any freeway are at an increased health risk from air pollution;[88] as such, parcels that are within 500 feet of freeways are included in the Air Pollutant Exposure Zone.

Health Vulnerable Locations

Based on an evaluation of health vulnerability in the Bay Area, those zip codes (94102, 94103, 94110, 94124, and 94130) in the worst quintile of the Bay Area health vulnerability scores as a result of air pollution-related causes were afforded additional protection by lowering the standards for identifying parcels in the Air Pollutant Exposure Zone to: (1) an excess cancer risk greater than 90 per one million persons exposed, and/or (2) $PM_{2.5}$ concentrations in excess of 9 $\mu g/m^3$.[89]

The above citywide health risk modeling is also incorporated into the Clean Construction Ordinance (see Environment Code section 25). The purpose of the Clean Construction Ordinance is to protect the public health, safety and welfare by requiring contractors on City public works projects to reduce diesel and other fine particulate emissions generated by construction activities.

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86 54 Federal Register 38044, September 14, 1989.

87 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, page D-43, May 2017.

88 California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005, https://www.arb.ca.gov/ch/handbook.pdf, accessed October 7, 2019.

89 San Francisco Planning Department and San Francisco Department of Public Health, *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*. September 2020.

Air Quality Impacts

Project-related air quality impacts fall into two categories: short-term impacts from construction and long-term impacts from project operation.

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

The most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2017 Clean Air Plan. The 2017 Clean Air Plan is a road map that demonstrates how the San Francisco Bay Area Air Basin will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the project would: (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan.

The primary goals of the 2017 Clean Air Plan are to: (1) Protect air quality and health at the regional and local scale; (2) eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and (3) protect the climate by reducing greenhouse gas emissions. To meet the primary goals, the 2017 Clean Air Plan recommends specific control measures and actions. These control measures are grouped into various categories that include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. To this end, the 2017 Clean Air Plan includes 85 control measures aimed at reducing air pollution in the San Francisco Bay Area Air Basin.

The proposed project's impact with respect to GHGs is discussed in Section E.9, Greenhouse Gas Emissions, which demonstrates that the proposed project would comply with the applicable provisions of the city's Greenhouse Gas Reduction Strategy.

Examples of a project that could cause the disruption or delay of 2017 Clean Air Plan control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements.

Construction

Construction crew members would commute to and from the project sites and heavy equipment would be used during construction of the proposed project. The 2017 Clean Air Plan includes several transportation control measures related to these activities, including:

- Provide incentives to promote ridesharing (TR8)
- Incentives to purchase new trucks that result in lower NOx emissions than required by the current standard, hybrid trucks, or zero-emission trucks (TR19)
- Deploy construction equipment with Tier III or IV off-road engines (TR22)

The above transportation control measures are voluntary incentive measures and do not require vehicle upgrades or retrofits. The proposed use of vehicles and equipment would not conflict with these programs and in fact the proposed project would be required to comply with the City's Clean Construction Ordinance,

which requires city projects within the Air Pollutant Exposure Zone to use lower emitting construction equipment. Therefore, the proposed project would not conflict with or obstruct implementation of the control measures identified to achieve the goals of the 2017 Clean Air Plan.

Use of vehicles and equipment during proposed project construction would emit DPM and criteria air pollutants. Construction activities, particularly during site preparation, would also temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. As further discussed under Impact AQ-2, the proposed project would comply with the requirements of the Clean Construction and Dust Control Ordinances. Therefore, no conflict would occur with regard to supporting the primary goals set forth in the 2017 Clean Air Plan.

Construction of the proposed project would not preclude the extension of a transit line or a bike path or any other transit improvement nor would it alter the use of surrounding areas. As such, construction of the proposed project would not disrupt or hinder implementation of control measures identified in the 2017 Clean Air Plan.

Operation

The proposed project would involve continued operations and maintenance of the electricity system, with the SFPUC providing service to customers in San Francisco rather than PG&E. New distribution lines, transformers, circuit breakers, STATCOM units, and associated equipment would not be new operational sources of emissions. Operations and maintenance activities would be conducted in a manner similar to existing conditions. Up to 200 new employees could be hired for the project. These workers would be expected to be drawn from the existing labor pool in the San Francisco Bay Area. As an existing land use, associated vehicular trips commuting to and from San Francisco would not be expected to substantially increase vehicle miles traveled, or result in an increase in operational-related criteria air pollutants or precursors.

For the reasons described above, the proposed project would not interfere with implementation of the 2017 Clean Air Plan, and because the proposed project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, this impact would be less than significant.

Impact AQ-2: The proposed project would not generate significant amounts of fugitive dust, but would result in a considerable net increase in non-attainment criteria air pollutants. (Less than Significant with Mitigation)

Construction

Overview

Construction activities (short term) typically result in emissions of ozone precursors and particulate matter in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and particulate matter are primarily a result of the combustion of fuel from on-road and off-road sources. However, ROGs are also emitted from activities that involve painting, other types of architectural coatings, or asphalt paving. The proposed project would involve trench excavation for installation of approximately 10 miles of distribution lines on streets and public areas, install equipment at four substations, and separate the electricity distribution systems along the border of San Francisco and San

Mateo counties. Construction activities would have the potential to result in emissions of ozone precursors and particulate matter, as discussed below.

Fugitive Dust

Construction activities would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the proposed project site during excavation and construction, and trucks carrying loads of soils. Unless properly controlled, vehicles leaving the site could deposit dust or mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California air board, reducing $PM_{2.5}$ concentrations to state and federal standards of 12 $\mu g/m^3$ in the San Francisco Bay Area would prevent between 200 and 1,300 premature deaths.[90]

In response, the San Francisco Board of Supervisors approved the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and to avoid orders to stop work by the SFPUC department head. The Construction Dust Control Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection. The SFPUC department head may waive this requirement for activities on sites less than one half-acre that are unlikely to result in any visible wind-blown dust.

The SFPUC would be required to comply with the Construction Dust Control Ordinance for all work within San Francisco. Under this ordinance, the SFPUC and its contractor responsible for construction activities at the project sites would be required to use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the director. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no

90 California Air Resources Board, Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California. Staff report. Table 4c, October 24, 2008.

disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated material, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 mil (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques. San Francisco ordinance 175-91 restricts the use of potable water for soil compaction and dust control activities undertaken in conjunction with any construction or demolition project occurring within the boundaries of San Francisco, unless permission is obtained from the SFPUC. Non-potable water must be used for soil compaction and dust control activities during project construction and demolition. The SFPUC operates a recycled water truck-fill station at the Southeast Water Pollution Control Plant that provides recycled water for these activities.

For project sites outside of San Francisco, construction would comply with applicable local and state dust control regulations. Within the City of Brisbane, dust created by grading must be controlled in accordance with section 15.01.330 of the Brisbane Municipal Code,[91] and per the Bay Area air district's standard dust control measures for all construction sites, and to the satisfaction of the city engineer.[92] The City of Daly City requires implementation of dust control measures during construction.[93]

Compliance with the regulations and procedures set forth by the local dust control regulations would substantially reduce construction-period fugitive dust emissions and would ensure that potential dust-related air quality impacts would be less than significant.

Criteria Air Pollutants

As discussed above, construction activities would result in emissions of criteria air pollutants from the use of off- and on-road vehicles and equipment. Construction-related criteria air pollutants generated by the proposed project were quantified for off-road equipment, haul truck trips, worker vehicle trips, paving activities, and earth-moving activities. Project-related construction emissions from the project's off-road and on-road sources were calculated using the California Emissions Estimator Model (CalEEMod Version 2016.3.2) [94] and emission factors[95] from the 2017 version of the EMission FACtor model (EMFAC 2017), respectively. Specific details on assumptions and how emission calculations were conducted are available in the Air Quality Technical Report **(Appendix C)**.

As discussed in the project description, it is assumed that during the first year of construction two crews would perform construction activities at the Martin and Potrero substation and additional crews would

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91 City of Brisbane, Code of Ordinances section 15.01.330, Site dust control, requires that "the movement of earth materials either within, to, or from a site shall require the periodic implementation of dust control measures. On projects as determined by the city engineer, a water truck shall be continuously present on-site to assure maximum control.

92 Brisbane Department of Public Works, grading permit Application, http://brisbaneca.org/sites/default/files/GRADING%20PERMITBrisbane_rev160630.pdf

93 City of Daly City Department of Public Works, grading and hauling permit application. Available at: https://www.dalycity.org/DocumentCenter/View/1436/Grading-and-Hauling-Permit-Application-PDF?bidId/ These measures include approval of a dust nuisance control plan, controlling dust by watering or other methods, and suspending grading if suspended dust becomes a nuisance.

94 California Air Pollution Control Officers Association, California Emissions Estimator Model (CalEEMod Version 2016.3.2), 2017, http://www.caleemod.com/.

95 The USEPA maintains a compilation of Air pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: http://epa.gov/ttnchie1/ap42/

install distribution lines. Following the completion of substation work, construction crews would install distribution lines and perform distribution separation work simultaneously.

The project construction duration would depend upon the number of construction crews that are able to work concurrently without exceeding the criteria air pollutant significance thresholds. This, in turn, depends upon the construction equipment used and the distance haul trucks must travel to import fill material. The air quality analysis evaluates two haul truck trip length scenarios: a 50-mile hauling scenario and a 20-mile hauling scenario. The air quality analysis also evaluates the following various levels of emissions control scenarios:

1. Uncontrolled. This scenario assumes construction equipment to be used meet average fleet emissions.
2. Partially controlled. This scenario assumes use of Tier 4 Final construction equipment (the lowest emitting diesel emissions) at the Martin and Potrero substations and construction equipment with average fleet emissions is used to install distribution lines.
3. Fully controlled. This scenario assumes Tier 4 Final equipment used for all construction activities.

As discussed under Impact AQ-3 below, Tier 4 construction equipment will be required for construction at the Potrero and Martin Substations in order to reduce health risk impacts. Therefore, the criteria air pollutant emissions from an uncontrolled scenario is not presented below. Additionally, the results of the air quality analysis for each of the above three scenarios indicates that a smaller number of work crews could operate under the 50-mile haul truck trip length scenario without exceeding the air district's criteria air pollutant significance thresholds. Therefore, criteria air pollutant emissions are not provided below for the 20-mile haul truck trip length scenario, but can be found in the project's Air Quality Technical Report.

Typical Construction Scenario

Based on the air quality analysis conducted for the proposed project, assuming: (1) off-road equipment that meet Tier 4 emissions standards at the Martin and Potrero substations, (2) distribution line work equipment meet 2020 fleetwide average emissions factors, and (3) a 50-mile trip length for import haul truck trips, up to five crews could work concurrently (including work at the substations) and construction would take approximately two years (see **Table 18**). More than five crews working concurrently would result in a significant impact. The actual emissions generated by project construction would be less than estimated in Table 18 because some of the project sites are located within the Air Pollutant Exposure Zone. For projects located within the Air Pollutant Exposure Zone, the Clean Construction Ordinance requires equipment to meet or exceed Tier 2 emissions standards for off-road engines and operate with the most effective California air board verified diesel emission control strategy (VDECS).[96] Tier 4 engines also satisfy the Clean Construction Ordinance requirements.

In the 50-mile haul truck scenario, trucks would be expected to travel beyond the boundary of the San Francisco air basin, resulting in emissions in other air basins. As these truck trips only represent a portion of the overall emissions activity, much of which would still occur within the San Francisco air basin, emissions

[96] VDECs are diesel particulate filters.

in other air basins would be expected to be substantially lower than emissions in the San Francisco air basin. As a result, the project is not expected to result in significant criteria pollutant emissions in other air basins.

As discussed above, under the typical construction scenario, with five construction crews operating concurrently the first year (two crews at substations; three crews on distribution lines) and four crews on distribution lines during the second year, construction-related criteria air pollutant emissions would be less than significant. The work crew limitations have been incorporated into Mitigation Measure M-AQ-2: Construction Emissions Minimization and would ensure that construction-related criteria air pollutant emissions are reduced to less than significant.

The air quality analysis indicates that under the 20-mile haul truck trip length scenario, one additional work crew would be able to operate while ensuring criteria air pollutant emissions remain below significance thresholds.

Table 18: Average Daily Construction Emissions (Pounds Per Day) – Typical Construction Scenario[1]

Construction Activity	Work Crews	ROG	NOx	PM_{10}	$PM_{2.5}$
Substation Work + Distribution Lines	5	3.5	45	1.8	1.5
Distribution Lines Only	4	4.0	52	2.1	1.8
Total Construction Period	2.0 year				
Significance Threshold		54	54	82 (exhaust only)	54 (exhaust only)
Threshold Exceeded?		No	No	No	No

1. Assuming : (1) off-road equipment that meet Tier 4 emissions standards at the Martin and Potrero substations, (2) distribution line work meet 2020 fleetwide average emissions factors, and (3) a 50-mile trip length for import haul truck trips.

Accelerated Construction Scenario

In order for project construction to be completed in one year, up to 15 construction crews all working concurrently (including at the substations) would be required. Based on the criteria air pollutant results presented in Table 18, concurrent construction using more work crews than analyzed above for the typical construction scenario would exceed construction-related criteria air pollutant emissions. This would be a significant impact. Implementation of **Mitigation Measure M-AQ-2: Construction Emissions Minimization** would reduce construction emissions by requiring all off-road engines to be Tier 4 at all project sites. As shown in **Table 19**, implementation of Mitigation Measure M-AQ-2: Construction Emissions Minimization would reduce construction-related criteria air pollutant emissions to a less-than-significant level.

Mitigation Measure M-AQ-2: Construction Emissions Minimization

Potrero and Martin Substation Work

The SFPUC shall require Tier 4 Final engines for all off-road construction equipment used for the Potrero and Martin substations.

Distribution Line Work

The SFPUC shall undertake the following for distribution line work that requires 4 or more crews to work concurrently (assuming 50-mile hauling distance for import soils):

1. While substation work is occurring, the SFPUC shall limit distribution work crews to no more than three work crews operating concurrently. Upon completion of all substation work, the SFPUC shall limit distribution work crews to no more than four work crews operating concurrently; or,

2. The SFPUC shall require all distribution line work to use Tier 4 Final off-road engines. Additionally, during substation work, the SFPUC shall limit distribution work crews to no more than seven work crews operating concurrently. Upon completion of all substation work, the SFPUC shall limit substation work crews to no more than eight work crews operating concurrently.

For distribution line work, the SFPUC may use a different mix of work crews and off-road construction equipment provided the SFPUC documents, supported by substantial evidence, that the desired mix of work crews and off-road construction equipment do not exceed any of the following performance standards: average daily emissions of ROG, NOx, and PM2.5 shall not exceed 54 lbs/day, average daily emissions of PM10 shall not exceed 82 lbs/day.

Table 19: Average Daily Construction Emissions (Pounds Per Day) – Haul Truck Trips within 50 Miles and Tier 4 Off-Road Construction Equipment

Construction Activity	Work Crews	ROG	NOx	PM_{10}	$PM_{2.5}$
Substation Work + Distribution Lines	9	3.2	50	1.5	1.0
Distribution Lines Only	8	3.0	50	1.5	1.0
Total Construction Period	1.0 year				
Significance Threshold		54	54	82 (exhaust only)	54 (exhaust only)
Threshold Exceeded?		No	No	No	No

Note: This analysis assumes compliance with the Clean Construction Ordinance using Tier 4 construction equipment at all project sites.

Operation

No new stationary sources of emissions would be generated from the SFPUC's operation of the electrical system and the proposed new infrastructure such as transformers, circuit breakers, STATCOMs, meters, and distribution lines. Up to 200 new employees could be hired for the project; these workers would be expected to be drawn from the existing labor pool within the San Francisco Bay Area. Of these, approximately 150 administrative employees would be located at the SFPUC headquarters and approximately 50 field workers would report to the SFPUC field operations center at Pier 23. These employees may drive, take public transit, bicycle, or walk to work. It is estimated that 24 percent of employee daily trips would be vehicle trips to and from these locations.[97] Given the small number of employees, some of which may already be commuting to employment centers within the Bay Area, operational vehicle emissions from new employees would be low. Operations and maintenance of the newly installed electrical system equipment are anticipated to include inspections and meter recording, equipment testing, repair and replacement of electrical equipment, repair and replacement of structures (e.g., underground vaults, duct banks, power poles), which would be generally similar to existing operations and would not result in substantial new emissions. For these reasons, operational emissions would be less than significant.

[97] San Francisco Planning Department, Pacific Gas and Electric Power Asset Acquisition Project – Travel Demand, January 14, 2021.

Impact AQ-3: The proposed project would generate toxic air contaminants, including diesel particulate matter, that would expose sensitive receptors to substantial pollutant concentrations. (Less than Significant with Mitigation)

Construction

Toxic Air Contaminants

Portions of the project sites are located within or adjacent to the Air Pollutant Exposure Zone as described above, meaning the area has high levels of background pollutant concentrations.[98]

Off-road equipment (which includes construction-related equipment) are large contributors to diesel particulate matter emissions in California, although since 2007, the California air board has found the emissions to be substantially lower than previously expected.[99] According to the California Air Resources Board, off-road equipment is the third largest source of mobile particulate matter emissions in California.[100] Additionally, a number of federal and state regulations are requiring cleaner off-road equipment. Specifically, both the EPA and California air board have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000 and Tier 4 interim and final emission standards for all new engines were phased in between 2008 and 2015. Although the full benefits of these regulations will not be realized for several years, the EPA estimates that by implementing the federal Tier 4 standards, NOx and particulate matter emissions will be reduced by more than 90 percent.[101]

A health risk assessment was performed to evaluate potential health risks at the closest sensitive receptor location. Project construction activities would result in short-term emissions of DPM and other TACs. As previously discussed under Impact AQ-2, the proposed project must comply with the Clean Construction Ordinance within the City of San Francisco, which requires the use of Tier 2 or higher engines with the most effective VDECS (Tier 4 engines automatically meet this requirement) in the Air Pollutant Exposure Zone. The Clean Construction Ordinance also prohibits use of portable diesel engines (in most cases), restricts equipment idling to two minutes, and requires contractors to properly maintain and tune their equipment in accordance with manufacturer specifications. In addition, the ordinance requires the preparation and implementation of a Construction Emissions Minimization Plan and the monitoring of construction equipment use from the start of construction. While emission reductions from limiting idling, educating workers and the public, and properly maintaining equipment are difficult to quantify, other measures in the Clean Construction Ordinance, specifically the requirement for equipment with Tier 2 engines and the most effective VDECS (level 3) can reduce diesel particulate emissions by 89 to 94 percent compared to equipment

98 San Francisco Planning Department, Property Information Map, Air Pollutant Exposure Zone Map 2020. Available at: sfplanning.org

99 California Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements, October 2010. Available: https://ww3.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf

100 California Air Resources Board, 2012 Base Year Emissions, Off-Road Sources, 2017, https://ww3.arb.ca.gov/ei/emissiondata.htm.

101 United States Environmental Protection Agency, "Clean Air Nonroad Diesel Rule: Fact Sheet," May 2004. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P10001RN.PDF?Dockey=P10001RN.PDF

with engines meeting no emission standards and without a VDECS.[102] Emissions reductions from the combination of Tier 2 equipment with level 3 VDECS is almost equivalent to requiring only equipment with Tier 4 engines.

Because of the duration of proposed construction activities at both Potrero and Martin substations (one year) and the proximity of sensitive receptors to the construction areas, a health risk screening assessment was performed to evaluate potential health risks at the closest sensitive receptor location from the Potrero and Martin substations. The proposed project's health risk assessment was conducted using the construction equipment inventory, assuming fleet average emissions factors, and the EPA's American Meteorological Society/ Environmental Protection Agency Screening Model (AERSCREEN) dispersion model.[103] Model inputs, including source characteristics (e.g., release height, initial dispersion), were based on published guidance from EPA, the Bay Area air district,[104, 105] Office of Environmental Health Hazard Assessment,[106] and the California Air Pollution Control Officer's Association.[107] The model produces estimates of "worst-case" 1-hour concentrations for a single source, without the need for hourly meteorological data, and also includes conversion factors to estimate "worst-case" 3-hour, 8-hour, 24-hour, and annual concentrations. The health risk assessment analyzed potential excess lifetime cancer risks and $PM_{2.5}$ concentrations resulting from project construction. Risks were quantified at the closest residential receptor location. For the Potrero substation, the closest sensitive receptors would be located in the planned adjacent Potrero Power Station Mixed-Use Development Project area. The nearest future resident would be located approximately 50 feet from the boundaries of the PG&E south switchyard where proposed work could occur at the Potrero Substation. The nearest existing sensitive receptor from the Martin substation work areas is located approximately 200 feet north of Martin Substation. Additional details on assumptions and analysis methods for the health risk assessment are available in the Air Quality Technical Report (Appendix C).The following provides the results of the health risk assessment for the Potrero Substation, followed by the Martin Substation.

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102 PM emissions benefits are estimated by comparing off-road PM emission standards for Tier 2 with Tier 1 and 0. Tier 0 off-road engines do not have PM emission standards, but the United States Environmental Protection Agency's Exhaust and Crankcase Emissions Factors for Nonroad Engine Modeling – Compression Ignition has estimated Tier 0 engines between 50 horsepower (hp) and 100 hp to have a PM emission factor of 0.72 g/hp-hr and greater than 100 hp to have a PM emission factor of 0.40 g/hp-hr. Therefore, requiring off-road equipment to have at least a Tier 2 engine would result in between a 25 percent and 63 percent reduction in PM emissions, as compared to off-road equipment with Tier 0 or Tier 1 engines. The 25 percent reduction comes from comparing the PM emission standards for off-road engines between 25 hp and 50 hp for Tier 2 (0.45 g/bhp-hr) and Tier 1 (0.60 g/bhp-hr). The 63 percent reduction comes from comparing the PM emission standards for off-road engines above 175 hp for Tier 2 (0.15 g/bhp-hr) and Tier 0 (0.40 g/bhp-hr). In addition to the Tier 2 requirement, ARB Level 3 VDECSs are required and would reduce PM by an additional 85 percent. Therefore, the mitigation measure would result in between an 89 percent (0.0675 g/bhp-hr) and 94 percent (0.0225 g/bhp-hr) reduction in PM emissions, as compared to equipment with Tier 1 (0.60 g/bhp-hr) or Tier 0 engines (0.40 g/bhp-hr).

103 AERSCREEN is intended to produce concentration estimates that are equal to or greater than the estimates produced by AERMOD with a fully developed set of meteorological and terrain data, but the degree of conservatism will vary depending on the application.

104 Bay Area Air Quality Management District, CEQA Air Quality Guidelines, May 2017 (Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en); Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2012 (available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en); Proposed Health Risk Assessment Guidelines, Air Toxics NSR Program, January 2016 (available: https://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf).

105 Bay Area Air Quality Management District, The San Francisco Community Risk Reduction Plan (CRRP): Technical Support Documentation, December 2012. Available: https://gsweventcenter.com/Appeal_Response_References/2012_1201_BAAQMD.pdf

106 Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program*, Risk Assessment Guidelines, February 2015.

107 California Air Pollution Control Officers Association, Health Risk Assessment for Proposed Land Use Projects, 2009. Available: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

For projects within San Francisco, the City evaluates whether the proposed project plus existing background health risks would result in locations meeting the Air Pollutant Exposure Zone criteria. If the existing plus project health risk levels do not meet the Air Pollutant Exposure Zone criteria (discussed above), then no significant health risk impact would occur. If the existing plus project health risk meets or exceeds the Air Pollutant Exposure Zone criteria, a significant impact would occur and the project is evaluated to determine whether the project's contribution to that health risk impact would be cumulatively considerable. For areas that do not meet the Air Pollutant Exposure Zone criteria without the project and would meet the Air Pollutant Exposure Zone criteria with the project, then a considerable contribution is defined as the project resulting in a cancer risk of 10 per one million persons exposed or greater, or PM2.5 concentrations of 0.3 ug/m3 or greater. For areas that are within the Air Pollutant Exposure Zone already without the project, a significant contribution is defined as a cancer risk of 7 per one million persons exposed or PM2.5 concentrations of 0.2 ug/m3.[108] Because the maximally exposed sensitive receptor from the Potrero Substation work is a receptor located within the Air Pollutant Exposure Zone, the lower thresholds described above apply to the Potrero substation. These are the significance thresholds by which a project would result in a considerable contribution to existing significant health risks. These significance thresholds apply to the Potrero Substation work because that project site is within San Francisco.

The results of the screening health risk assessment for construction activities at the Potrero substation are presented in **Table 20**, in addition to disclosing the background health risks at the maximally exposed sensitive receptor. As shown, the project would exceed the cancer risk and $PM_{2.5}$ thresholds. This would be a significant impact. **Mitigation Measure M-AQ-2: Construction Emissions Minimization** would be required to reduce health risks at sensitive receptor locations.

As shown in Table 20, with implementation of Mitigation Measure M-AQ-2: Construction Emissions Minimization, $PM_{2.5}$ concentrations from the project at the maximally exposed future receptor located approximately 50 feet from the Potrero substation would not exceed the 0.2 µg/m^3 significance threshold. Likewise, the excess cancer risk would be below the threshold of 7.0 per one million persons exposed. Therefore, health risks from construction activities at the Potrero Substation would be less than significant with mitigation.

[108] A 0.2 µg/m^3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M et al. 2005. Spatial Analysis of Air Pollution and Mortality in Los Angeles. Epidemiology. 16:727-736. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7.0 per million persons exposed.

Table 20: Cancer Risk and Construction $PM_{2.5}$ Concentrations at the Potrero Substation Maximally Exposed Sensitive Receptor

	Unmitigated Health Risks		Mitigated Health Risks	
	Cancer Risk (per one million exposed)	**PM2.5 concentration (µg/m³)**	**Cancer Risk (per one million exposed)**	**PM2.5 concentration (µg/m³)**
Existing Background	65	9.0	65	9.0
Project Contribution	71	1.1	6.7	0.13
Existing plus Project	136	10.1	71.7	9.13
Project-level Threshold	7.0	0.2	7.0	0.2
Threshold Exceeded?	Yes	Yes	No	No

Martin Substation Health Risk Assessment

For projects located outside of San Francisco, such as the Martin Substation, the City uses the Bay Area air district health risk thresholds because the citywide health risk assessment does not extend beyond the San Francisco County border. These significance thresholds are an excess cancer risk level of more than 10 in one million or an incremental increase of greater than 0.3 µg/m³ annual average $PM_{2.5}$.[109]

The results of the screening health risk assessment for construction activities at the Martin substation are presented in **Table 21**, in addition to disclosing the background health risks at the maximally exposed sensitive receptor. Because the Martin substation and nearby receptors are located beyond the extent of the citywide health risk assessment model, the health risks from existing stationary sources and traffic emissions from major roadways within 1,000 feet of the Martin Substation maximally exposed sensitive receptor were individually evaluated and are shown in Table 21. As shown, construction at the Martin Substation would exceed the project level cancer risk and $PM_{2.5}$ thresholds. This would be a significant impact. **Mitigation Measure M-AQ-2: Construction Emissions Minimization** would be required to reduce health risks at sensitive receptor locations.

[109] Bay Area Air Quality Management District, CEQA Guidelines, May 2017, p.5-3. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 21: Cancer Risk and Construction $PM_{2.5}$ Concentrations at the Martin Substation Maximally Exposed Sensitive Receptor

	Unmitigated Health Risks		Mitigated Health Risks	
	Cancer Risk (per one million exposed)	PM2.5 concentration (µg/m³)	Cancer Risk (per one million exposed)	PM2.5 concentration (µg/m³)
EXISTING BACKGROUND SOURCES				
View Rite	0	0.02	0	0.02
Chevron Bayshore	1.5	0	1.5	0
Seven Eleven	1.7	0	1.7	0
Traffic Emissions from Geneva Avenue	3.8	0.09	3.8	0.09
Traffic Emissions from Bayshore Boulevard	4.4	0.16	4.4	0.16
Total Background	11.4	0.27	11.4	0.27
Project Contribution	40	0.44	3.9	0.05
Existing plus Project	51.4	0.7	15.3	0.32
Project-level Threshold	10.0	0.3	10.0	0.3
Threshold Exceeded?	Yes	Yes	No	No

As shown in Table 21 above, with implementation of Mitigation Measure M-AQ-2: Construction Emissions Minimization, $PM_{2.5}$ concentrations at the maximally exposed sensitive receptor from the Martin substation would not exceed the 0.3 µg/m³ significance threshold. Likewise, the excess cancer risk would be below the threshold of 10.0 in a million. Therefore, health risks from construction activities at the Martin Substation would be less than significant with mitigation.

Distribution Lines, Plymouth and Randolph Substation Health Risks

Distribution line work is expected to occur at a rate of 40 linear feet per work day. At this rate, construction would advance and heavy equipment use would be within 100 feet of sensitive receptors at any location for less than one week and on any block for less than one month. This includes the duct bank installation at the Plymouth and Randolph substations. Any distribution line work within the Air Pollutant Exposure Zone would be required to adhere to the equipment emissions requirements of the Clean Construction

Ordinance, which requires all equipment 25 horsepower or greater operating for 20 or more days to meet a minimum of Tier 2 emissions standards and be equipped with the most effective VDEC (level 3). Tier 4 engines automatically meet this requirement. As discussed above, compliance with the Clean Construction Ordinance would reduce diesel particulate emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS. Furthermore, the Office of Environmental Health Hazard Assessment does not recommend a health risk assessment for exposure to emissions that occur for less than two months.[110] Therefore, short-term construction activities of 17.5 days per block[111] along the distribution line would also not exceed air quality health risk thresholds.

Exposure to Pollutants in Soil and Groundwater

Section E.18, Hazards and Hazardous Materials, addresses the potential for exposure of nearby sensitive receptors to contaminants in soil and groundwater resulting from construction excavation into soil containing hazardous materials. As discussed, the potential health risk was below significance thresholds.

Operation

No new stationary sources of emissions would be generated from the acquisition of the electrical system and proposed new infrastructure.

Up to 200 new workers could be hired for the project; these workers would be expected to be drawn from the existing labor pool within the San Francisco Bay Area. The city uses a screening criteria of 5,000 vehicles per day to determine whether a project's vehicle trips require quantitative analysis to evaluate potential health risks on sensitive receptors (Appendix C). Given that the maximum number of vehicle trips generated by the 200 workers would be well below 5,000 vehicle per day and that vehicular traffic would come from different locations and drive on different roads, project operation is not expected to contribute significantly to health risks for nearby sensitive receptors.

Impact AQ-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

Construction

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. During construction, diesel exhaust from construction equipment and vehicles, as well as volatile organic compounds emitted during paving, would generate some odors, which could increase the odors temporarily in the immediate vicinity of the equipment operation. The odors would dissipate rapidly with distance from the odor-generating activity. The generation of odors from use of diesel engines and paving activities would not be substantial or permanent. Distribution line construction would occur in roadways adjacent to residences; however, construction activities in front of any residence would be short-term as construction

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110 Office of Environmental Health Hazard Assessment. *Technical Support Document for Exposure Assessment and Stochastic Analysis*, August 2012, p. 11-5. Available at: https://oehha.ca.gov/media/downloads/crnr/chapter112012.pdf. Accessed January 8, 2021.

111 This assumes a block length of 700 feet; many blocks are shorter.

would proceed in a linear fashion along the alignment. A substantial number of people would not be subjected to objectionable odors. Therefore, odor impacts would be less than significant.

Operation

The proposed project would involve operation of the electric system. No new operational sources of odors or other emissions would be generated. Construction equipment used for repair and replacement activities would generate odors, but those odors would dissipate rapidly with distance as described above. As such, operation-related impacts would be less than significant.

Impact C-AQ: The proposed project, in combination with the cumulative projects, would result in a cumulatively considerable contribution to a significant cumulative impact on air quality. (Less than Significant with Mitigation)

As discussed above, regional air pollution is, by its very nature, primarily a cumulative impact. Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.[112] The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, cumulative criteria air pollutant impacts are already evaluated under Impact AQ-2 and determined to be less than significant with mitigation.

Similarly, portions of the project sites are within the Air Pollutant Exposure Zone and health vulnerability zone, indicating it is an area that already experiences poor air quality. As such, a significant cumulative health risk impact currently exists. During construction, the proposed project would add new temporary sources of TACs within an area already adversely affected by air quality. The health risk significance thresholds for projects located within San Francisco are based on a project's contribution to cumulatively significant localized health risks. In addition to sensitive receptors located within the Air Pollutant Exposure Zone, cumulative construction activities within approximately 1,000 feet of sensitive receptors would also add to the health risks experienced by those receptors. Cumulative health risks at the maximally exposed receptor for the Potrero Substation and Martin Substation work are discussed below.

Potrero Substation

At the Potrero Substation, additional cumulative health risks beyond the background plus project health risks disclosed in Table 20, include construction emissions from the Pier 70 Mixed Use District project and the Potrero Power Station Mixed-Use Project. These projects could increase the total health risks experienced by the maximally exposed sensitive receptor, as detailed in **Table 22** below. Without mitigation, the project's health risk contribution would be an excess cancer risk of 71 per one million persons exposed, exceeding the threshold of seven per one million and the project's $PM_{2.5}$ concentration would be 1.1 $\mu g/m^3$, exceeding the 0.2 $\mu g/m^3$ threshold, resulting in a considerable contribution to cumulative health risks. However, as discussed in Impact AQ-3, with implementation of **Mitigation Measure M-AQ-2, Construction Emissions Minimization**, the proposed project would not exceed the project-level contribution threshold of seven per million persons for cancer risk and 0.2 $\mu g/m^3$ for $PM_{2.5}$ concentration. Therefore, the proposed

[112] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

project's contribution to cumulative health risks would be less than cumulatively considerable with mitigation. The impact would be less than significant with mitigation.

Table 22: Cumulative Cancer Risk and Construction $PM_{2.5}$ Concentrations at the Potrero Substation Maximally Exposed Sensitive Receptor

	Unmitigated Health Risks		Mitigated Health Risks	
	Cancer Risk (per one million exposed)	**PM2.5 concentration (µg/m³)**	**Cancer Risk (per one million exposed)**	**PM2.5 concentration (µg/m³)**
Background	65	9.0	65	9.0
CUMULATIVE PROJECTS				
Pier 70 construction and operation	11	0.0059	11	0.0059
Potrero Power Station Construction and Operation	40	0.17	40	0.17
Project Contribution	71	1.1	6.7	0.13
Existing plus Cumulative	187	10.3	123	9.3
Project-level Threshold	7.0	0.2	7.0	0.2
Threshold Exceeded?	Yes	Yes	No	No

Martin Substation

At the Martin Substation, additional cumulative health risks beyond the background plus project health risks disclosed in **Table 23**, include construction and operational emissions from the Baylands Specific Plan Project in Brisbane. This could increase the total health risks experienced by the maximally exposed sensitive receptor, as detailed in Table 23, below. However, the air district's CEQA Air Quality Guidelines identify a cumulative health risk when the combination of past, present, and reasonably foreseeable projects would result in a cancer risk of 100 per one million or PM2.5 concentration of 0.8 ug/m3. As shown in Table 23, below, the proposed project in combination with existing and reasonably foreseeable cumulative projects would not exceed these cumulative health risk thresholds. Therefore, cumulative health risks would be less than significant.

Table 23: Cumulative Cancer Risk and Construction $PM_{2.5}$ Concentrations at the Martin Substation Maximally Exposed Sensitive Receptor

	Unmitigated Health Risks Cancer Risk (per one million exposed)	PM2.5 concentration (µg/m3)
EXISTING AND CUMULATIVE SOURCES		
View Rite	0	0.02
Chevron Bayshore	1.5	0
Seven Eleven	1.7	0
Traffic Emissions from Geneva Avenue	3.8	0.09
Traffic Emissions from Bayshore Boulevard	4.4	0.16
Cumulative projects-Baylands development	11.7	0.04
Project Contribution	40	0.44
Existing plus Cumulative	63.1	0.75
Cumulative Threshold	100.0	0.8
Threshold Exceeded?	No	No

Distribution Line, Plymouth and Randall Substations

Given the short duration of project construction at any sensitive receptor location along the distribution line and at Plymouth and Randolph substations and that construction activities within the Air Pollutant Exposure Zone are required to comply with the equipment emissions standards in the Clean Construction Ordinance, the project's contribution to cumulative health risks would be less than cumulatively considerable.

Odors

As discussed under Impact AQ-4, construction of the proposed project would generate odors from diesel exhaust emissions. Construction of cumulative projects, in combination with the proposed project, occurring during the same timeframe and within close proximity could also result in a cumulative increase in exhaust odors generated by diesel equipment. However, this cumulative impact would be temporary and highly localized and would dissipate rapidly. As such, the cumulative impact related to odors would be less than significant.

Project operation would have less-than-significant impacts on criteria air pollutants, health risks, and odors as it would not introduce any new stationary sources of pollutants and vehicle emissions associated with

new employees would be negligible. Accordingly, project operation would not contribute considerably to any cumulative air quality impacts (less than significant).

E.9. Greenhouse Gas Emissions

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

Greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from past, present, and future projects have contributed and will continue to contribute to global climate change and its associated environmental impacts.

The Bay Area air district has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines sections 15064.4 and 15183.5, which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. CEQA Guidelines section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. Accordingly, San Francisco has prepared Strategies to Address Greenhouse Gas Emissions[113, 114] which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction strategy in compliance with the CEQA guidelines. These GHG reduction actions have resulted in a 41 percent reduction in GHG emissions in 2019 compared with 1990 levels[115] and exceeded the 2020 goals in the air district's 2017 Clean Air Plan, Executive Orders S-3-05 and B-30-15, AB 32, and the city's 2017 GHG emissions reduction goal. The city has also exceeded the 2030 targets of 40 percent reduction below 1990 levels more than 10 years before the target date.

In 2008, the San Francisco Board of Supervisors established citywide GHG reduction limits through Ordinance 81-08 and required each city department to annually report GHG emissions and climate protection initiatives. In July 2021, the City adopted an updated GHG ordinance to demonstrate the city's commitment to the Paris Agreement by establishing GHG reduction targets for 2030, 2040, and 2050 and setting other critical sustainability goals. The updated ordinance sets goals for both sector-based emissions and consumption-based emissions. The GHG targets established under ordinance 81-08 applied solely to

113 San Francisco Planning Department, Strategies to Address Greenhouse Gas Emissions in San Francisco, November 2010.

114 San Francisco Planning Department, 2017 Greenhouse Gas Reduction Strategy Update, July 2017.

115 San Francisco Department of the Environment, *San Francisco's Carbon Footprint,* 2017, https://sfenvironment.org/carbonfootprint, accessed September 30, 2021.

sector-based emissions, which are those emissions that are generated within the geographic boundaries of the city. The updated ordinance reflects a more comprehensive effort to reduce GHG emissions by setting consumption-based targets as well. Consumption-based emissions are those that are associated with producing, transporting, using, and disposing of products and services consumed by people within the city, even those emissions that are generated outside of the city boundaries. These sector-based GHG reduction targets are more ambitious than those set forth in Governor Brown's Executive Order B-30-15 (e.g., a 61 percent reduction in sector-based GHG emissions by 2030 rather than a 40 percent reduction by 2030) and in B-55-18 (e.g., achieving carbon neutrality by 2040 rather than by 2045). The consumption-based targets are consistent with the 2030 goal of Executive Order B-30-15 and the 2050 goal of Executive Order S-3-05 (80 percent below 1990 levels, by 2050). The updated GHG ordinance also serves to codify the city's "0-80-100-Roots" climate action framework, which comprises climate and sustainability goals in these key areas: waste, transportation, energy, and carbon sequestration.

SFPUC's most recent departmental climate action report was published in March 2014 for the 2012-2013 fiscal year. The SFPUC Climate Action Report summarizes the GHG emissions associated with electricity, natural gas, and fleet fuels consumed by SFPUC operations, and highlights SFPUC's activities to reduce GHG emissions. According to the 2014 report, total GHG emissions from facility energy use (natural gas and electricity) decreased 76 metric tons (2.9 percent) in FY 12-13 compared to the previous year[116].

Given that the city has met the state's 2020 GHG reduction targets and met the state and region's 2030 GHG reduction target under executive order B-30-15,[117,118] Senate Bill 32[119,120] and the 2017 Clean Air Plan,[121] more than 10 years before the target date, and San Francisco's GHG reduction goals are consistent with, or more aggressive than, the longer-term goals established under order S-3-05[122] the city's GHG reduction goals are consistent with order S-3-05, order B-30-15, Assembly Bill 32, Senate Bill 32, and the 2017 Clean Air Plan. Therefore, proposed projects that are consistent with the city's GHG reduction strategy would be consistent with the aforementioned GHG reduction goals and would not conflict with these plans or result in

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116 San Francisco Public Utilities Commission. 2014. San Francisco Public Utilities Commission Departmental Action Plan. Annual Report. Fiscal Year 2012-2013. March 18. Available at: https://sfenvironment.org/sites/default/files/fliers/files/sfe_cc_2014_sfpuc_cap_fy1213.pdf

117 Office of the Governor, *Executive Order B-30-15,* April 29, 2015*, https://www.gov.ca.gov/news.php?id=18938*, accessed March 3, 2016. Executive Order B-30-15, issued on April 29, 2015, sets forth a target of reducing GHG emissions to 40 percent below 1990 levels by 2030 (estimated at 2.9 million $MTCO_2E$).

118 San Francisco's GHG reduction goals are codified in Section 902 of the Environment Code and include: (i) by 2008, determine City GHG emissions for year 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

119 Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding Section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

120 Senate Bill 32 was paired with Assembly Bill 197, which would modify the structure of the State Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants, and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

121 The 2017 Clean Air Plan establishes the following GHG reduction targets: reduce Bay Area greenhouse gas emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

122 Office of the Governor, Executive Order S-3-05, June 1, 2005, http://static1.squarespace.com/static/549885d4e4b0ba0bff5dc695/t/54d7f1e0e4b0f0798cee3010/1423438304744/California+Executive+Order+S-3-05+(June+2005).pdf. Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalents ($MTCO_2E$)); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2E$); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2E$). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

significant GHG emissions, and would therefore not exceed San Francisco's applicable GHG threshold of significance.

The following analysis of the proposed project's impact on climate change focuses on the project's contribution to cumulatively significant GHG emissions. Because no individual project could emit GHGs at a level that could result in a significant impact on the global climate, this analysis is in a cumulative context, and this section does not include an individual project-specific impact statement.

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

Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers; energy required to pump, treat, and convey water; and emissions associated with waste removal, disposal, and landfill operations.

The proposed project would involve operation of the electrical system and infrastructure associated with the SFPUC's distribution of electricity in a manner similar to existing PG&E electricity distribution. The proposed project would not increase the intensity of use of the project sites and would not increase use of electricity (energy sources), or other sources of GHG emissions (e.g., waste) during operations. SFPUC would hire up to 200 new workers, some of whom may commute to and from San Francisco. However, as described in Section E.8, Air Quality, above, the electrical system is an existing land use, and its continued operation with the proposed new equipment is not expected to increase operational-related criteria air pollutants or precursors. Therefore, the proposed project would not contribute to long-term increases in GHG emissions. Construction activities would result in temporary increases in GHG emissions from use of combustion equipment and vehicles, transportation of workers and equipment, and waste disposal. The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the project's construction-related GHG emissions.

The proposed project's construction-related emissions would be reduced through compliance with San Francisco's Construction and Demolition Debris Recovery Ordinance, Clean Construction Ordinance, Construction and Demolition Debris Recycling Requirements, Resource Conservation Ordinance, and Green Building Code, and Construction Recycled Content Ordinance requirements. These regulations serve to reduce GHG emissions from construction activities. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also require non- polyvinyl chloride (PVC) plastics be specified in construction projects and promote reuse of materials, conserving their embodied energy[123] and reducing the energy required to produce new materials. Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.[124]

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[123] Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

[124] San Francisco Planning Department, Greenhouse Gas Analysis: Compliance Checklist for PG&E Asset Acquisition Project, August 31, 2020.

SFPUC is required to comply with local GHG reduction regulations. The city's regulations have proven effective as San Francisco's GHG emissions have measurably decreased when compared to 1990 emissions levels, demonstrating that the city has met and exceeded Executive Order S-3-05, Assembly Bill 32, and the 2017 Clean Air Plan GHG reduction goals for the year 2020. Furthermore, the city has met its 2017 GHG reduction goal of reducing GHG emissions to 25 percent below 1990 levels by 2017and exceeded the 2030 targets of Senate Bill 32 and the 2017 Clean Air Plan (40 percent reduction below 1990 levels) more than 10 years before the target date. Other existing regulations, such as those implemented through Assembly Bill 32 and Senate Bill 32, will continue to reduce a proposed project's contribution to climate change. In addition, San Francisco's local GHG reduction targets are consistent with the long-term GHG reduction goals of Executive Order S-3-05and the 2017 Clean Air Plan. Because the proposed project is consistent with the City's GHG reduction strategy, it is also consistent with the GHG reduction goals of Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32 and the 2017 Clean Air Plan, and would not conflict with these plans, and would therefore not exceed San Francisco's applicable GHG threshold of significance. As such, the proposed project would result in a less-than-significant impact with respect to GHG emissions. No mitigation measures are necessary.

In addition to compliance with the regulations above, the SFPUC is currently taking other actions that further the city's GHG reduction goals, including but not limited to implementation of the SFPUC energy efficiency program, installation of solar photovoltaic projects, and provision of pre-tax commuter benefits for transit and vanpool expenses. Applicable actions for the proposed project include the use of construction equipment and vehicles that meet emissions requirements and the use of energy efficient equipment and lighting.

E.10. Wind

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
10. WIND—Would the project:					
a) Create wind hazards in publicly accessible areas of substantial pedestrian use?	☐	☐	☐	☒	☐

Impact WI-1: The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use. (No Impact)

A project's wind impacts are directly related to its height, orientation, design, location, and surrounding development context. Based on wind analyses for other development projects in San Francisco, a building that does not exceed a height of 85 feet generally has little potential to cause substantial changes to ground-level wind conditions. The proposed project primarily involves construction and operation of below-ground infrastructure such as distribution lines and vaults. The above-ground project components include equipment and control houses generally up to 20 feet in height installed within substations (and possibly up to 40 feet if STATCOM units are stacked at the Potrero substation), replaced utility poles and electrical lines. The proposed project would not create wind hazards because these structures would not block or redirect wind. No impact would occur.

Impact C-WI: The proposed project, in combination with the cumulative projects, would not have significant cumulative wind impacts. (No Impact)

As discussed in Impact WI-1, the proposed project would not alter wind by blocking or redirecting wind in a way that could create wind hazards in any publicly accessible areas. Thus, the project would not contribute to any potential cumulative impact associated with wind (no impact).

E.11. Shadow

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
11. SHADOW—Would the project:					
b) Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces?	☐	☐	☐	☒	☐

Impact SH-1: The proposed project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. (No Impact)

Section 295 of the planning code, the Sunlight Ordinance, was adopted in 1984 following voter approval of Proposition K. The ordinance generally prohibits the issuance of building permits for structures greater than 40 feet tall that would cast significant new shade or shadows on certain public open spaces under the jurisdiction of the San Francisco Recreation and Parks Department, unless the San Francisco Recreation and Park Commission determines that the shade or shadow would not have an adverse impact on the use of such property.

The project would not include any new buildings or structures greater than 40 feet in height (the STATCOM units, if stacked, would be 40 feet or less in height), with the possible exception of utility poles, which would not create a new or increased shadow that would substantially affect the use and enjoyment of outdoor recreational facilities or other public areas. As a result, there would be no impact

Impact C-SH: The proposed project, in combination with the cumulative projects would not have significant cumulative shadow impacts. (No Impact)

Because the proposed project would have no shadow-related impacts, it would not contribute to any potential cumulative impact associated with shadow (no impact).

E.12. Recreation

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

The following neighborhood parks and other facilities are located within or in close proximity to the project work areas: Merced Heights Playground; Crocker Amazon Playground; Brotherhood Way Open Space; Cayuga Park; Lincoln Park; Broderick-Terry Duel Site Park; the Olympic Club golf course, Westlake Park, and Mission Hills Park.

Impact RE-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. (Less than Significant)

Construction

As discussed in Section E.3, Population and Housing, construction of the proposed project would not induce substantial population growth which could increase the use of the existing parks or other recreational facilities such that physical deterioration of the facilities would occur or be accelerated. Project construction is anticipated to occur in streets adjacent to public recreational facilities in San Francisco, within paved walkways along the edge of the Broderick-Terry Duel Site Park in Daly City, and private roads in the Olympic Club. While not expected, should construction activities entail excavation or staging within landscaped areas of the parks and recreational facilities, the SFPUC would implement SFPUC Standard Construction Measure 8 (Visual and Aesthetic Considerations), which would require restoration to preconstruction conditions. As a result, proposed project construction would not cause substantial physical deterioration of park facilities and the impact would be less than significant.

Operation

As discussed in Section E.3, Population and Housing, the proposed project is not expected to induce substantial population growth that would in turn increase the use of the existing parks or other recreational facilities such that physical deterioration of the facilities would occur or be accelerated. Therefore, no impact would occur during operation.

Impact RE-2: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. (No Impact)

The proposed project would not include recreational facilities. As discussed in Section E.3, Population and Housing, the proposed project is not expected to induce substantial population growth that would in turn generate new recreational demand, requiring the construction or expansion of recreational facilities. Therefore, no impact would occur.

Impact C-RE: The proposed project, in combination with cumulative projects, would not have a substantial cumulative impact on recreational resources. (No Impact)

Because project operation would have no impact on parks and recreational facilities, it would not contribute to any potentially significant cumulative operations impact. The proposed project would have less-than-significant construction phase impacts on parks and recreational facilities. No projects were identified that would entail construction disturbance within or adjacent to the parks and recreation facilities along the distribution alignment that could be affected by proposed project construction. As discussed in Section E.3, cumulative construction in the vicinity is not anticipated to induce population growth to such an extent that substantial deterioration of recreational facilities would occur, nor would the project contribute considerably to any potential impact. As a result, construction of the proposed project, in combination with the cumulative projects, would not result in a substantial cumulative impact on recreational resources.

E.13. Utilities and Service Systems

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
13. UTILITIES AND SERVICE SYSTEMS— Would the project:					
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒	☐

The proposed project involves the reconfiguration of electrical system distribution infrastructure for customers in San Francisco. The new distribution lines and infrastructure would not result in an expansion of the existing electrical system capacity. The environmental impacts of construction and operation of the proposed electrical system infrastructure are addressed in this initial study. This section addresses impacts on other utilities and service systems resulting from the proposed project.

The project would not involve new housing development, an increase in population, or substantially alter the manner in which the electrical system is operated. Project construction would entail minimal amounts of water usage and wastewater generation; project operation would not entail additional water usage or wastewater generation. Therefore, topics 13(b) and (c) are not applicable to the project and are not discussed below.

Impact UT-1: The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, natural gas, or telecommunications

facilities, the construction or relocation of which could cause significant environmental effects. (Less than Significant)

Construction

Project construction would require a limited amount of potable water for drinking, onsite sanitary needs, and concrete slurry mixing. Recycled water would be used for dust suppression and soil compaction, in compliance with San Francisco Public Works Code article 21. The limited amount of water required for construction would not result in the need for an additional water supply, nor would it require the construction of new or expanded water facilities.

Project construction could generate wastewater from dewatering of excavated trenches in areas of shallow groundwater that would be discharged to the local sewer system in accordance with applicable permits. Wastewater generated during construction would constitute a negligible input to the local wastewater treatment systems and would not require new or expanded wastewater facilities. Project construction would not increase impervious surfaces or result in additional stormwater discharge to local storm drainage facilities.

During the engineering phase for the project, the SFPUC would obtain details of the location of subsurface utilities from local utility providers in order to situate the duct bank in accordance with standard minimum spacing requirements and avoid utility conflicts to the extent feasible along the proposed distribution alignment and within substations. Prior to construction, the contractor would be required by law to contact USA North which would notify utility providers in the vicinity of the planned excavations. Each provider would be responsible for marking the location of its underground utilities to avoid damage. At some locations, it is possible that existing utilities may need to be temporarily or permanently relocated; however, any relocated utilities would likely be located within or adjacent to the excavated trench and their relocation would not result in significant environmental effects. In summary, project construction impacts would be less than significant.

Operation

Operation of the new infrastructure would not require substantial additional water supply, electric power, natural gas, or telecommunications facilities relative to existing PG&E operations, nor would the project generate additional wastewater. Electric power needs for operation of monitoring equipment, transformers, control houses, HVAC systems, and lighting in the substations would remain similar to existing usage, and would not require construction of new or expanded supplies. No new natural gas or telecommunications facilities (other than the communication conduits included in the proposed duct banks) would be needed to serve the project. As stated in section A.6 above, repair and replacement of new equipment as part of ongoing maintenance activities is expected to be similar to existing operations. As such, no major operational changes would occur, resulting in new impacts on utility systems. Impacts would be less than significant.

Impact UT-2: The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. (Less than Significant)

Construction

In accordance with section 708 of the San Francisco Environment Code, the SFPUC would require the construction contractor to submit a Construction and Demolition Debris Management Plan for approval. The plan would demonstrate how the project would meet the required minimum 75-percent diversion rate for project-related construction and demolition debris, in compliance with San Francisco Construction and Demolition Debris Recovery Ordinance (Ordinance No. 27-06). The contractor would evaluate all recycling and reuse options for construction material to determine the feasibility of recycling and reuse prior to disposing material at a landfill. The SFPUC would meet the diversion goal by recycling a portion of non-hazardous debris and beneficially reusing a portion of the soil, if feasible.

In September 2015, the city approved an agreement with Recology, Inc., for transport and disposal of the city's municipal solid waste at the Recology Hay Road Landfill in Solano County. Under this agreement, disposal of municipal solid waste began in January 2016 at this landfill and is expected to continue for approximately nine years, with an option to renew the agreement thereafter for an additional six years.[125] The Hay Road Landfill has a maximum permitted capacity of 37 million cubic yards and a remaining capacity of 30.4 million cubic yards.[126] Other landfills in the region include the Altamont Landfill, which has a permitted capacity of 124.4 million cubic yards and a remaining capacity of 65.4 million cubic yards,[127] and the Corinda Los Trancos Landfill (Ox Mountain), which has a permitted capacity of 60.5 million cubic yards and remaining capacity of 22.2 million cubic yards.[128]

Waste materials generated during construction of the proposed project would consist primarily of excavated soil, asphalt, and concrete. The materials would either be recycled at an approved recycling facility or disposed of at an offsite permitted facility, in compliance with section 708 of the San Francisco Environment Code.

Construction of the proposed project would generate approximately 102,000 cubic yards of excavated soil, which would constitute the majority of the waste generated from project construction. Depending on the quality and testing of the excavated sediment, it would be treated as either non-hazardous or hazardous waste. Non-hazardous sediment excavated from the project sites would be deposited at a landfill. The Hay Road, Altamont, and Corinda Los Trancos (Ox Mountain) Landfills have a collective remaining capacity of 118 million cubic yards. Even if no beneficial reuse of excavated material is determined to be feasible, the landfills would have sufficient capacity to accommodate the 102,000 cubic yards of materials excavated during construction. However, excavated sediment that is classified as contaminated would not be suitable for reuse and, therefore, would be treated as hazardous waste. Excavated sediments classified as hazardous waste would be hauled by truck to an appropriate facility for disposal. The closest class I landfill (for

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125 City and County of San Francisco Planning Department, Better Market Street Project Initial Study, Planning Department Case No. 2014.0012E, March 30, 2016, http://sfmea.sfplanning.org/2014.0012E_BMS_Initial%20Study%20document-Final.pdf, accessed February 26, 2019.

126 California Department of Resources Recycling and Recovery, Solid Waste Information System, Recology Hay Road (48-AA-0002) Facility Detail.

127 California Department of Resources Recycling and Recovery, *Solid Waste Information System, Altamont Landfill & Resource Recovery (01-AA-0009) Facility Detail.*

128 California Department of Resources Recycling and Recovery, *Solid Waste Information System, Corinda Los Trancos Landfill (Ox Mountain) (41-AA-0002) Facility Detail.*

hazardous waste) is the Kettleman Hills Landfill, with a capacity of 4.9 million cubic yards. This landfill would have sufficient capacity to accommodate excavated materials that have been classified as hazardous waste. Construction of the proposed project would have a less-than-significant impact on landfill capacity.

Operation

Distribution of electricity through the acquired distribution system and new infrastructure would be similar to existing operations and would not generate additional wastes, beyond what is currently generated (e.g., transformer oil is currently generated at the substations and disposed of at a permitted landfill). As stated in section A.6 above, repair and replacement of new equipment as part of ongoing maintenance activities would be generally similar to existing operations. As such, no operational changes would cause new impacts on solid waste systems, and impacts would be less than significant.

Impact UT-3: The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. (No Impact)

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) requires municipalities to adopt an integrated waste management plan to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. In addition, as described in Impact UT-2, the San Francisco Construction and Demolition Debris Recovery Ordinance (Ordinance No. 27-06) requires that a minimum of 75 percent of all construction and demolition debris be recycled and diverted from landfills. Ordinance No. 100-09, the Mandatory Recycling and Composting Ordinance, requires all San Francisco residents to separate their refuse into recyclables, compostables, and trash. Construction and operation of the proposed project would be subject to these ordinances as well as all other applicable statutes and regulations related to solid waste and hazardous waste. In addition, all landfills identified by the SFPUC for the disposal and recycling of construction and demolition debris are permitted for the types of waste that would be generated by the proposed project; these landfills are required to meet federal, state, and local solid waste regulations. The proposed project would comply with applicable federal, state, and local solid waste regulations, and no impact would occur.

Impact C-UT: The project, in combination with the cumulative projects, would not result in significant cumulative impacts on utilities and service systems. (Less than Significant)

The geographic scope of cumulative impacts on water, wastewater treatment, and stormwater drainage facilities is generally the service areas of the water and wastewater providers that serve the project area. For landfill capacity during construction, the geographic scope consists of the service areas of San Francisco and the surrounding municipalities where recycling, reuse, and disposal of construction-related waste could occur. For compliance with solid waste statutes and regulations, the geographic area encompasses the service areas of San Francisco and San Mateo Counties.

Water Facilities

As discussed in Impact UT-1, construction of the proposed project would require the use of both potable and non-potable water. Other projects proposed in the city (including those listed in Table 10) are also expected to involve the use of potable and non-potable water during construction. Any use of potable or non-potable water during construction of the proposed project and cumulative projects would be temporary and would not exceed available water supplies; cumulative construction-related impacts would be less than significant. Project operations would not appreciably alter existing water usage and would not contribute considerably

to any potential cumulative impact on water supplies from cumulative development projects. Impacts would be less than significant.

Wastewater Treatment and Stormwater Drainage Facilities

As discussed in Impact UT-1, the proposed project operations would have no impact on wastewater treatment or stormwater drainage facilities and, therefore, would not contribute to any potential cumulative impacts on those facilities. The cumulative projects could involve construction-related wastewater discharges to the combined sewer system, resulting in increased discharges to the combined sewer system. Construction-period discharges would be temporary in nature and would not typically involve the use or discharge of large volumes of water. Permit requirements would ensure that discharges to the combined sewer system would not exceed the volume or treatment requirements of the local treatment plants. As a result, proposed project construction, in combination with the cumulative projects, would have a less-than-significant cumulative impact on wastewater treatment facilities and stormwater drainage facilities.

Electric Power, Natural Gas, and Telecommunications Facilities

As discussed above, the environmental impacts from the construction and operation of the electric distribution system modifications are evaluated in this initial study. The proposed project would separate the electricity system in San Francisco from PG&E's system in San Mateo county, which would include installation of new electrical distribution lines and equipment. The project would not result in the construction of new or expanded electric power facilities, other than proposed project components. Any potential future improvements to the system would be capital projects subject to independent environmental review. Any electricity needed for operation of new components (such as monitoring equipment, HVAC, and lighting) would be minor and would not contribute considerably to any potential cumulative impact related to electric power needs from the cumulative projects.

During construction, the proposed project and other cumulative projects could necessitate relocation of electric power, natural gas, or telecommunications facilities during excavation. Relocation of affected utilities, if necessary, would be site-specific and would not combine to result in a cumulative environmental impact.

Landfill Capacity and Compliance with Solid Waste Statutes and Regulations

The proposed project would have no impacts related to conflicts with solid waste statutes and regulations; therefore, the cumulative analysis does not consider this topic. The proposed project and the cumulative projects identified in Table 10 as well as those in surrounding municipalities, would generate construction waste and dispose of the waste in offsite disposal facilities. Construction waste from the proposed project and cumulative projects would be largely offset by existing San Francisco ordinances and the policies of other municipalities regarding waste reduction. The landfills where waste from the cumulative projects and the proposed project would be disposed of have more than 118 million cubic yards of total remaining

capacity, and none of the landfills are anticipated to reach capacity prior to 2034.[129,130,131,132,133,134,135] The existing landfills would have a sufficient capacity to accommodate construction-generated waste for the proposed projects and reasonably foreseeable cumulative projects. As such, the proposed project, in combination with the cumulative projects, would have a less-than-significant cumulative impact on landfill capacity.

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129 California Department of Resources Recycling and Recovery, Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mountain) (41-AA-0002).

130 San Mateo County Environmental Health Division, Ox Mountain Landfill Environmental Impact Report Technical Addendum, Clarification of Landfill Capacity, March 2017.

131 California Department of Resources Recycling and Recovery, Facility/Site Summary Details: Kettleman Hills – B18 Nonhaz Codisposal (16-AA-0023).

132 California Department of Resources Recycling and Recovery, Facility/Site Summary Details: Altamont Landfill & Resource Recovery (01-AA-0009).

133 Waste Management, Inc., *Altamont Landfill Sustainability*, http://altamontlandfill.wm.com/sustainability/index.jsp, accessed October 28, 2018.

134 Waste Management, Inc., Kettleman Hills.

135 Waste Management, Inc., Chemical Waste Management of the Northwest.

E.14. Public Services

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
14. PUBLIC SERVICES—Would the project:					
a) 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 public services such as fire protection, police protection, schools, parks, or other public facilities?	☐	☐	☒	☐	☐

Impact PS-1: The proposed project would not result in substantial adverse physical impacts associated with the provision of or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services, such as fire protection, police protection, schools, parks, or public facilities. (Less than Significant)

The San Francisco Police Department and San Francisco Fire Department provide emergency services in most of the project area, while the cities of Daly City and Brisbane provide services within their jurisdictions.

Construction

Incidents requiring law enforcement, fire protection, or emergency medical services could occur during construction. Responding to such incidents is routine for the police and fire departments as construction projects are common and ongoing. Furthermore, any incremental increase in demand for these services during construction would be temporary and would not require construction of new or physically altered facilities to maintain service ratios. As discussed under Impact PH-1, project construction workers who do not live in the project vicinity would most likely commute from elsewhere in the region rather than relocate from more distant cities or towns and would not cause population growth in the area. Therefore, construction of the proposed project would not result in the need for new or expanded schools, parks, or other public facilities due to relocation of construction workers. Construction impacts related to the provision of new or altered public service facilities would be less than significant.

Operation

Project components would be designed in accordance with all applicable fire codes and public safety standards, including SFPUC seismic design requirements.[136] As such, typical operations of new infrastructure would not require elevated level of emergency response from emergency service providers,

[136] San Francisco Public Utilities Commission, General Seismic Requirements for Design of New Facilities and Upgrade of Existing Facilities, June 2014.

and would not require construction of new or physically altered facilities to maintain service ratios. Impacts would be less than significant.

The proposed project would not involve developing new residential units or services that would generate population growth in the area. While the SFPUC would employ up to 200 new workers to operate the electrical system, the workforce likely would be drawn from the existing San Francisco Bay area labor market pool and is not expected to induce population growth. Therefore, the proposed project would not cause an increase in the demand on existing schools that would affect school enrollment or performance objectives and would not result in the need for new or expanded parks. The proposed project would have no impact related to the provision of new or altered schools and recreational facilities.

Impact C-PS: The proposed project, in combination with other reasonably foreseeable projects, would not have a significant cumulative impact on public services. (Less than Significant)

Construction

The geographic scope for potential cumulative public service impacts encompasses the areas served by the police district and fire stations that would serve the proposed project. As discussed under Impact PS-1, construction of the proposed project could result in the need for law enforcement, fire protection, or emergency medical services response. Construction of cumulative projects could result in the same need for police, fire, and emergency services that serve the proposed project area. The potential increase in demand for police, fire, and emergency services during construction of the proposed and cumulative projects would be temporary.

The city has initiated six-year hiring plans for both the police and fire departments.[137] Given the ongoing efforts of each department to increase staffing levels and facilities to accommodate projected growth, any increased need for law enforcement or fire protection services resulting from the proposed project and reasonably foreseeable projects would not be expected to exceed the level of demand anticipated by the police or fire departments or require the construction of new or physically altered governmental facilities that were not already planned. Similar public services planning occurs in the cities of Daly City and Brisbane. As a result, the proposed project in combination with the cumulative projects would result in a less-than-significant cumulative impact related to emergency services.

Construction of the proposed project is not anticipated to induce population growth that would result in substantial adverse physical impacts or generate the need for new or physically altered schools or recreational areas. As a result, construction of the proposed project would not contribute considerably to any potential cumulative impact on schools or result in the need for new or physically altered schools or recreational areas (less than significant).

Operation

As discussed in Impact PS-1, operation of the proposed project would typically not result in the need for new or altered public service facilities as the new employees would be drawn from the existing San Francisco Bay area labor market pool and the project not expected to induce population growth. Operations and maintenance activities would be similar to existing operations and, as discussed above, would not result in

[137] City and County of San Francisco, Office of the Mayor, Mayor Lee Announces Long Term and Comprehensive Hiring Plan for City's Police and Fire.

the need for new or expanded physical emergency service facilities. As such, the proposed project would not contribute considerably to potential impacts of population growth in the vicinity of emergency service provider needs and the cumulative impact would be less than significant.

E.15. Biological Resources

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
15. BIOLOGICAL RESOURCES—Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (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?	☐	☐	☐	☐	☒

This section describes the existing terrestrial biological resources within the vicinity of the proposed project based upon a biological resources assessment that included database queries from the California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database, desktop analysis using aerial photography (Google Earth), and a focused survey of undeveloped project sites **(Appendix D - Biological Resources Technical Memorandum)**. Based on the database searches, no critical habitat for any species was identified in the project area. Potential sensitive plant and wildlife species identified within the project area from the database searches are listed in Appendix D.

The project sites are located in urban areas, within existing streets, sidewalks, substations, parking, and landscaped areas adjacent to predominantly residential, commercial, and industrial uses. No wetlands, riparian habitat, or other sensitive natural communities occur within the project area. The project sites do not contain any established migratory wildlife corridors or native wildlife nursery sites. The project sites are not located within any local, regional, or state habitat conservation plan areas; therefore, topics 14 (b), (c), (d), and (f) are not applicable to the proposed project and are not discussed further.

Impact BI-1: Project construction would have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Less than Significant)

Construction

A total of 40 sensitive plant species, including 11 federal and/or state endangered species (bent-flowered fiddleneck, Franciscan manzanita, Presidio manzanita, San Bruno Mountain manzanita, Pacific manzanita, robust spineflower, San Francisco lessingia, showy Indian clover, white-rayed pentachaeta, California seablite, and beach layia), were listed on the CNDDB and/or IPaC searches within the proposed project vicinity (within ¼-mile). Because the project would occur in developed and landscaped areas, no suitable habitat for sensitive plant species occurs in the project area. Many sensitive plant species listed on the CNDDB represent plants documented more than 50 years ago, in areas that have since undergone extensive development, thereby eliminating suitable habitat for plant species. Many other plant species were identified in the CNDDB due to generalized sighting locations, but for which suitable habitat may be present at nearby naturally vegetated areas such as San Bruno Mountain, Lake Merced, Fort Funston, McLaren Park and Bayview Park.

Of the 32 sensitive wildlife species, 23 federal or state listed (endangered, threatened, candidate or fully protected) animal/insect species documented in the CNDDB and/or USFWS IPaC searches; however, none of them have the potential to occur in the project area. As all project sites are developed with urban uses, there is no suitable habitat for the listed mammals (salt marsh harvest mouse and southern sea otter), reptiles (green sea turtle and San Francisco garter snake), amphibian (California red-legged frog), fish (delta smelt and tidewater goby), butterfly species (Bay checkerspot, Callippe silverspot, Mission blue, Myrtle's silverspot, and San Bruno Elfin), insect (western bumble bee), or bird species (California Ridgeway's rail, California least tern, marbled murrelet, short-tailed albatross, California brown pelican, peregrine falcon, California black rail, bank swallow, and western snowy plover). Similar to the sensitive plant species, there may be areas surrounding the project sites with suitable habitat for listed animal species, such as San Bruno Mountain, Lake Merced, Fort Funston, McLaren Park, Bayview Park, and San Francisco Bay. The California Ridgeway's rail was documented in 2011 in a marsh area located between Highway 101 and San Francisco Bay, approximately 500 feet south of the proposed distribution line segment along Harney Way.

Nesting birds could be present in street trees and other trees in the vicinity of the project area depending upon the season. If nesting birds are present in the project area during construction, nesting efforts could be disrupted by increases in noise and visual disturbance associated with construction. The loss of an active nest could constitute unauthorized take under the federal Migratory Bird Treaty Act and/or the California Fish and Game Code. SFPUC Standard Construction Measure 7 (Biological Resources) requires preconstruction surveys for nesting birds and compliance with appropriate federal and state requirements if any active nests are discovered. Standard Construction Measure 7 (Biological Resources) also includes the implementation of avoidance measures if active nests are discovered, such as requiring tree removal to occur outside the nesting season and/or after any young have fledged and the implementation of work area exclusion buffers around active nests. The loss of an active nest would be avoided through implementation of SFPUC Standard Construction Measure 7 (Biological Resources) and potential impacts would be less than significant.

Operations

Typical operations of the new infrastructure would have no new impacts on biological resources. Routine repair and replacement activities would be similar to existing operations. Therefore, project operations on biological resources would be less than significant.

Impact BI-2: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (No Impact)

Construction

The SFPUC would comply with all local, state and federal requirements for the protection of biological resources, including any applicable tree protection ordinances. Project construction is not anticipated to remove any trees; however, tree pruning and potential removal or trimming of scrub may be needed to facilitate access, particularly at the Broderick-Terry Duel Site Landmark Park in Daly City. The project would comply with the substantive requirements of the urban forestry ordinances in San Francisco,[138] Daly City,[139] Brisbane,[140] and San Mateo County.[141] With compliance with the requirements of local ordinances for tree preservation, the project would avoid any conflict with local policies or ordinances protecting trees. There are no other local policies or ordinances protecting biological resources that apply to the proposed project. Therefore, no impact would occur.

Operation

Typical operations of the system within the acquired assets would have no impact on biological resources. The project would comply with all local policies or ordinances protecting biological resources, such as the requirements of the urban forestry ordinances in San Francisco and San Mateo counties, Daly City, and Brisbane. No impact would occur.

Impact C-BI: The proposed project, in combination with the cumulative projects, would not result in significant impacts to biological resources. (Less than Significant)

For biological resources, the geographic scope for cumulative impacts includes the project area and vicinity within 0.25 mile. As discussed above, the project would have no impact on wetlands, riparian habitat, sensitive natural communities, and therefore would not contribute to any potential cumulative impacts on these resources. The proposed project and cumulative projects would not result in significant impacts on the same biological resources related to construction and maintenance activities because the project area does not provide habitat for special-status species due to its urban setting. Project construction and maintenance would be short-term at any location along the distribution system. Birds that may occur in the cumulative project area would be acclimated to highly urbanized environments and cumulative projects would be subject to the same regulations for protection of biological resources, such as the Migratory Bird

138 San Francisco Public Works Code, article 16.

139 City of Daly City Municipal Code, chapter 12.40.

140 City of Brisbane Municipal Code, chapter 12.12.

141 San Mateo County Ordinance No. 2427, and Ordinance Code Division VIII, Part 3.

Treaty Act and urban forestry ordinances. The proposed project, in combination with the cumulative projects, would have a less-than-significant cumulative impact on biological resources.

E.16. Geology and Soils

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

The project sites are not located within an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no active or potentially active faults exist on or in the immediate vicinity of the site.[142] The proposed project does not propose septic tanks or alternative wastewater disposal systems. Therefore, Topics E.16(a)(i) and E.16(e) are not applicable and not discussed further.

[142] California Department of Conservation, California Geological Survey, Regulatory Maps. Available at http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps.

Impact GE-1: The proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides. (Less than Significant)

Seismic Ground Shaking

The project area is in a seismically active region near the boundary between two major tectonic plates, the Pacific Plate to the southwest and the North American Plate to the northeast. The relative movement between the Pacific Plate and the North American Plate generally occurs across a 50-mile-wide zone extending from the San Gregorio Fault in the southwest to the Great Valley Thrust Belt in the northeast. Strain produced by the relative motions of these plates is relieved by right lateral strike slip faulting on the San Andreas Fault Zone and related faults (San Gregorio, Calaveras, Hayward), and by vertical reverse slip displacement on the Great Valley and other thrust faults in the central California area.

A study by the United States Geological Survey (USGS) 2014 Working Group on California Earthquake Probabilities concludes that there is a 72 percent probability of a strong earthquake (maximum moment magnitude [Mw] ≥ 6.7) occurring in the San Francisco Bay region over the next 30 years (starting in 2014)[143]. The probability of a strong earthquake (Mw ≥ 6.7) occurring during that time period is 33 percent for the North San Andreas Fault Zone, 32 percent for the Hayward-Rodgers Creek Fault Zone, and 25 percent for the Calaveras Fault Zone.[144]

The nearest active fault to the project sites is the northern segment of the San Andreas Fault, which is located approximately 7 miles to the southwest. Further from the project sites are the northern Hayward Fault and the San Gregorio Fault, which are located approximately 11 miles northeast and southwest of the project site, respectively.[145] The intensity of earthquake ground motion at the project sites would depend upon the characteristics of the generating fault, distance to the earthquake fault, magnitude and duration of the earthquake, and specific subsurface conditions. Ground shaking is the primary cause of earthquake damage to man-made structures, strong ground shaking could cause shearing, differential settlement, or heave of structures causing damage to buildings and structures. The project sites are located in an area of high seismicity where amplified strong to very strong ground shaking could occur resulting from a large earthquake on the San Andreas Fault Zone or any of the active regional faults.

The SFPUC seismic design engineering standard and requirements[146] set forth consistent criteria for seismic design and retrofit of all facilities and components. The seismic design standard incorporates by reference, where appropriate, the applicable building codes and industry standard procedures normally used for the design and rehabilitation of such facilities. These codes and standards specify minimum seismic design requirements. Due to the high seismic hazards in the San Francisco area, the SFPUC seismic design standard provides design requirements that may exceed applicable building codes or industry standards for specific facilities and components. The seismic design standard requires geotechnical and seismologic studies of a site and further specifies seismic analysis and design methodology to be used in the project analyses in

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143 2014 Working Group on California Earthquake Probabilities (WCCEP), 2015a, "A New Earthquake Forecast for California's Complex Fault System," U.S. Geological Survey 2015-3009. http://pubs.usgs.gov/fs/2015/3009/

144 2014 Working Group on California Earthquake Probabilities (WGCEP), 2015b. "Long-Term Time-Dependent Model for the Third Uniform California Earthquake Rupture Forecast, Version 3 (UCERF 3)," Bulletin of the Seismological Society of America, March 10.

145 AGS, Geotechnical Data Report for the Southeast Outfall (SEO) Islais Creek Crossing Replacement Project, San Francisco, CA, June 2020.

146 SFPUC, General Seismic Requirements for Design of New Facilities and Upgrade of Existing Facilities. June 2014.

order to design a seismically resilient system. For example, each vault and intervening duct bank would be designed to accommodate seismic motion. Geotechnical borings would be performed approximately every 800 feet to evaluate settlement, differential settlement, liquefaction, and other pertinent issues. These analyses would be used to determine the appropriate vault support, duct bank material selection, duct bank connection details, and similar items. In addition, cables and their encasements (i.e., HDPE conduits) have a degree of flexibility of movement. Duct banks would be located in accordance with standard minimum spacing requirements to minimize conflicts with existing utilities, e.g., a PG&E gas line in Alemany Boulevard between Sickles and Geneva avenues. As described in section A.4.1, electric cables would be protected within conduits and backfill material within the trenches and equipped with protective devices to isolate and de-energize the electrical circuit if compromised. Because the project would be evaluated and designed to meet level of service performance goals to avoid unacceptable system failure and engineered in accordance with SFPUC seismic design standards, the proposed project would not expose persons or structures to substantial adverse effects related to ground shaking, and would not exacerbate existing conditions related to ground shaking. The impact would be less than significant.

Seismic-Related Ground Failure

Liquefaction is the phenomenon in which saturated granular sediments temporarily lose their shear strength due to increases in pore pressure during periods of earthquake-induced strong ground shaking. The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude and frequency of earthquakes in the surrounding region. Saturated, unconsolidated silts, sands, and silty sands within 50 feet of the ground surface are most susceptible to liquefaction. Liquefaction-related phenomena include lateral spreading, ground oscillation, flow failures, loss of bearing strength, subsidence, and buoyancy effects.

Lateral spreading is a seismically induced ground deformation failure in which near surface soil layers typically break into blocks that progressively move downslope or toward a nearby free face such as a stream channel, river embankment, or a shoreline. Underground facilities and structural elements (e.g., duct banks, spread footings, pile foundations, etc.) that extend through or across a zone of lateral spreading may be pulled apart or sheared.

The proposed project sites would be located in various settings, including areas mapped by USGS as having "very high" liquefaction susceptibility.[147] Potentially liquefiable materials include loose sandy layers in artificial fill. The project design includes use of foundations for vaults and above-ground equipment to reduce potential damage to project components due to liquefaction. At the Potrero substation, this could include deep piles that would extend below the Bay Mud and provide support for stacked STATCOM units.

Because the proposed project would be designed to meet stringent SFPUC seismic design standards, the proposed project would not expose persons or structures to substantial adverse effects or exacerbate existing conditions related to ground failure, including liquefaction, and the impact would be less than significant.

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147 Witter, R. C., Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler, and Carolyn E. Randolph, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California, Liquefaction Susceptibility Map, USGS Open File Report 2006-1037, 2006.

Landslides

Other forms of seismically induced ground failures which may affect the project area include seismically induced landslides and slope failures. Although much of the project area is relatively level, some areas are more steeply sloped. Excavations for new duct banks could result in slope instability, potentially triggering slope failures that could result in landslides, slumps, and soil creeps. Areas that are most susceptible to earthquake-induced landslides are steep slopes in poorly cemented or highly fractured rocks, areas underlain by loose and/or weak soils, and areas on or adjacent to existing landslide deposits.

Construction activities would include open cut excavation for duct bank installation and operational maintenance would also require excavation as needed for repair/replacement of equipment. As required by Cal-OSHA, excavations deeper than 5 feet would require shoring that would address slope stability during construction. As discussed above, the proposed project would be designed per the SFPUC seismic design standard to meet the level of service performance goals and to avoid unacceptable system failure. As such, the proposed project would not expose persons or structures to substantial adverse effects or exacerbate existing conditions related to landslides, and the impact would be less than significant.

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

Construction-related ground disturbance (including from repair and replacement activities during operation) consisting of clearing, trenching, and excavation could increase the potential for soil erosion in the area of ground disturbance. As discussed in Section E.17, Hydrology and Water Quality, in order to comply with the proposed project's Construction General Permit or article 4.2 construction site runoff control permit requirements, the SFPUC or its contractor(s) would be required to develop and implement an erosion and sediment control plan or a Storm Water Pollution Prevention Plan (SWPPP) to address construction-related runoff. The plan would include a suite of best management practices tailored to the proposed project to prevent erosion. These best management practices may include measures such as use of straw wattles, sandbags, track-out control, silt fencing, and covering stockpiles, to control erosion and sedimentation during construction and prevent discharge of soils into stormwater runoff. The SFPUC would conduct routine inspections of all best management practices to document compliance and identify deficiencies to be corrected. The SFPUC would also implement standard construction measures to further prevent erosion. SFPUC Standard Construction Measure 3 (Water Quality) requires the implementation of erosion and sediment controls (e.g., fiber rolls and/or gravel bags around storm drain inlets, silt fencing, etc.). Compliance with permit requirements and implementation of SFPUC Standard Construction Measure 3 (Water Quality) would minimize potential for soil erosion during construction. Although some topsoil would be removed during clearing and grubbing in landscaped areas, the amount of topsoil removed would be limited and would be replaced with clean fill material following completion of the proposed project. As a result, impacts associated with soil erosion and loss of topsoil would be less than significant.

Impact GE-3: The proposed project would not be located on geologic unit or soil that is unstable, or that would become unstable as a result of the proposed project. (Less than Significant)

As discussed in Impact GE-1, the project area consists of level and sloped areas. Although the excavations may be subject to sliding, installation of shoring would provide slope protection during construction and maintenance. Further requisite foundations for new infrastructure at the Martin and Potrero substations would be installed in accordance with the SFPUC's seismic design requirements. As such, the proposed

project would not expose persons or structures to substantial adverse effects or exacerbate existing conditions related to geologic unit or soil instability, and the impact would be less than significant.

Impact GE-4: The proposed project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property. (Less than Significant)

Expansive soils are characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Changes in soil moisture could result from a number of factors, including rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soils are typically very fine grained with a high to very high percentage of clay. Soils with moderate to high shrink-swell potential would be classified as expansive soils.

SFPUC Standard Construction Measure 1 (Seismic and Geotechnical Studies) requires that a geotechnical study be completed for the proposed project. This study would include a characterization of the soils on the site and provide engineering and design requirements to minimize risks related to safety and reliability. Furthermore, design of the proposed project would conform to applicable building code and engineering standards. These engineering design standards would require the project design to address the potential for expansive soils for proposed new infrastructure. Therefore, this impact would be less than significant.

Impact GE-5: The proposed project would not directly or indirectly destroy a unique geologic feature. (No Impact)

A unique geologic feature embodies distinctive characteristics of any regional or local geologic principles, provides a key piece of information important to geologic history, contains minerals not known to occur elsewhere in the county, and/or is used as a teaching tool. The project area is located primarily within existing public right-of-way and substations. There are no unique geologic features in the project area; therefore, no impacts on unique geologic features would occur.

Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site. (Less than Significant with Mitigation)

Paleontological resources are the fossilized evidence of past life found in the geologic record. Fossils are preserved in sedimentary rocks and may include bones, teeth, shells, leaves, and wood. Despite the abundance of these rocks, and the vast number of organisms that have lived through time, preservation of plant or animal remains as fossils can be a rare occurrence. Paleontological resources are considered nonrenewable resources because the organisms they represent no longer exist, thus, once destroyed, these resources can never be replaced. Not all paleontological discoveries are considered of scientific importance, as such there are several criteria to determine the scientific importance of fossils. These criteria include if fossils provide data on the following: evolutionary relationships and developmental trends among organisms, both living and extinct; the age of rock units, sedimentary stratum, or depositional history of the region; development of biological communities; or, unusual or spectacular circumstances in the history of

life.[148, 149] These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes.

The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping classifications of soil units can be used for assessing the potential for the occurrence of paleontological resources. The city, in collaboration with qualified paleontologist, developed the San Francisco Paleontological Sensitivity Map[150] to classify the potential for areas in the city to yield paleontological findings using the modified Potential Fossil Yield Classification system as the basis for its paleontological potential designations.[151] The classification system is a predictive resource-management tool founded on two basic facts of paleontology: that occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them, and that the likelihood of the presence of fossils can be broadly predicted from the distribution of geologic units at or near the surface. The paleontological potential designations classify soil potential from very low potential to very high potential. Within the city, paleontological potential ranges from very low to moderate potential, and unknown potential. The type of geologic units that contain a high or very high occurrence were not identified in the city based on currently available data.

According to the San Francisco Planning Department's paleontological resources sensitivity map, a large portion of the proposed project is located in areas identified as having a moderate potential to encounter paleontological resources. These areas include Pleistocene-age surficial deposits, Colma Formation, and Merced Foundation. While fill materials are anticipated to be present below roadways several feet in depth, excavations would be approximately 6-feet-deep for duct bank installation (maximum 11 feet where there are utilities conflicts), 7-feet-deep for power vaults, and 10-feet-deep within substations. Based on the reasonable potential that paleontological resources may be present at some locations, these proposed excavations could damage or destroy paleontological resources; this impact is therefore considered potentially significant. **Mitigation Measure M-GE-6: Paleontological Resources Evaluation and Mitigation Plan** would minimize potential environmental impacts by ensuring that workers can recognize paleontological resources and by putting in place procedures should unforeseen discovery of paleontological resources occur. In addition, the SFPUC would develop a paleontological monitoring program that would include monitoring by a qualified paleontologist during excavation in areas identified as having a moderate potential to contain paleontological resources. If paleontological resources were uncovered during project construction, work would be required to halt pending documentation of the find and evaluation of whether any paleontological resource encountered constitutes a significant paleontological resource under CEQA, and that proper procedures be followed to provide appropriate treatment or avoidance of significant paleontological resources to preserve their information potential. With implementation of Mitigation Measure M-GE-6, the impact on paleontological resources that may be present would be less than significant with mitigation.

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148 Murphey, P.C., Knauss, G.E., Fisk, L.H., Deméré, T.A., and Reynolds, R.E. 2019. Best practices in mitigation paleontology: Proceedings of the San Diego Society of Natural History, No. 47.

149 Society of Vertebrate Paleontology (SVP), 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee.

150 Paleo Solutions, Inc. March 15, 2018. This is a proprietary database.

151 United States Department of the Interior, Bureau of Land Management (BLM). Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. IM 2016-124. Instruction Memorandum https://www.blm.gov/sites/blm.gov/files/uploads/IM2016-124_att1.pdf

M-GE-6: Paleontological Resources Evaluation, Monitoring, and Mitigation Program

Prior to construction, the SFPUC shall retain a qualified paleontologist to prepare a site-specific paleontological resources evaluation, monitoring, and mitigation plan. The plan shall identify the sensitivity for significant (well-preserved, uncommon, and/or identifiable) paleontological resources based on prior field surveys, museum records, or scientific or technical literature, and the potential depth of such resources in areas of project excavation greater than five feet. The plan shall specify the specific locations where construction monitoring would be required; preconstruction coordination procedures; worker environmental awareness training; unanticipated discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; and procedures for reporting the results of the monitoring program. The program shall be consistent with the Society for Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impact to Paleontological Resources (2010), Murphey's Best Practices in Mitigation Paleontology (2019), and the requirements of the designated repository for any fossils collected. Paleontological monitoring and/or fossil recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks, unless extended at the direction of the Environmental Review Officer (ERO). The plan shall include:

1. Worker training: The SFPUC shall ensure that all workers are trained on the contents of the Paleontological Resources Alert Sheet, as provided by the San Francisco Planning Department, to provide worker environmental awareness training regarding potential paleontological resources. The alert sheet also shall be prominently displayed at the construction site during ground disturbing activities. In addition, the SFPUC shall inform construction personnel of the immediate stop work procedures and contact information to be followed if bones or other potential fossils are unearthed at the project sites, and the laws and regulations protecting paleontological resources. The SFPUC shall retain documentation of the worker training and location of the informational handout display.

2. Inadvertent Discovery Procedures: In the event of the discovery of an unanticipated paleontological resource during construction, excavations within 25 feet of the find shall be temporarily halted until the discovery is examined by a qualified paleontologist as recommended by the Society of Vertebrate Paleontology standards (SVP 2010) and Best Practices in Mitigation Paleontology (Murphey et al. 2019). The qualified paleontologist shall assess if the discovery is scientifically significant and present the findings of this assessment to the ERO and the SFPUC. Work within the sensitive area shall resume only when deemed appropriate by the qualified paleontologist in consultation with the ERO and the SFPUC. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a brief Paleontological Evaluation Letter. The Paleontological Evaluation Letter shall be submitted to the ERO and the SFPUC within 30 days of the consultation.

3. Monitoring: The paleontological monitoring program shall be conducted in accordance with the approved monitoring plan. The monitor shall inspect graded cut slopes, trench sidewalls, spoils piles, and other types of construction excavations for the presence of fossils. The goal of monitoring is to identify scientifically significant subsurface fossils as

soon as they are unearthed in order to minimize damage to them and remove them and associated contextual data from the area of ground disturbance. Microfossil sampling, macrofossil recovery, and avoidance of fossils may all occur during any monitoring program. The paleontological monitor shall record observations and be authorized to collect samples as warranted for analysis in a paleontological laboratory.

4. Fossil Recovery Plan: If paleontological resources are discovered and determined to be scientifically significant, and a fossil recovery plan is required by the ERO, fossil recovery shall be conducted in accordance with an approved fossil recovery plan. Fossil recovery may involve simply collecting a fully exposed fossil from the ground surface, or may involve a systematic excavation, depending upon the size and complexity of the fossil discovery. Fossil excavations should be designed in such a way as to minimize construction delays while properly collecting the fossil and associated data according to professional paleontological standards. The project paleontological consultant, SFPUC, and ERO shall meet and discuss the scope of the fossil recovery plan and/or avoidance plan that shall be submitted to the ERO and the SFPUC for review and approval. The fossil recovery plan shall identify how the proposed fossil recovery program will preserve the significant information the paleontological resource is expected to contain or describe measures to avoid fossil locality. The plan shall specify procedures for the following elements: field methods; cataloguing and laboratory analysis; and curation of any recovered data having scientific research value into an appropriate repository.

5. Reporting: A paleontology report shall be submitted to the ERO and the SFPUC within 30 days (or as agreed) from the conclusion of ground disturbing activities. The report shall include the following, as applicable: dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility.

Impact C-GE-1: The proposed project, in combination with reasonably foreseeable projects, would not have a significant impact related to geology and soils. (Less than Significant)

Although the entire Bay Area is located within a seismically active region with a high risk of seismic hazards and a wide variety of geologic conditions, the geographic scope for potential geology and soils impacts is generally localized and site-specific, encompassing the project sites and immediate vicinity. In order to have a cumulative impact, adverse geologic impacts would have to occur at the same time and in the same location or similar conditions of the proposed project.

Seismic Ground Shaking, Seismic-Related Ground Failure, and Landslides

The proposed project and cumulative projects could be subject to strong ground shaking and would be located in areas mapped as having “very high” liquefaction susceptibility. As described in Impact GE-1, the proposed project would be designed and constructed in accordance with current building codes, standards, and engineering practices to protect against seismic and soil-related hazards. The cumulative projects would also be subject to these same requirements. Thus, the proposed project, in combination with the cumulative projects, would have a less-than-significant cumulative impact related to seismic safety and unstable soils.

Soil Erosion

As discussed in Impact GE-2, ground disturbance associated with the proposed project could increase the potential for soil erosion. The cumulative projects could also increase the potential for erosion in the immediate project area. However, the cumulative projects would be subject to the same requirements to implement erosion control measures during construction, in accordance with construction stormwater permits, and/or Article 4.1 of the San Francisco Public Works Code to reduce the potential for topsoil loss and erosion. The proposed project, in combination with the cumulative project, would have a less-than-significant cumulative impact related to erosion.

Unstable and Expansive Soils

As discussed in Impact GE-3, unstable soils and landslides could potentially be triggered by construction trenching; however, this impact is minimized with required shoring of trenches 5 feet or deeper. The cumulative projects would be required to be designed and constructed in accordance with current state and/or federal building codes, standards, and engineering practices to protect unstable slopes and address expansive soil risks. Therefore, the proposed project, in combination with the cumulative projects, would have a less-than-significant cumulative impact related to unstable or expansive soils.

Impact C-GE-2: The proposed project, in combination with the cumulative projects, would not directly or indirectly destroy a unique paleontological resource or site. (Less than Significant)

The geographic scope of impacts on a unique paleontological resource is generally localized and site-specific, encompassing the project sites and immediate vicinity. All of the cumulative projects identified are assumed to involve some degree of ground disturbance during construction and, to the extent this disturbance would extend into geological units that could be fossil bearing, could also have the potential to uncover and disturb previously unidentified unique paleontological resources if present. As discussed under Impact GE-6, the proposed project has the potential to damage unique paleontological resources if they are present during excavation. This impact would be less than significant with implementation of Mitigation Measure M-GE-6: Pre-Construction Paleontological Resources Evaluation and Mitigation Plan. Cumulative construction projects would involve excavations; however, given their distances from the project sites, would not affect the same unique paleontological resources, if any are present, as the proposed project. Because the project would have a less-than-significant impact on paleontological resources with mitigation and impacts on paleontological resources are site-specific and generally limited to the immediate fossil location, the proposed project, in combination with other cumulative projects, would not result in a significant cumulative impact on paleontological resources. This impact would be less than significant.

E.17. Hydrology and Water Quality

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
17. HYDROLOGY AND WATER QUALITY— Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐	☐
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 through the addition of impervious surfaces, in a manner that would:	☐	☐	☒	☐	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐	☐
iii) create or contribute runoff water which would exceed the capacity of exiting or planning stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐	☐
iv) impede or redirect flood flows	☐	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk releases of pollutants due to project inundation?	☐	☐	☒	☐	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐	☐

Impact HY-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (Less than Significant)

Construction

Stormwater Discharge

If not properly managed, construction activities such as ground disturbance, stockpiling of excavated materials, and transportation of materials could result in temporary soil erosion. Sediments disturbed by construction activities could flow into the combined sewer system, separate stormwater system, or directly into receiving waters in violation of water quality standards when it is raining. Chemical releases from the project work area and staging areas could also occur due to the use of paints, solvents, fuels, lubricants, and other hazardous materials associated with heavy construction equipment. Once released, these hazardous

materials could be transported to receiving waters through stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

Under the federal Clean Water Act, the discharge of pollutants to waters of the United States is prohibited unless performed in compliance with a NPDES permit. Any stormwater discharge during construction that flows into the city's combined sewer system would receive treatment to standards set forth in the facility's NPDES permit prior to discharge into the bay.

Water quality impacts or construction-related stormwater discharges directly would be minimized through compliance with applicable regulations. In San Francisco, the proposed project would be required to comply with the construction site runoff control permit in accordance with article 4.2 of the San Francisco Public Works Code. According to the permit, an erosion and sediment control plan must be prepared and implemented. The erosion and sediment control plan must include the following information: location and perimeter of the site, location of nearby storm drains and/or catch basins, existing and proposed roadways and drainage patterns within the site, and a drawing or diagram of the sediment and erosion control devices to be used on site. At a minimum, the plan would also contain a visual monitoring program and a chemical monitoring program for nonvisible pollutants that could result from use and storage of hazardous materials. The erosion and sediment control plan would also specify minimum best management practices related to housekeeping (storage of construction materials, waste management, vehicle storage and maintenance, landscape materials, pollutant control); non-stormwater management; erosion control; sediment control; and runon and runoff control. Under the construction site runoff control permit requirements of public works code article 4.2, the construction contractor would be required to conduct daily inspections during the rainy season (October 1 through April 15) and weekly during the dry season, and maintenance of all erosion and sediment controls and must provide inspection and maintenance information to the SFPUC as the administering agency.

The State Water Resources Control Board (water board) adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and Order 2012-0006-DWQ), referred to herein as the Construction General Permit. The Construction General Permit requires the development and implementation of a SWPPP for construction activities that disturb 1 or more acres of soil. The proposed project would also be required to comply with the Construction General Permit in addition to the construction site runoff control permit. Article 4.2 provides that for projects subject to both the Construction General Permit and article 4.2, a SWPPP may be prepared in lieu of the erosion and sediment control plan.[152]

In Daly City and Brisbane, the SFPUC would comply with the local requirements of excavation permits and construction stormwater controls. In addition to the regulatory requirements for runoff control, the SFPUC would implement standard construction measures that protect water quality. SFPUC Standard Construction Measure 3 (Water Quality) requires the implementation of erosion and sediment controls (e.g., fiber rolls and/or gravel bags around storm drain inlets, silt fencing, etc.) tailored to the proposed project to prevent discharges of sediment and other pollutants into storm drains and all surface waters. SFPUC Standard Construction Measure 6 (Hazardous Materials) requires the preparation and implementation of a plan for treating, containing, and removing contaminated or hazardous materials in accordance with applicable local, state, and federal regulations. With compliance with the Construction General Permit if required,

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[152] SFPUC, Construction Site Runoff Control Program, 2018, http://www.sfwater.org/index.aspx?page=235, accessed on February 28, 2019.

article 4.2 construction site runoff control permit requirements, and SFPUC Standard Construction Measures 3 (Water Quality) and 6 (Hazardous Materials), water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff would be less than significant.

Dewatering

Dewatering could be needed for excavated trenches in areas of shallow groundwater to facilitate dry working areas. If construction dewatering is necessary, the proposed project would be required to obtain a Batch Wastewater Discharge Permit from the SFPUC prior to any dewatering activities. Groundwater encountered during construction activities would be subject to the requirements of article 4.1 of the public works code, which requires that groundwater meet specified water quality standards before it may be discharged into the sewer system. Similarly, a discharge permit would be needed from local jurisdictions for project sites in Brisbane, Daly City, and unincorporated San Mateo county. The discharge permits would contain appropriate standards and may also require the installation of meters to measure the volume of discharge. These measures would ensure protection of water quality from discharge of groundwater during construction of the proposed project. The project dewatering would be completed in compliance with applicable state and local water quality protection requirements; therefore, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of dewatering waste would be less than significant.

Operation

Following installation of the new electrical system infrastructure, operations of the electrical system would continue similar to existing operations and would not result in new water quality impacts. Regulatory requirements for maintenance activities that involve soil disturbance would be similar to those described above for construction and would also be less than significant.

Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (Less than Significant)

Construction

As discussed above in HY-1, project construction could require dewatering in areas of shallow groundwater. These areas would likely be located near the shoreline where shallow groundwater is brackish. Brackish water occurs where seawater mixes with fresh water. Because it has higher salinity than fresh water, it is not suitable for drinking or most industrial purposes. Furthermore, any effects related to lowering the water table due to dewatering would be temporary and localized and would not substantially deplete groundwater resources. As a result, construction impacts on groundwater resources would be less than significant.

Operation

The proposed project does not include any groundwater wells for extraction of groundwater, nor would it increase impervious surfaces. Therefore, project operation would have no impact on groundwater supplies.

Impact HY-3: The proposed project would not substantially alter the existing drainage patterns of the site or area, including through alteration of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion and siltation on- or off-site. (Less than Significant)

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. (Less than Significant)

iii. 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. (Less than Significant)

iv. Impede or redirect flood flow. (Less than Significant)

Construction

The project sites are mostly covered with impervious surfaces (i.e., paved streets, sidewalks, and substation yards) and do not contain any surface streams or water courses. Construction activities would include excavation of trenches for installation of duct banks and foundations, and pole replacement. These earthmoving activities would not alter the drainage patterns of the site because excavations would be temporary and restored following installation of infrastructure; however, the activities have the potential to result in erosion and siltation impacts. These impacts are addressed under Impact HY-1. During construction, the SFPUC would implement SFPUC Standard Construction Measure 3 (Water Quality), which requires the implementation of site-specific erosion and sediment controls (e.g., fiber rolls and/or gravel bags around storm drain inlets, silt fences) that would prevent discharges of sediment into storm drains and all surface water ways. This measure, in combination with compliance with permit requirements as further described under Impact HY-1, would minimize potential for erosion and siltation. As such, impacts associated with erosion and siltation on- or off-site would be less than significant.

Operation

Upon completion of construction, disturbed areas would be restored to match approximate pre-construction conditions. New above-ground infrastructure at the substations (i.e., control houses, transformers, and STATCOM units) or replaced utility poles along the distribution alignments would be located in paved areas and would not increase impervious surfaces. Given their small size, these components would not impede flood flows or substantially alter drainage patterns. Project operations would not require the storage of hazardous materials on the project sites or increase the use of routine chemicals used for maintenance. As such, the project would not result in an increase in stormwater discharge or polluted runoff. Operations and maintenance activities could require excavation for repairs to subsurface infrastructure and pole replacement; however, all such work would be performed in compliance with the water quality regulations and SFPUC Standard Construction Measure 3 (Water Quality) as discussed above. Impacts related to erosion, siltation, and stormwater drainage systems from alteration of drainage patterns would be less than significant.

Impact HY-4: The proposed project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. (Less than Significant)

The majority of the proposed project sites are not located within a designated flood hazard zone;[153, 154, 155, 156] a small portion of the Martin Substation is located within the 100-year flood boundary. Portions of the site are also within a mapped tsunami inundation zone.[157] This mapping indicates that the project site within the Potrero substation is located in an area identified for potential inundation in the event of a tsunami or seiche based on existing site grades under a worst-case scenario. A 2008 study conducted in support of the Tsunami Annex to San Francisco's Emergency Response Plan used probabilistic hazard modeling and estimated that San Francisco may experience a tsunami once every 50 to 60 years.[158]

Construction

Sediment and materials excavated during construction would be temporarily stockpiled on the substation sites. Soils at the project sites are expected to contain some contaminants (Refer to Section E.18, Hazards and Hazardous Materials, for more details). Impact HY-1 analyzes impacts on water quality from construction activities. Excavated materials would only be temporarily stockpiled on site prior to disposal at landfill facilities. Construction materials and chemicals would also be stored within appropriate containment systems. With appropriate containment of excavated sediments and construction chemicals and the low likelihood that a flood or tsunami would occur during the construction period, the potential for the proposed project to contribute a substantial quantity of pollutants in the event of inundation would be less than significant.

Operation

No soil stockpiles or construction chemicals would remain permanently on any project site during operation of the existing electrical system. Project operation would not include the storage or use of any additional hazardous materials not already stored and used at existing PG&E facilities or increase the use of hazardous materials used for routine maintenance. Because portions of the Martin Substation are located within a 100-year flood zone, proposed facilities located within this zone must be elevated to be above the floodplain. In addition, major equipment containing insulating liquids (e.g., transformers) must be designed to have containment systems that accommodate both the 100-year storm event and the total volume of oil in case of a spill. Therefore, the project would not risk release of pollutants due to project inundation in flood hazard zones and the potential for the proposed project operations to contribute a substantial quantity of pollutants in the event of inundation would be less than significant.

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153 San Francisco Public Utilities Commission 100-Year Storm Flood Risk Map, July 2019. Available at: https://sfplanninggis.org/floodmap/

154 City and County of San Francisco. San Francisco Interim Floodplain Map, SE San Francisco Preliminary November 12, 2018. Available at: https://sfgsa.org/sites/default/files/Document/SF_SE.pdf

155 City of Brisbane General Plan. 1994. The General Plan, City of Brisbane. Chapter X, Community Health and Safety, Figure X-H, p. X-18. Available at: https://www.brisbaneca.org/sites/default/files/fileattachments/community_development/page/2401/010_chapterx-communityhealthandsafety.pdf

156 San Mateo County. 2012. FEMA Flood Zone – San Mateo County. Available at: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/fema_flood.pdf

157 California Emergency Management Agency, Tsunami Inundation Map for Emergency Planning, San Francisco North Quadrangle/San Francisco South Quadrangle (SF Bay), June 15, 2009. Available at: https://www.conservation.ca.gov/cgs/Documents/Tsunami/Maps/Tsunami_Inundation_SouthSFNorthSF_SFBay_SanFrancisco.pdf

158 City and County of San Francisco. 2017. Emergency Response Plan, an Element of the CCSF Emergency Management Program, Tsunami Annex, May.

Impact HY-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (Less than Significant)

Construction and Operation

As the project would not adversely affect groundwater supplies, it would not conflict with any sustainable groundwater management plan.

The San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan) identifies beneficial water uses, water quality objectives to protect the designated beneficial water uses, and strategies and time schedules to achieve the water quality objectives. The Basin Plan identifies 19 beneficial uses that apply to key waterbodies. Water quality objectives for surface waters encompass features such as bacteria levels, sediment, pH, and temperature. Strategies include *Total Maximum Daily Loads*[159] required by the Clean Water Act for waterbodies where water quality standards are not currently met.[160] The central San Francisco Bay is currently an impaired waterbody with levels of several types of pollutants in excess of standards.[161]

A project could interfere with the Basin Plan by degrading water quality in such a way that identified water quality objectives or strategies are not met and beneficial uses are adversely affected or not achieved. The Basin Plan identifies beneficial uses for the central San Francisco Bay, which is the receiving water body for stormwater and wastewater in the project area; discharges in the central San Francisco Bay originate from the SFPUC's southeast treatment plant and other local treatment facilities, and other areas with separate sewer systems.

As analyzed under Impact HY-1, the proposed project has the potential to impact water quality. Excavation activities could release soils (including soils potentially contaminated by hazardous substances) which could become entrained in stormwater runoff, and ultimately reach central San Francisco Bay. Increased concentrations of sediment and contaminants as a result of project construction potentially could result in a conflict with the Basin Plan Total Maximum Daily Loads, objectives, and ultimately beneficial uses identified for the central San Francisco Bay. Compliance with permit requirements, as described under Impact HY-1 above, would require the implementation of best management practices for erosion control that would minimize potential discharges containing sediment and contaminants to meet water quality objectives. The impact would be less than significant.

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159 A Total Maximum Daily Load is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant.

160 California San Francisco Regional Water Quality Control Board. 2019. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), November 5. Available: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml

161 State Water Resources Control Board, Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), April 11, 2018, https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

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

Construction and Operation

The geographic scope for potential cumulative impacts on hydrology and water quality encompasses the project area and water bodies that could be affected by activities in the project area. As the project would not substantially affect groundwater supplies, the focus is on surface water impacts to San Francisco Bay.

Water Quality, Water Quality Standards, and Waste Discharge Requirements

Construction and operational activities associated with the cumulative projects located within the geographic scope either drain directly or drain into sewer systems that ultimately discharge into the San Francisco Bay.

Cumulative projects and the proposed project could further exacerbate the high pollutant levels in central San Francisco Bay through erosion and sedimentation from construction site activities or stormwater runoff to the storm drain system and waterways, accidental releases of chemicals and fuels, or discharges of dewatering fluids. The cumulative projects in San Francisco and the proposed project would all be subject to applicable water quality regulatory requirements and would be required to comply with local regulations such as article 4.2 the San Francisco Public Works Code, which requires an erosion and sediment control plan, or the Construction General Permit for projects that disturb more than 1 acre. Cumulative projects within Brisbane and Daly City would be subject to the Construction General Permit for projects that disturb more than 1 acre and other local excavation permit requirements. The erosion and sediment control plan and Construction General Permit would require implementation of best management practices for the management of construction wastewater and stormwater runoff, which may include use of straw wattles, sandbags, and silt fencing that would control erosion and sedimentation during construction and prevent discharge of soils into stormwater runoff. Compliance with regulatory requirements and permits would minimize potential impacts on water quality. Therefore, the proposed project, in combination with other projects, would have a less-than-significant cumulative impact on water quality.

Groundwater

Groundwater dewatering could be required during the construction or maintenance of the proposed project and the cumulative projects. Dewatering of groundwater associated with the cumulative projects would not involve sufficient volumes or be at sufficient depths to deplete groundwater resources in the project vicinity. Furthermore, any cumulative effects related to lowering the water table due to dewatering would be temporary and localized and would not be expected to substantially deplete groundwater resources during construction of the cumulative projects. The cumulative projects would be subject to the same groundwater dewatering requirements as the proposed project, and dewatering would only occur during construction. No groundwater dewatering would occur during operation of the proposed project and thus, it would not contribute to any long-term effects on groundwater supplies. The proposed project, in combination with other projects, would have a less-than-significant cumulative impact on groundwater recharge and supplies.

Stormwater and Flood Flows

In the long term, cumulative development in the project area could increase the amount of impervious surfaces in the project vicinity (which is largely developed with impervious surfaces already) and intensify various types of land uses, leading to a cumulative increase in stormwater and wastewater generation, and

an increase in polluted runoff and stormwater discharges. The cumulative projects would implement best management practices as required by an erosion and sediment control plan or the Construction General Permit and low-impact development measures to reduce the flow rate and volume of stormwater entering the combined sewer system, thereby reducing the frequency of combined sewer overflows, minimizing flooding effects, and protecting water quality. Furthermore, the proposed project would not change the existing topography of the project sites such that flood flows would be redirected. The proposed project, in combination with other projects, would have a less-than-significant cumulative impact on stormwater drainage systems and flood flows.

E.18. Hazards and Hazardous Materials

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
18. HAZARDS AND HAZARDOUS MATERIALS—Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☐	☒

The nearest public airport to the project sites is San Francisco International Airport, which is approximately 7 miles to the south. The project sites are not within the airport's land use plan area; therefore, Topic E.18(e) is not applicable to the proposed project and are not discussed further. The proposed project is not located in or near wildlands; therefore, Topic E.18(g) is not applicable to the proposed project and is not discussed further.[162]

This section describes existing conditions of the project area with respect to hazards and hazardous materials. It identifies project areas potentially affected by hazardous materials in soil or groundwater based upon a review of a list of sites with potentially hazardous wastes compiled by the Secretary for Environmental Protection pursuant to section 65962.5 of the Government Code, commonly referred to as the Cortese List. The Cortese List includes hazardous waste sites from the Department of Toxic Substances

[162] U.S. Forest Service, Wildland-Urban Interface for 2010, November 23, 2018, https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=bfec19a14d96451eb3a04e52c4537dee.

Control's (DTSC) EnviroStor database, a list of hazardous facilities identified by DTSC that are subject to corrective action pursuant to Health and Safety Code Section 25187.5, a list of leaking underground storage tank sites maintained by the State Water Resources Control Board (water board) in its Geotracker database, a list of solid waste disposal sites maintained by the water board, and a list of sites with active cease and desist orders and clean up and abatement orders.

The databases and lists described above were reviewed to determine whether the proposed project distribution line alignments and infrastructure would be located on or adjacent to sites with known contamination. The proposed underground distribution lines and distribution separation work would be located mostly within city streets and parking areas. Some of the alignments would be located near permitted underground storage tank sites or listed leaking underground storage tank (LUST) cleanup sites. LUST sites in the vicinity of the proposed alignment have been remediated and/or closed because the regional water board or county agency has determined that no further action or remediation is necessary to protect public health and safety and the environment. Proposed infrastructure at the Martin Substation and Potrero Substation would be located on listed hazardous waste sites, as discussed under Impact HZ-2.

Impact HZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)

Construction

Accidental Spills and Releases

Project construction would require the routine use of hazardous materials such as fuels, lubricants, paints, and solvents for motorized heavy equipment, such as excavators, bulldozers, and backhoes. Minor maintenance activities and refueling of equipment and vehicles from mobile or stationary fuel supply sources could occur at the project work area and proposed staging areas during construction. If not properly managed, the routine transport, use, and disposal of hazardous materials could pose a threat to human health or the environment. For example, hazardous materials have the potential to be spilled accidentally during maintenance, refueling, or servicing of equipment and vehicles. Improperly disposed of, spilled, or leaking hazardous materials could create a significant hazard to workers, the public, or the environment.

Hazardous materials handling, disposal, and transportation must occur in accordance with applicable federal, state, and local regulations. The federal Resource Conservation and Recovery Act governs hazardous material disposal, ensuring that only facilities permitted to accept the specific waste are used. Transportation of hazardous materials must comply with the Resource Conservation and Recovery Act and United States Department of Transportation regulations. In addition to federal regulations, workers handling hazardous materials are required to adhere to California Occupational Safety and Health Administration health and safety requirements, which include preparation and implementation of emergency evacuation plans and health and safety plans, safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Title 8 of the California Code of Regulations requires employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings. Title 8 also includes hazard communication program regulations that contain worker safety training and hazard information requirements, procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and

preparing health and safety plans to protect workers. In addition to complying with mandatory regulatory requirements, potential impacts would be further reduced by implementing SFPUC Standard Construction Measure 6 (Hazardous Materials), which specifies measures to prevent the release of hazardous materials used during construction, such as storing hazardous materials pursuant to manufacturer recommendation, maintaining spill kits onsite, and containing any spills that occur to the extent safe and feasible, followed by collection and disposal in accordance with applicable laws. SFPUC Standard Construction Measure 6 (Hazardous Materials) also specifies that the SFPUC must report spills of reportable quantity to applicable agencies. Compliance with regulatory requirements and implementation of SFPUC Standard Construction Measure 6 (Hazardous Materials) would minimize potential impacts related to the routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As a result, the impact would be less than significant.

Exposure to Potentially Contaminated Soil or Groundwater

The project sites are located in proximity to I-280 (a potential historical source of aerially deposited lead), current and historical industrial uses, closed leaking underground storage tank sites, and areas of undocumented fill material. The project sites are also located on known hazardous waste sites, discussed further in Impact HZ-2, below. Project construction activities would involve excavation and trenching to install underground distribution lines and distribution separation work mostly in streets and public areas, as well as to install new infrastructure within substations. If hazardous materials were present in excavated soil or groundwater, a release to the environment could occur, and construction workers and the public could be exposed to those hazardous materials or chemical vapors during construction. To determine whether the project could present a risk to humans or the environment as a result of hazardous materials within the soil or groundwater, it is important to understand both the history of sites as well as the regulations in place to protect the health of the public and workers. The following analysis describes the robust regulatory framework that would minimize the potential release of or exposure to contaminants in soil or groundwater that could affect human health or the environment.

In total, approximately 10miles of trenching for duct banks and 300 vaults would be installed underground, mostly within public rights-of-way and private roads. An additional 4 miles of trenching (for transmission lines) would be required at the substations. As discussed above, some of the alignments would be located near permitted underground storage tank sites or LUST cleanup sites identified on Geotracker. All LUST cases identified in the vicinity of the proposed alignments are closed indicating that, if present, soil and groundwater contamination is below regulatory cleanup levels. However, it is possible that releases may have migrated off-site or that unanticipated hazardous materials could be encountered during excavation. The SFPUC has adopted standard construction measures, with the purpose of ensuring that environmentally responsible practices are applied to all SFPUC projects.[163] In addition, the SFPUC must comply with city, state, and federal regulations that govern the handling, storage, transportation, and disposal of hazardous materials.

In accordance with SFPUC Standard Construction Measure 6, the following measure would be included in the contract specifications for construction:

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[163] San Francisco Public Utilities Commission, *SFPUC Standard Construction Measures*, Memorandum from Harlan L. Kelly, Jr., general manager, to Michael Carlin, Juliet Ellis, Barbara Hale, Kathryn How, Tommy Moala, Steven Ritchie, and Eric Sandler, July 1, 2015.

Where there is reason to believe that site soil or groundwater may contain hazardous materials, the SFPUC shall undertake an assessment of the site in accordance with applicable local requirements (e.g., Maher Ordinance) or use reasonable commercial standards (e.g., Phase I and Phase II assessments, as needed). If hazardous materials will be disturbed, the SFPUC shall prepare and implement a plan for treating, containing, or removing the hazardous materials in accordance with any applicable local, state, and federal regulations so as to avoid any adverse exposure to the material during and after construction. In addition, any unidentified hazardous materials encountered during construction will likewise be characterized and appropriately treated, contained, or removed to avoid any adverse exposure. Measures will also be implemented to prevent the release of hazardous materials used during construction, such as storing them pursuant to manufacturer recommendation, maintaining spill kits onsite, and containing any spills that occur to the extent safe and feasible, followed by collection and disposal in accordance with applicable laws. The SFPUC will report spills of reportable quantity to applicable agencies (e.g., the Governor's Office of Emergency Services).

For project sites located in areas that the San Francisco Department of Public Health, Environmental Health Division (health department), as set forth in San Francisco Building Code section 106A.3.2.4, has identified as likely containing hazardous substances in soil or groundwater, the SFPUC would conform to the requirements of article 22A of the San Francisco Health Code, which the health department administers. Under article 22A (commonly called “the Maher program”), the SFPUC would retain the services of a qualified professional to prepare a site history report (commonly referred to as a phase I environmental site assessment) to determine whether hazardous substances may be present on the site at levels that exceed health risk levels or other applicable standards established by California Environmental Protection Agency, the regional water board, and the Department of Toxics Substances Control (DTSC). If so, the SFPUC may be required to conduct soil and/or groundwater sampling and analysis under a work plan approved by the health department. Where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the SFPUC would be required to submit a site mitigation plan (SMP) to the health department describing the methods that will be implemented to handle and dispose of contaminated materials to prevent impacts to public health and the environment during construction.

To comply with various regulatory requirements, the health department would require the SMP to contain measures to mitigate potential risks to the environment and to protect construction workers, nearby residents, workers, and/or pedestrians from potential exposure to hazardous substances and underground structures during soil excavation and grading activities. The SMP must also contain procedures for initial response to unanticipated conditions such as discovery of underground storage tanks, sumps, or pipelines during excavation activities. Specified construction procedures at a minimum must comply with building code section 106A.3.2.6.3 and health code article 22B related to construction dust control; and San Francisco Public Works Code section 146 *et seq.* concerning construction site runoff control. Additional measures would typically include notification, field screening, and worker health and safety measures to comply with Cal/OSHA requirements. The health department would require discovered USTs to be closed pursuant to article 21 of the health code and comply with applicable provisions of chapters 6.7 and 6.75 of the California Health and Safety Code (commencing with section 25280) and its implementing regulations. The closure of any UST must also be conducted in accordance with a permit from the San Francisco Fire Department.

For project sites outside of San Francisco, the San Mateo County Health Department, Environmental Health Division, is the Certified Unified Program Agency for oversight of hazardous materials storage and cleanup in San Mateo County, which applies similar procedures as described for San Francisco. The SFPUC standard construction measures, state, and federal regulations would apply to soil and groundwater handling at all sites.

In compliance with SFPUC standard construction measures, health code article 22A, and state and federal regulations, the SFPUC would assess the potential for site contamination prior to construction and would handle potential soil and/or groundwater contamination in accordance with all applicable regulatory requirements. Thus, the proposed project would not result in a significant hazard to the public or environment from the release of contaminated soil and/or groundwater.

Exposure to Naturally Occurring Asbestos in Soil

Asbestos is a common name for a group of naturally occurring fibrous silicate minerals that are made up of thin but strong, durable fibers. Asbestos is a known carcinogen and presents a public health hazard if it is present in the friable (easily crumbled) form. Naturally occurring asbestos would most likely be encountered in Franciscan ultramafic rock[164] (primarily serpentinite[165]) or Franciscan mélange.[166] At least part of the project would be located in areas where these bedrock units have been identified or on Pleistocene age undifferentiated sedimentary deposits (Qu) or slope debris and ravine fill (Qsr) that are derived at least partly from these Franciscan Complex bedrock units and could also contain naturally occurring asbestos. Investigations at the Potrero Power Plant Power Station sub-area indicate the presence of asbestos resulting from historical land reclamation activities which placed fill material consisting of Franciscan Complex bedrock intermixed with building debris, industrial waste and a mixture of soils in areas east of the historic shoreline.[167] Construction workers, the public, or the environment could be exposed to asbestos if project-related excavation were to disturb bedrock units or fill that contain these materials.

The California Air Resources Board (California air board or CARB) has adopted an asbestos Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations (CARB, 2002). The ATCM requires the use of best available dust mitigation measures to prevent offsite migration of asbestos-containing dust from road construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas of ultramafic rock, serpentine, or asbestos. The Bay Area air district implements the regulation, which became effective on July 22, 2002.

For construction projects located in areas where ultramafic rock (primarily serpentinite) is mapped and that would disturb 1 acre or less of land, the ATCM requires the site operator to implement standard dust mitigation measures before construction begins, and to maintain each measure throughout the duration of the construction project. For construction activities that would disturb more than one acre of asbestos-containing materials, project sponsors are required to prepare an asbestos dust mitigation plan specifying

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164 Ultramafic rocks are formed in high-temperature environments well below the surface of the earth.

165 Serpentine is a naturally occurring group of minerals that can be formed when ultramafic rocks are metamorphosed during uplift to the earth's surface. Serpentinite is a rock consisting of one or more serpentine minerals. This rock type is commonly associated with ultramafic rock along earthquake faults. Small amounts of chrysotile asbestos, a fibrous form of serpentine minerals, are common in serpentinite.

166 Mélange is a mixture of rock materials of differing sizes and types typically contained within a sheared matrix.

167 San Francisco Planning Department, Potrero Power Station Mixed-Use Development Project Draft EIR, Case No. 2017-011878ENV, Section 4.K. October 2018. Available: https://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_2.pdf

measures that would be taken to ensure that no visible dust crosses the property boundary. The asbestos dust mitigation plan must be submitted to and approved by the Bay Area air district prior to the beginning of construction, and the site operator must ensure the implementation of all measures throughout the construction project. In addition, the Bay Area air district could require air monitoring for offsite migration of asbestos dust during construction activities and might change the plan on the basis of the air monitoring results.

With compliance with asbestos dust regulations, excavation and trenching within areas of naturally occurring asbestos would not result in adverse effects associated with potential exposure of workers, the public, or the environment.

Operation

The proposed project would involve continued operations and maintenance of the electricity system in San Francisco. Operation would not require additional hazardous materials usage for routine maintenance than currently used and, therefore, would not create a significant hazard through the routine transport, use and disposal of hazardous materials. Maintenance activities associated with repair and replacement of new infrastructure could entail repairs and replacement to subsurface distribution lines and equipment which would require temporary excavations to access infrastructure and could encounter hazardous materials in soil and/or groundwater. This work would be conducted in compliance with the standard construction measures and regulations described for construction, and thus would not result in significant hazard to the public or environment from potential releases of contaminated soil or groundwater. The impact would be less than significant.

Impact HZ-2: The project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5; however, it would not create a significant hazard to the public or the environment. (Less than Significant)

The PG&E Martin substation and Potrero substations are identified on multiple lists of hazardous materials sites compiled pursuant to Government Code section 65962.5, although many of the identified listing are no longer considered active cases. These facilities are large and have been subdivided into smaller areas for environmental investigation and remediation purposes. The following provides an overview of the history and status of environmental investigation at these sites, the location of project components within the subareas of investigation, and the land use covenants/deed restrictions that pertain to any excavations within the substation facilities.

PG&E Martin Service Center, 731 Schwerin Avenue, Daly City

This 49-acre site is generally bounded by Schwerin Street on the west, Geneva Avenue to the north, Bayshore Boulevard to the east, and Main Street, Bayshore Park and Midway Village Housing complex to the south. From 1906 to 1913, part of the property was occupied by the Martin Gas Plant, a manufactured gas plant, which made gas for lighting, heating, cooking and for fueling electric generators. The gas plant at this site used oil as a feedstock and the soil beneath the site was contaminated with residues including benzene, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH)-motor oil, and TPH-diesel.[168]

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[168] DTSC. 2015. *Public Notice – Fourth Five Year Review, PG&E Martin Service Center, Daly City, California 94014,* December. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/7797836124/PGE%20Martin%20Service%20Public%20Notice.pdf

The gas plant was dismantled in 1916. The following listings and regulatory agency status are identified for various portions of the 49-acre site:

- PG&E Martin Service Center – Cleanup Program Site (Case Closed as of February 3, 2021). GeoTracker I.D. SLT2O05258
- Martin Service Daly City Yard – DTSC State Response (Certified, Operation and Maintenance as of May 4, 1995). Envirostor I.D. 41360100.
- Martin Service Operable Unit 2 and Levison Parcel – DTSC State Response (Certified, Operation and Maintenance as of June 30, 2003). Envirostor I.D. 41360093
- San Francisco Water Department – DTSC Voluntary Cleanup Program (No further action as of June 26, 2001). Envirostor I.D. 41360101.

PG&E has performed numerous soil and groundwater investigations to assess the nature and extent of manufactured gas plant residues in soil and groundwater at the site. In 1991, DTSC and PG&E entered into a consent agreement to investigate and clean up contamination at the site.[169], [170] The site was split into two operable units, OU-1 and OU-2, addressing specific areas where cleanup action was appropriate. OU-1 includes areas on the western portion of the site (known as Daly City Yard), the southern boundary of the Daly City Yard, and a strip of land between Schwerin Street and the site where surface soil contained PAHs. OU-2 encompasses the eastern portion of the site and includes the Brisbane Yard, Brisbane Yard Annex, and the Pacific Service Employees Association Clubhouse. OU-2 also addressed potential PAHs in the surface water and groundwater, including the drainage ditch, storm drain and groundwater flowing offsite to the east. Figure 3 shows the location of the specific cleanup areas within the Martin Service Center. As shown, while the proposed project facilities would be located within the Martin Service Center, they would be outside the listed hazardous materials investigation subareas, as well as outside the extent of known Martin Gas Plant contamination area.

The remedial action plan (RAP) for OU-1 was approved by DTSC in June 1993 and the RAP for OU-2 was completed in July 1998.[171] Remediation of OU-1 was completed in 1994, which consisted of an asphalt and concrete cap over the strip of land between Schwerin Street and the Martin Service Center property and concrete cap over the berm along the southern boundary of the Daly City Yard and the Schwerin Street landscape strip inside the Daly City Yard. Remediation of OU-2 was certified by DTSC in 2003. Soil management activities primarily included excavating soil containing PAHs in excess of 10 parts per million (ppm); soil containing less than 10 ppm was permitted to remain in place and was also regraded into the Brisbane Yard and Brisbane Yard Annex beneath the chip seal cap. As detailed in the RAPs and the subsequent *explanation of significant differences*, approved by DTSC on June 7, 1993, July 20, 1998, and September 20, 2000, respectively, all or a portion of the subsurface soil below the caps contain hazardous substances, including total PAHs up to 12,657 ppm in the soil and 3,566 micrograms per liter in the

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169 DTSC, 2015.

170 Haley & Aldrich, Inc. 2015. Fourth Five-Year Review for Pacific Gas and Electric Company's Martin Service Center, 731 Schwerin Street, Daly City, California. October 30, 2015. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/4917083561/Five-Year%20Reporting%202015%2010%2030%20FINAL.pdf

171 Assessor-County Clerk-Recorder. Covenant to Restrict Use of Property, Environmental Restriction (RE: PG&E Martin Service Center Brisbane and Daly City. State Board of Equalization Parcel Numbers 135-41-28 Parcel 1, 135-41-28 Parcel 2, 135-41-28B Parcel 3, 135-41-28B Parcel 4, and 135-41-3A Parcel 3). October 17, 2002. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/3408445060/SMBR_DEED_41360100.pdf

groundwater. The remedial action presented in the RAP for OU-2 includes land use restrictions, ongoing groundwater monitoring, soil management activities, and construction of a groundwater interceptor trench along the east side of the property to prevent off-site migration of contaminated groundwater.

The most recent five-year review report, dated October 2015, found that the caps on OU-1 and OU-2 remain protective provided annual inspections are conducted and any damage/wear noted is repaired. The report also concluded that groundwater monitoring frequency would be reduced to once every five years because groundwater concentrations remained below remedial action goals.[172] The results of the most recent available five-year review at the PG&E Martin Service Center Site indicate that the remedies at OU-1 and OU-2 currently protect human and environmental health. Because groundwater is no longer impacted with manufactured gas plant residues above regulatory environmental screening levels, direct exposure to manufactured gas plant-impacted soils is presently considered the primary potential health risk exposure route for the Martin Service Center.[173]

The 2018 Martin Service Center Annual Summary Report summarizes specific activities completed in 2018 and presents the activities scheduled for 2019 and 2020.[174] The report concluded that the OU-1 cap had four areas containing defects that required maintenance; sections of concrete that had cracked or deteriorated were repaired or replaced. Activities for 2019 and 2020 included the ongoing inspection of the landscaped areas, concrete cap, and perimeter fences, as needed repairs, weed abatement, and groundwater monitoring.

The Earthquake Emergency Restoration Warehouse Project Summary Report summarizes the work completed as part of that project, including repaving most of Brisbane Yard, construction of a metal warehouse building, and installation of various utilities and appurtenances.[175] All work was completed in compliance with the RWQCB-approved soil management plan and revised ambient perimeter air monitoring plan. The land use covenant between PG&E and DTSC, executed on October 17, 2002 describes the property, the remedial actions that have been implemented, and land use restrictions for the property.[176] Article IV of the covenant specifies prohibited uses (residential homes, hospitals, schools, and daycares) and activities (raising of food, drilling for water, oil or gas without prior approval by DTSC, and extraction of groundwater for purposes other than site remediation or construction dewatering). These restrictions also specify soil management procedures. No activities that will disturb the soil below the caps are allowable without a soil management plan and health and safety plan approved by DTSC. Any such work must be performed in compliance with *Guidelines for Excavations at Former Manufactured Gas Plant Sites* (PG&E, 1991) or a comparable excavation guideline approved by DTSC. Any contaminated soil brought to the surface by

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172 Haley & Aldrich, Inc., 2015.

173 Haley & Aldrich, Inc. 2017. Soil Management Plan, Pacific Gas and Electric Company Martin Service Center/Daly City MGP, 3004 Geneva Avenue Daly City, California. June. Available at: https://www.cpuc.ca.gov/environment/info/dudek/egbert/DR1-Response_Att_4_Hazards_HazardousMaterials.pdf

174 Haley & Aldrich, Inc. 2019. 2018 Martin Service Center Annual Summary Report, Former Daly City Manufactured Gas Plant Site, 3004 Geneva Avenue, Daly City California. February. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/7760953605/DCMGP_2018AnnualSummaryReport_20190206_F.pdf

175 Haley & Aldrich, Inc. 2019. Summary Report, Earthquake Emergency Restoration Warehouse Project, Former Daly City Manufactured Gas Plant Site, 3004 Geneva Avenue, Daly City California. August. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/3348116815/DCMGP_SummaryReportEQWarehouse_20190813_F_noapps.pdf.

176 Assessor-County Clerk-Recorder. Covenant to Restrict Use of Property, Environmental Restriction (RE: PG&E Martin Service Center Brisbane and Daly City. State Board of Equalization Parcel Numbers 135-41-28 Parcel 1, 135-41-28 Parcel 2, 135-41-28B Parcel 3, 135-41-28B Parcel 4, and 135-41-3A Parcel 3). October 17, 2002. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/3408445060/SMBR_DEED_41360100.pdf

grading, excavation, and trenching must be managed in accordance with applicable provisions of state and federal law. Section 1.03 of the covenant states that DTSC "concluded that the Property, as remediated, and subject to the restrictions of this Covenant, does not present an unacceptable threat to the human safety or the environment if limited to commercial, industrial, or open space use." A revised soil management plan was prepared in June 2017[177] to outline plans for the management of potentially contaminated shallow soil at the site during future excavation activities. As indicated in the soil management plan, the plan could be used to develop project-specific plans which would specify work activities, locations, depths of excavation, work schedules, and site maps, that must need to be submitted to DTSC for approval before each new project.

The last listing on the bullet list above is outside of proposed project work areas and a closed investigation.[178] The San Francisco Water Department listing is a result of voluntary cleanup associated with the SFPUC's excavation beneath the cap to access and rehabilitate a water pipeline located within an easement on the site. In compliance with the land use covenant, the SFPUC was required to obtain DTSC approval of its soil management and health and safety plans and to comply with all state and federal hazardous waste regulations.

PG&E Potrero Power Plant, 1201 Illinois Street, San Francisco

The Potrero power plant site is a 34-acre site generally bounded by Illinois Street on the west, 22nd Street on the north, 23rd Street on the south, and San Francisco Bay on the east. The site consists of Assessor's Parcel Numbers 4110-008A, 4120-002, 4175-004, 4175-005, 4175-002, 4232-001, 4232-006. A manufactured gas plant operated on the northeast portion of the site from 1872 until 1930 and was dismantled in the early 1960s.[179] The California Sugar Refinery operated in the southeast portion of the site from the 1870s until approximately 1950. The California Barrel Company operated on the site, utilizing coal in its operations. From the 1950s until 1999, PG&E owned and operated a power plant at the site until it was sold to Southern Energy Potrero LLC. Because of former uses, the site soil and groundwater are contaminated with arsenic, PAHs, toluene, ethylbenzene and xylenes, total extractable petroleum hydrocarbons, and cyanide.[180, 181] The Potrero Power Plant ceased operation in 2011. The overall site is now primarily owned by California Barrel Company LLC and the western portion is owned by PG&E.[182] PG&E owns the switchyard and general construction yard portion of the site and operates an electric substation. The following subareas, regulatory agency status, and GeoTracker I.D. are listed for the Potrero Power Plant site:

- Former Potrero Power Plant – Potrero Power Station (Open – Long-term Management as of February 16, 2021). SL 18380800

177 Haley & Aldrich, Inc. 2017.

178 Sites that are listed as "No Further Action" are closed however they remain on the Cortese list and agency databases.

179 DTSC. 2003. Docket No. HAS-A 01/02-109, Voluntary Cleanup Agreement, Health and Safety Code Section 25355.5(a)(1)(C). Signed on March 5 and 6. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/4161832511/pg-e%20potrero%20vca.pdf

180 DTSC. 2003.

181 DTSC EnviroStor. 2019. PG&E Potrero (38490009) page. Available at https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=38490009. Accessed on October 1, 2019.

182 San Francisco Planning Department. 2018. Potrero Power Station Mixed-Use Development Project, Case No. 2017-0118789ENV, State Clearinghouse No. 2017112005. Section S.1.1.1 Background, p. S-2. October 3. Available at: http://sfmea.sfplanning.org/2017-011878ENV_DEIR_Volume_1.pdf.

- Switchyard and general construction yard (Completed/Case Closed as of January 4, 2013). T10000004527
- Station A (Completed/Case Closed as of February 13, 2017). T10000004524
- Tank Farm Area (Open/Site Assessment as of January 14, 2013). T10000004529
- Northeast Area (Open/Verification Monitoring as of June 19, 2019). T10000004520
- Power Generation Facility (Open/Eligible for Closure as of June 19, 2019). T10000004528
- Hoe Down Yard (Complete/Case Closed as of December 19, 2012). T10000004496
- Offshore Area (Open/Verification monitoring as of April 2, 2020). T1000004525
- LUST Cleanup (Completed/Case Closed as of November 23, 1988). T0607500203

Figure 4 shows the western portion of the Potrero Power Station and its environmental investigation subareas. Proposed project work areas would be located only within the PG&E south switchyard, south of Humboldt Street. The status of the Switchyards and General Construction Yard is designated completed and case closed as of January 4, 2013.[183] Land use covenants cover both the switchyard and general construction yard and the hoe-down yard.

Two land use covenants were executed between PG&E and the RWQCB for the above subareas on September 15, 2011 (for the switchyard and general construction yard)[184] and October 17, 2012 (for the hoe down yard [north of 22nd Street which is outside the project site][185]). As described in article III of the covenants, development of the property shall be restricted to industrial or commercial use, and none of the following facilities shall be permitted: residence, hospitals, schools for persons under 21 years of age, or day care centers. Other requirements include, but are not limited to, notifying RWQCB of all excavation work greater than 50 cubic yards of soil, complying with the 2011 Site Management Plan[186] for all uses, maintenance and development of the property, preserving the integrity of the cap[187] (in the case of the switchyard and general construction yard) and any remedial measures previously implemented. An updated version of the 2011 Site Management Plan was prepared by Haley Aldrich in August 2015;[188] the purpose of the updated Site Management Plan, which added the gas load area (south of the switchyard adjacent to 23rd street) was to provide specific guidelines to protect human health and the environment during soil intrusive activities in the switchyard, gas load center, and general construction yard area.

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183 SWRCB Geotracker. 2015. POTRERO POWER PLANT – Switchyards and General Construction Yard (T10000004527). Available at: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000004527. Accessed on 2 October 2019.

184 California Regional Water Quality Control Board. 2011. Covenant and Environmental Restriction on Property, Potrero Switchyard and General Construction Yard, 1201 Illinois Street, San Francisco, CA APN 4175-007, Parcels 1 and 2. September 15. Available at: https://geotracker.waterboards.ca.gov/regulators/deliverable_documents/4737888932/Deedrestriction-switchyard-GYC-Recorded.pdf

185 The Hoe Down Area (T10000004496) also has its own unique site record. Clean up of the site was completed and the case is considered closed as of 12/19/12.

186 The 2011 Site Management Plan was prepared by AMEC Geomatrix, Inc, and sets forth health and safety procedures and pollutant management protocols to follow during construction and maintenance activities.

187 Cap refers to any gravel, asphalt, concrete or other surface capable of preventing exposure to underlying soil.

188 Haley & Aldrich, Inc. 2015. Updated Site Management Plan, Switchyard, Gas Load Center, and General Construction Yard. Potrero Power Plant Site, 1201 Illinois Street, San Francisco, CA. File No. 37450-701. August. Available at: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4766382575/T10000004527.PDF.

Other Potrero Power Plant Subareas. The remaining subareas of the Potrero Power Plant listed above are located outside the project area. No disturbance would occur in these areas.

Construction

PG&E Martin Substation

Proposed above- and below- ground components would be installed and constructed within the PG&E Martin Substation. As noted in the project description, the precise locations of proposed infrastructure, equipment and alignments have not yet been determined within the substations, and for the purposes of this analysis could be located within any part of the PG&E switchyard shown on Figure 3 identified as proposed project work areas. As discussed above, there are two state response sites identified in the Martin Substation area, one voluntary cleanup agreement, and one LUST site. None of these are active cleanup sites. The proposed project work areas within the Martin Substation are outside of the OU-1 and OU-2 remediation areas; however, the entire 49-acre substation is included in the land use covenant. Accordingly, any excavation and trenching would be subject to the terms and conditions of the land use covenant which requires DTSC review and approval of a health and safety plan and soil management plan prior to construction.

The basic exposure pathways through which individuals could be exposed to hazardous materials in soil or groundwater include inhalation, ingestion, and bodily contact. Construction work areas would be inaccessible to the public, and therefore, the public (other than construction workers) would not have the potential to ingest or handle soil or groundwater excavated from the site. Safety and health regulations overseen by Cal-OSHA require that construction workers involved in hazardous waste operations undergo formal health and safety training and perform all work procedures in accordance with a site-specific health and safety plan. The land use restrictions for the PG&E Martin Service Center require that the DTSC review the health and safety plan prior to approval of site activities to ensure that safe work methods and appropriate personal protective equipment are utilized to reduce the potential harmful health effects of exposures to hazardous materials at the site.

Environmental review for the SFPUC's Crystal Springs Pipeline No. 2 Replacement Project[189] (discussed above as the San Francisco Water Department site) evaluated the potential for exposure to PAHs and odors during construction activities to individuals in the site vicinity. Using the highest PAH concentration of PAHs in nearby soil samples from the PG&E Martin Site Characterization Report of 6,951 ppm and a receptor distance of 300 feet (the closest sensitive receptor to the access pit excavations), the screening-level analysis estimated that the incremental cancer risk from exposure to PAHs for one year during construction was less than 0.2 in 1 million. This risk level is well below accepted significance thresholds which range from 1 to 10 in 1 million. Further, the estimate was considered worst case because it assumed the entire excavated area would have PAH concentrations in soil equivalent to the maximum measured concentrations. Odors at off-site receptors were considered below perceptible levels. Because the project work areas are not expected to be within the known contaminated areas of the PG&E Martin Service Center, PAH concentrations are expected to be considerably lower than those used in the model, and therefore, would not represent a health risk to sensitive receptors from exposure.

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189 San Francisco Planning Department. 2010. Crystal Springs Pipeline No. 2 Replacement Project Final Environmental Impact Report, certified November.

In accordance with the land use covenant between PG&E and DTSC, the SFPUC would undertake the same process as required prior to excavation within the PG&E Martin Service Center for the Crystal Springs Pipeline No. 2 Replacement Project. The SFPUC would enter into an agreement with DTSC for DTSC review of the proposed soil management plan and health and safety plan. All work must comply with the *Guidelines for Excavations at Former Manufactured Gas Plant Sites* (PG&E, 1991) or comparable excavation guideline approved by DTSC. The site health and safety plan would ensure that appropriate work procedures and personal protective equipment would be utilized so that construction workers and the public would not be exposed to contaminants in soil and groundwater. The soil management plan would include provisions for the safe and lawful disposal of soil generated from construction activities, including requirements for treatment of extracted groundwater. Excavated soil must be analyzed for contamination and impacted soil must be disposed of at an appropriate landfill, in accordance with state and federal regulations. Groundwater extraction from dewatering of the excavations could result in contaminated water that would require appropriate handling and disposal. Contaminated water could be disposed of into the sanitary sewer in accordance with the requirements of the Bayshore Sanitary District or it would require on-site treatment to remove contaminants prior to disposal in accordance with a NPDES permit. The DTSC may require additional measures it deems necessary to protect the health of the public in the community.

As stated in the land use covenant, the residual contamination at the PG&E Martin Service Center does not present an unacceptable threat to human safety or the environment provided the restrictions of the covenant are implemented. The SFPUC and its contractor must comply with the provisions of the covenant, specifically procedures for soil management and health and safety, as well as all regulations related to hazardous waste storage, handling, transportation, and disposal. With required compliance, impacts associated with construction activities on a hazardous waste site would not result in adverse effects to people or the environment.

Potrero Power Plant

The proposed project work areas at the Potrero Power Plant are within the switchyard and general construction yard subarea, for which environmental investigation and remediation is complete. However, any development within this subarea would necessitate compliance with the conditions and requirements of the land use covenant described above, which are similar to the procedures for construction work within the Martin Substation (although the RWQCB would be the oversight agency rather than DTSC). The SFPUC would comply with all requirements of the land use covenant for the switchyard and general construction yard, including but not limited to notifying the RWQCB of proposed excavation, complying with an approved site-specific site management plan, developing a project-specific health and safety plan, and preserving the integrity of the cap. The site management plan and all other plans prepared in accordance with the land use covenant would be submitted to the RWQCB for review and approval prior to construction. In addition, SFPUC would comply with all local, state, and federal requirements concerning the handling, storage, and disposal of hazardous materials. These would include a dust control plan specifying measures to be conducted in accordance with the California Air Resources Board Asbestos Air Toxic Control Measure for control of naturally occurring asbestos, construction dust under article 22B of the San Francisco Health Code, and construction stormwater management under article 4.1 of the San Francisco Public Works Code. For the same reasons as discussed above for the Martin Service Center, the project construction within the Potrero Power Plant would not result in adverse effects associated with exposure of workers, the public, or the environment to hazardous materials in soil or groundwater.

Summary

As outlined above, recorded covenants restrict development and impose requirements for ground-disturbing activities at the Martin and Potrero substation sites, where known hazardous contamination has historically occurred. Remedial actions have been previously undertaken and continue to be maintained at these sites in order to ensure the protection of public health and the environment. Stringent requirements are specified for excavation in these areas. Although these areas are subject to land use restrictions, commercial and industrial uses are permitted, and excavation is allowed if performed in accordance with relevant plans (e.g., soil management plan and health and safety plan), relevant treatments (e.g., caps) at the sites are protected, and the oversight agency is notified in advance and approves the work. For construction work at these sites, SFPUC would comply with relevant covenants and associated plans, as well as all applicable local, state, and federal regulations related to hazardous materials. Because the project would comply with all relevant requirements concerning the handling, use and storage of hazardous materials, the project would not create a significant hazard to the public or the environment. The impact would be less than significant.

Operation

The proposed project would involve operations and maintenance of the new electricity system infrastructure in the Martin and Potrero substations. Maintenance activities such as repair and replacement of installed equipment could entail repairs which would require temporary excavations to access those facilities and could encounter hazardous materials in soil and/or groundwater. This work would be conducted in compliance with the land use covenants, standard construction measures, and regulations described for construction, and thus would not result in significant hazard to the public or environment from potential releases of contaminated soil or groundwater. The impact would be less than significant.

Impact HZ-3: The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less than Significant)

Construction

During construction, small quantities of hazardous materials could be used or stored near schools located within one-quarter mile (see section B.1, Table 9). As discussed above, hazardous materials typically used for project construction include lubricants, degreasers, paints, and fuels; none of these are acutely hazardous materials. Although construction activities could result in the inadvertent release of small quantities of hazardous materials, a spill or release at a construction site would not result in hazardous emissions with the potential to result in exposures to individuals at nearby schools. Standard construction best management practices include measures for the safe handling and storage of hazardous materials used during construction to prevent a release and methods to contain any such release if it should occur. Because the potential for a release resulting from the use or handling of hazardous materials at a construction site to affect individuals at nearby schools would be low, the project would not result in a significant adverse impact related to the use of hazardous materials during construction.

As discussed above, project construction may encounter hazardous materials in soil and groundwater at the PG&E Martin Service Center and Potrero Power Plant sites. Bayshore Elementary School is located approximately 0.15 miles west of the Martin Substation. The Friends of Potrero Hill Nursery School, a preschool, is located approximately 0.17 miles northwest of the project site at the Potrero Substation. As

shown by the screening analysis for exposure to potential emissions of airborne dust contaminated with PAHs during construction at the Martin Service Center, emissions would not result in substantial health risks at sensitive receptors located as close as 200 feet from work areas. Given that the schools are located at a substantially greater distance, emissions would not result in a significant adverse impact on children at nearby schools.

Operation

As discussed under Impact HZ-1, the proposed project would involve continued operations and maintenance of the electricity system in San Francisco, would not require the transport, use, and disposal of additional hazardous materials for routine maintenance beyond what is currently used and, therefore, would not create a significant hazard through the routine transport, use and disposal of hazardous materials. The new infrastructure (e.g. transformers, circuit breakers, duct banks and overhead lines) would not emit hazardous emissions. Impacts related to use of hazardous materials or emissions to nearby schools would be less than significant.

Impact HZ-4: The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

Construction

The proposed project is not anticipated to interfere with the San Francisco Emergency Response Plan,[190] because the plan does not designate emergency response or evacuation routes. The proposed project would not otherwise impair implementation of this plan. However, the proposed project would have a significant impact on implementation of emergency response or emergency evacuation, if construction activities were to interfere with emergency response vehicle travel or restrict access to critical facilities such as hospitals or fire stations.

Construction of the proposed project would require temporary lane closures on roadways along the distribution alignment. As part of the proposed project, the SFPUC would implement Standard Construction Measure 4, which would require implementation of traffic control measures to maintain traffic and pedestrian circulation on streets affected by construction activities, as well as coordination with local emergency responders to maintain emergency access. These measures would conform to the municipal transportation agency's Blue Book or other local requirements, which would specify the circulation and detour plans during construction and require the contractor to notify the police and emergency responders of any lane closure and traffic control measures to be implemented. Compliance with the requirements of construction permits for working within streets and implementation of SFPUC Standard Construction Measure 4 (Traffic) would minimize potential impacts to emergency response and evacuation. As a result, the impact would be less than significant.

Operation

The proposed project would not permanently alter the existing street network, and therefore operation of the proposed project would not alter emergency evacuation/response access routes. Operations and maintenance of the subsurface infrastructure and above-ground power poles could require temporary

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[190] City and County of San Francisco, Emergency Response Plan, an Element of the CCFS Emergency Management Program, May 2017.

excavation for as-needed repairs, similar to existing operations. All such work would be in conformance with the construction requirements outlined above. The impact would be less than significant.

Impact C-HZ: The proposed project, in combination with the cumulative projects, would not have a substantial cumulative impact on hazards and hazardous resources. (Less than Significant)

The geographic scope for cumulative impacts related to hazards encompasses the project sites and immediate vicinity because the effects of hazardous materials releases are generally highly localized due to the need to quickly contain any spills or to the site-specific nature of contamination at hazardous materials sites.

The cumulative projects have the potential to result in impacts from use of hazardous materials for construction and operation. These cumulative projects may involve the handling and transport of contaminated soils, and be located within an area containing contaminated soils and groundwater. Any potential hazards occurring at these cumulative project sites would be subject to the same safety and/or remediation regulations and ordinances required for the proposed project, which would reduce potential cumulative hazards. As such, the proposed project in combination with other projects, would have a less-than-significant cumulative impact related to hazards and hazardous materials.

E.19. Mineral Resources

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
19. MINERAL RESOURCES—Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☐	☒

In accordance with the Surface Mining and Reclamation Act of 1975, the California Department of Conservation, Division of Mines and Geology, currently known as the California Geological Survey, has mapped non-fuel mineral resources of the state to show where economically significant mineral deposits are either present or likely to occur, based on the best available scientific data. The proposed project are mapped by the California Department of Conservation, Division of Mines and Geology, as Mineral Resource Zone 1, indicating that substantial mineral resources do not occur within these areas.[191] Furthermore, the San Francisco General Plan does not identify any important mineral resource recovery sites in San Francisco.[192] For these reasons, Topics 19(a) and 19(b) are not applicable to the project and are not discussed further.

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[191] California Department of Conservation, Division of Mines and Geology. 1982. Aggregate Resource Sectors. South San Francisco Bay P-C Region. Special Report 146, Plate 2.65. Prepared by Melvin C. Stinson, Michael W. Manson, and John J. Plappert.

[192] San Francisco Planning Department, San Francisco General Plan, June 27, 1996, http://generalplan.sfplanning.org.

E.20. Energy

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
20. ENERGY—Would the project:					
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐	☐

Impact EN-1: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. (Less than Significant)

Construction

Construction of the proposed project would require the use of fuel- and electric-powered equipment and vehicles for construction activities. The vast majority of project construction activities would rely on fuel-powered equipment and vehicles that would consume gasoline or diesel fuel. Heavy construction equipment (e.g., cranes, pile drivers, dump trucks, backhoes, loaders, etc.) and generators would be diesel powered, while smaller construction vehicles such as pickup trucks would be gasoline powered. The precise amount of fuel required for project construction is uncertain; however, it is expected that the quantity of gasoline and diesel used for construction equipment, as well as workers' vehicles and haul vehicles, would be comparable to the quantity used for similar construction projects. The majority of electric power usage would result from operation of electric pumps during removal of water from excavated trenches. Electric power would be obtained from the grid. The construction contractor would have a financial incentive to use fuel and energy efficiently because excess usage would reduce profits. The San Francisco Clean Construction Ordinance restricts the idling time of all on-road and stationary diesel construction equipment to two minutes, thereby limiting any potential wasteful use of fuel during idling. Additionally, for projects located within the Air Pollutant Exposure Zone, the Clean Construction Ordinance requires equipment to meet or exceed Tier 2 emissions standards for off-road engines and operate with the most effective ARB verified diesel emission control strategy (VDECS). Fuel and energy usage during construction would not be wasteful or inefficient, and the impact from construction fuel and energy usage would be less than significant.

Operation

Operation of the proposed equipment, such as the STATCOM units, HVAC systems, control houses, and exterior lighting would require the use of electricity. However, the total energy delivered to serve the city's load would not change as a result of the SFPUC's acquisition of PG&E assets. The purpose of the new equipment and infrastructure constructed as part of the project are to separate the territories served by PG&E from the city and would not result in an increase in energy delivered to meet the city's electricity needs. The project would not result in an inefficient or wasteful use of energy. Maintenance activities for proposed equipment would not substantially alter the existing levels of energy usage; fuel and energy usage

during operation would not be wasteful or inefficient as described above. The impact from energy usage during project operation would be less than significant.

Impact EN-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less than Significant)

California's renewable energy and energy efficiency plans include the Renewables Portfolio Standard Program (as revised by Senate Bill X1-2), which requires utilities to increase their renewable energy generation to 33 percent by 2020, and the California Energy Efficiency Strategy Plan, which was developed to provide a roadmap for energy efficiency in California through the year 2020 and beyond. At a local level, the majority of the City and County of San Francisco's energy-efficiency requirements are geared toward commercial and residential development. The proposed project would acquire and install the infrastructure for the SFPUC to deliver electricity to its San Francisco customers. The proposed project would require minimal energy usage and use energy-efficient equipment, in compliance with the program and plan. The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant.

Impact C-EN: The proposed project, in combination with the cumulative projects, would result in less than significant cumulative impacts related to energy. (Less than Significant)

The geographic scope for potential cumulative impacts on energy resources consists of the project vicinity as well as the broader region. All current and proposed projects in San Francisco require the use of fuel and energy for construction and potentially operation. However, the projects are required to promote energy efficiency to the extent possible, consistent with applicable building codes, standards, and regulations, including City and County of San Francisco energy-efficiency requirements. In addition, project contractors have a financial incentive to use fuel and energy efficiently during construction. Operation of the proposed project would require an amount of energy comparable to the amount used for operation of the existing distribution system, as described in Impact EN-1. Therefore, the proposed project, in combination with the cumulative projects, would have a less-than-significant cumulative impact on energy and energy resources.

E.21. Agriculture and Forest Resources

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
21. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts on 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 on 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 the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. **—Would the project**					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), 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 forestland to non-forest use?	☐	☐	☐	☐	☒
e) Involve other changes in the existing environment that, because of their location or nature, could result in conversion of farmland to non-agricultural use or forestland to non-forest use?	☐	☐	☐	☐	☒

The proposed project and staging areas are located in an urban area in San Francisco. The California Department of Conservation's Farmland Mapping and Monitoring Program identifies these areas as Urban and Built-Up Land, which is defined as "…land [that] is occupied by structures with a building density of at least 1 unit to 1.5 acres… Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures."[193] No land within the city is zoned for forest uses; therefore, no forestland occurs on the project sites. Because the proposed project's work areas and staging areas do not contain agricultural or forest uses and are not zoned for such uses, the proposed project would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses; conflict with existing zoning for agricultural land or a Williamson Act contract; or involve any changes to the environment that could result in the conversion of farmland to non-agricultural use or forestland to non-forest use. Therefore, Topics E.21(a),

193 California Department of Conservation, Division of Land Resources Protection, *San Francisco Bay Area Important Farmland 2012*, September 2015.

E.21(b), E.21(c), E.21(d), and E.21(e) are not applicable to the proposed project and are not discussed further.

E.22. Wildfire

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
22. WILDFIRE —					
If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, would the project					
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildlife or the uncontrolled spread of a wildfire?	☐	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?	☐	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☐	☒

The proposed project is not located in or near a state responsibility area or lands classified as Very High Fire Hazard Severity Zones.[194] Therefore, Topics E.22(a), E.22(b), E.22(c), and E.22(d) are not applicable to the proposed project and are not discussed further.

[194] CalFire. Fire Hazard Severity Zones Maps. San Francisco, 2008, https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/.

E.23. Mandatory Findings of Significance

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
23. MANDATORY FINDINGS OF SIGNIFICANCE—Does the project:					
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	☐

Impact MF-1: Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? (Less than Significant with Mitigation)

As discussed in Section E.15, Biological Resources, the proposed project would not substantially reduce the habitat of fish or wildlife species, cause populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section E.5, Tribal Cultural Resources and Section E.16, Geology and Soils, the proposed project could result in potentially significant impacts on the environment with respect to paleontological resources and tribal cultural resources which would have the potential to eliminate important examples of California's history or prehistory, but all of these potential impacts would be reduced to a less-than-significant level with **Mitigation Measure M-TC-1: Tribal Cultural Resources Archaeological Resource Program** and **Mitigation Measure M-GE-6: Paleontological Resources Evaluation, Monitoring and Mitigation Plan**.

Impact MF-2: Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when

viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) (Less than Significant with Mitigation)

Table 10, page 40, provides a cumulative projects list of reasonably foreseeable actions. The geographic context for the proposed project's cumulative impact analyses is projects within 0.25 mile of the proposed project, with an expanded geographic scope (e.g., utilities service area) applied to some resource topics.

Cumulative impacts for each environmental topic are provided in the relevant subsections of Section E, Evaluation of Environmental Effects, of this initial study. For the reasons described in Topics E.1 through E.22, either there would be no potentially significant cumulative impacts or, with implementation of mitigation measures to address potentially significant project-level impacts, the proposed project's contribution to the cumulative impacts on the environment would be less than cumulatively considerable.

Impact MF-3: Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

The discussion in Section E, Evaluation of Environmental Effects, identifies potentially significant impacts on human beings related to construction and operational noise and air quality. Mitigation measures have been identified in this Initial Study to reduce all potentially significant impacts to a less-than-significant level. Specifically, with implementation of **Mitigation Measure M-NO-1, Construction Noise Control, Mitigation Measure M-NO-2, Stationary Equipment Noise Controls, and Mitigation Measure M-AQ-2, Construction Emissions Minimization,** the proposed project would reduce potential direct or indirect impacts on human beings to less than significant. Impact determinations of "no impact" or "less-than-significant impact" were made for the following environmental issues that could affect human beings directly or indirectly: land use, aesthetics, population and housing, transportation and circulation, greenhouse gas emissions, wind and shadow, recreation, utilities and service systems, public services, geology and soils, hydrology and water quality, hazards and hazardous materials, minerals, energy, agricultural and forest resources, and wildfire.

F. MITIGATION MEASURES

The following mitigation measures have been identified to reduce potentially significant impacts resulting from the proposed project to a less-than-significant level. Accordingly, the SFPUC will be required to implement the mitigation measures described below.

Mitigation Measures

Mitigation Measure M-TC-1: Tribal Cultural Resources Archaeological Resource Program

Native American Construction Monitoring and Sensitivity Training. A local Native American representative shall monitor soils disturbance in areas of high potential for prehistoric resources. The SFPUC or archaeological consultant shall select an Ohlone representative and the representative shall provide input on the work locations, types of soil disturbance, and appropriate timing and intensity of Native American construction monitoring. At minimum, the Native American monitor would be informed of any Native American archaeological discoveries and would participate in any subsequent testing, treatment, and monitoring relative to such discoveries. The local Native American representative, at their own discretion, shall provide a Native American cultural sensitivity training to all project contractors to inform them that the project is on Ohlone homelands; of the significance of potential tribal cultural resources; and of their role in protecting such resources should any be found during construction.

Preservation in Place or Data Recovery. In the event of the discovery of an archaeological resource of Native American origin, the Environmental Review Officer (ERO), the SFPUC, and the local Native American representative shall consult to determine whether preservation in place would be feasible and effective in mitigating project effects on the tribal cultural resource. Coordination shall take place with the previously identified Native American monitor. If it is determined that preservation-in-place of the tribal cultural resource would be both feasible and effective, then the archeological consultant shall prepare an archaeological/tribal cultural resource preservation plan (Preservation Plan) in consultation with the local Native American representative, which shall be implemented by the SFPUC during construction. The consultant shall submit a draft Preservation Plan to Planning for review and approval, and SFPUC would implement the approved plan prior to further ground disturbing activity in the area to ensure that the resource is protected.

If the ERO, in consultation with the local Native American representatives and the SFPUC, determines that preservation-in-place of the tribal cultural resources is not feasible, or would not sufficiently mitigate the impact to the tribal cultural resource, then archaeological data recovery shall be implemented as required by the ERO, consistent with procedures set forth in SFPUC standard archaeological measures II and III, and in consultation with affiliated Native American tribal representatives.

Land Acknowledgement and Interpretive Program. After data recovery has been completed, the SFPUC, in consultation with local Native American representatives including the Association of Ramaytush Ohlone, and with the archaeological consultant as needed, shall prepare a Tribal Cultural Resources Interpretation Plan (TCRIP) to guide the program. The TCRIP should describe the content, medium, and location of planned program material as well as long-term maintenance programs for

physical and digital materials. The TCRIP shall be submitted to ERO for review and approval prior to implementation of the program.

The land acknowledgement may consist of a physical plaque installed on the project site or another medium as determined through consultation with local Native American representatives. Interpretation would be either a physical installation, digital content, or other interpretive elements agreed upon by the ERO, SFPUC, and local Native American representatives. Tribal cultural resources interpretation and land acknowledgement may be planned jointly with archaeological interpretation, at the discretion of SFPUC in consultation with the tribe, the archaeological consultant, and the ERO.

Upon approval of the TCRIP and prior to project operation or completion, the interpretive program shall be implemented by the SFPUC. Local Native American representatives who are substantially involved in preparation or implementation of the interpretive program shall be appropriately compensated by the SFPUC.

Mitigation Measure M-NO-1: Construction Noise Control

SFPUC shall require its contractor to implement a project-specific construction noise control plan for construction at the Martin Substation. The SFPUC shall require its contractor to implement a project-specific noise control plan for construction at the Potrero Substation if any of the following apply: the Potrero Power Plant Mixed-Use Development project construction occurs at the same time as project construction; or, if future residents have occupied the Potrero Power Plant Mixed-Use Development by the time project construction occurs.

The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include all feasible measures to reduce construction noise. The construction noise control plan shall identify noise control measures to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA (1-hour Leq) and 10 dBA above the ambient noise level at noise sensitive receptors (nearby residents and childcare uses). The construction noise control plan shall include the following measures, or other effective measures, to reduce construction noise levels:

- Use construction vehicles and equipment that is in good working order and inspect mufflers for proper functionality.
- Select “quiet” construction methods and equipment (such as improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields) for all equipment and trucks.
- Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors.
- Prohibit idling of inactive construction equipment for more than five minutes.
- Use alternative methods to impact pile driving (such as drilled piles, sonic pile drivers, auger cast-in-place) where feasible, in consideration of geotechnical and structural requirements and conditions.
- Where the use of driven impact piles cannot be avoided, properly fit impact pile driving equipment with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer.

- Use electrically powered equipment instead of pneumatic or internal-combustion powered equipment, where feasible. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- Locate stationary noise-generating sources (such as generators) as far away as possible from noise-sensitive receptors, muffle such noise sources, and construct barriers around such sources and/or the construction site.
- Enclose or shield stationary noise sources from neighboring noise-sensitive uses with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas if feasible.
- Install temporary barriers, barrier-backed sound curtains and/or acoustical panels around working powered impact equipment and, if necessary, around the project site perimeters. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise.

The construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures and monitoring of construction noise levels:

- Designation of an on-site construction noise manager for the project;
- Notification of neighboring noise sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., pier drilling, pile driving, and other activities that may generate noise levels greater than 90 dBA at noise sensitive receptors or noise levels that may exceed 10 dBA above ambient noise levels) about the estimated duration of the activity;
- A sign posted on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- A procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- A list of measures for responding to and tracking complaints pertaining to construction noise. Such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation) and during high-intensity construction activities (e.g. pile driving) to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures.

Mitigation Measure M-NO-2: Fixed Mechanical Equipment Noise Control

The SFPUC shall demonstrate with reasonable certainty that the fixed mechanical equipment at the Potrero substation (such as heating, ventilation and air conditioning [HVAC] equipment) meets the noise limits specified in section 2909c of the noise ordinance (i.e., a 10 dB increase above ambient at a distance of 25 feet or more) and section 2909d interior noise limits of 55 dBA and 45 dBA for daytime and nighttime hours, respectively, assuming windows open, inside any sleeping or living room in any existing or future nearby residential dwelling unit except where building ventilation is

achieved through mechanical systems that allow windows to remain closed. Acoustical treatments required to meet the noise ordinance may include, but are not limited to:

- Enclosing or placing barriers around noise-generating mechanical equipment
- Installing relatively quiet models of air handlers, exhaust fans, and other mechanical equipment
- Using mufflers or silencers on equipment exhaust fans
- Orienting or shielding equipment to protect noise sensitive receptors (residents and childcare center) and
- Increasing the distance between noise-generating equipment and noise-sensitive receptors

Mitigation Measure M-NO-3: Protection of Adjacent Buildings and Utilities and Vibration Monitoring During Construction

In the event that the SFPUC determines that pile driving is required at the Potrero Substation, the SFPUC shall first avoid:

a) impact pile driving within 30 feet or vibratory pile driving within 13 feet of the industrial building located within the PG&E south switchyard; and

b) impact pile driving within 7.5 feet or vibratory pile driving within 3.5 feet of the PG&E natural gas transmission pipeline.

If it is not possible to avoid pile driving within the distances described above for the industrial building and the PG&E natural gas transmission pipeline, then the SFPUC shall undertake the following additional measures.

Prior to the start of any pile-driving activity at the Potrero Substation, the SFPUC and/or its contractor shall prepare a Pre-Construction Survey and Vibration Management and Monitoring Plan. The plan shall identify all feasible means to avoid vibration induced damage to the potentially affected industrial building and the PG&E natural gas pipeline at the PG&E south switchyard in the Potrero substation. The SFPUC shall ensure that the following requirements are included in contract specifications, as necessary.

Pre-construction Survey. Prior to the start of any ground-disturbing activity, the SFPUC or its contractor shall engage a consultant to undertake a pre-construction survey of the potentially affected industrial building and natural gas pipeline at the PG&E south switchyard. A structural engineer or other professional with similar qualifications shall document the existing conditions of the potentially affected industrial building and natural gas pipeline (e.g., records review, inspection, and photographs).

The Vibration Management and Monitoring Plan shall include, at a minimum, the following components, as applicable.

- *Maximum Vibration Level.* Based on the anticipated construction methods and condition of the affected industrial building and natural gas pipeline, a qualified acoustical/vibration

consultant, in consultation with a structural engineer or other qualified professional, shall establish a maximum vibration level that shall not be exceeded at the industrial building and natural gas pipeline based on existing building and pipeline conditions, soil conditions, and anticipated construction practices (common standards are a PPV of 0.5 inch per second for modern industrial/commercial buildings and a PPV of 4.0 for underground utilities).

- *Buffer Distances.* The plan shall identify buffer distances for construction equipment to maintain vibration levels below thresholds at the structures (e.g., 0.5 PPV in/sec for the existing building at the Potrero south switchyard and 4.0 PPV in/sec for the gas pipeline).

- *Alternative Construction Equipment and Techniques*. The plan shall identify potential alternative construction equipment and techniques that could be implemented to reduce construction vibration levels to below established standards in the event vibration monitoring indicates vibration levels may exceed the maximum vibration level identified in the plan (e.g. pre-drilled piles, pile blocks, smaller equipment).

- *Vibration Monitoring*. The plan shall identify the method and equipment for vibration monitoring. To ensure that construction vibration levels do not exceed the established standard, the acoustical/vibration consultant shall monitor vibration levels at the potentially affected industrial building and natural gas pipeline and prohibit construction activities that generate vibration levels in excess of the standard.
    - Should construction vibration levels be observed in excess of the standards established in the plan, the contractor shall halt construction and put alternative construction techniques identified in the plan into practice.
    - The structural engineer (or other qualified professional) shall inspect the potentially affected industrial building and natural gas pipeline in the event the construction activities exceed the established standards.
    - If vibration damage has occurred, the structural engineer shall immediately notify the SFPUC and prepare a damage report documenting the features of the building and/or structure that has been damaged.
- *Damage Repair*. The plan shall also identify provisions to be followed should damage occur due to construction-related vibration. The building and pipeline shall be remediated to their pre-construction condition at the conclusion of vibration-generating activity on the site.

Mitigation Measure M-AQ-2: Construction Emissions Minimization

Potrero and Martin Substation Work

The SFPUC shall require Tier 4 engines for all off-road construction equipment used for the Potrero and Martin substations.

Distribution Line Work

The SFPUC shall undertake the following for distribution line work that requires 4 or more crews to work concurrently:

1. While substation work is occurring, the SFPUC shall limit distribution work crews to no more than 3 work crews operating concurrently. Upon completion of all substation work, the SFPUC shall limit distribution work crews to no more than 4 work crews operating concurrently; or,

2. The SFPUC shall require all distribution line work to use Tier 4 off road engines. Additionally, during substation work, the SFPUC shall limit distribution work crews to no more than 7 work crews operating concurrently. Upon completion of all substation work, the SFPUC shall limit substation work crews to no more than 8 work crews operating concurrently.

For distribution line work, the SFPUC may use a different mix of work crews and off-road construction equipment provided the SFPUC submits documentation supported by substantial evidence to the Environmental Review Officer that the SFPUC's desired mix of work crews and off-road construction equipment do not exceed any of the following performance standards: average daily emissions of ROG, NOx, and PM2.5 shall not exceed 54 lbs/day, average daily emissions of PM10 shall not exceed 82 lbs/day.

M-GE-6: Paleontological Resources Evaluation, Monitoring, and Mitigation Program

Prior to construction, the SFPUC shall retain a qualified paleontologist to prepare a site-specific paleontological resources evaluation, monitoring, and mitigation plan. The plan shall identify the sensitivity for significant (well-preserved, uncommon, and/or identifiable) paleontological resources based on prior field surveys, museum records, or scientific or technical literature, and the potential depth of such resources in areas of project excavation greater than five feet. The plan shall specify the specific locations where construction monitoring would be required; preconstruction coordination procedures; worker environmental awareness training; unanticipated discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; and procedures for reporting the results of the monitoring program. The program shall be consistent with the Society for Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impact to Paleontological Resources (2010), Murphey's Best Practices in Mitigation Paleontology (2019), and the requirements of the designated repository for any fossils collected. Paleontological monitoring and/or fossil recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks, unless extended at the direction of the Environmental Review Officer (ERO). The plan shall include:

1. Worker training: The SFPUC shall ensure that all workers are trained on the contents of the Paleontological Resources Alert Sheet, as provided by the San Francisco Planning Department, to provide worker environmental awareness training regarding potential paleontological resources. The alert sheet also shall be prominently displayed at the construction site during ground disturbing activities. In addition, the SFPUC shall inform construction personnel of the immediate stop work procedures and contact information to be followed if bones or other potential fossils are unearthed at the project sites, and the laws and regulations protecting paleontological resources. The SFPUC shall retain documentation of the worker training and location of the informational handout display.

2. Inadvertent Discovery Procedures: In the event of the discovery of an unanticipated paleontological resource during construction, excavations within 25 feet of the find shall be

temporarily halted until the discovery is examined by a qualified paleontologist as recommended by the Society of Vertebrate Paleontology standards (SVP 2010) and Best Practices in Mitigation Paleontology (Murphey et al. 2019). The qualified paleontologist shall assess if the discovery is scientifically significant and present the findings of this assessment to the ERO and the SFPUC. Work within the sensitive area shall resume only when deemed appropriate by the qualified paleontologist in consultation with the ERO and the SFPUC. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a brief Paleontological Evaluation Letter. The Paleontological Evaluation Letter shall be submitted to the ERO and the SFPUC within 30 days of the consultation.

3. Monitoring: The paleontological monitoring program shall be conducted in accordance with the approved monitoring plan. The monitor shall inspect graded cut slopes, trench sidewalls, spoils piles, and other types of construction excavations for the presence of fossils. The goal of monitoring is to identify scientifically significant subsurface fossils as soon as they are unearthed in order to minimize damage to them and remove them and associated contextual data from the area of ground disturbance. Microfossil sampling, macrofossil recovery, and avoidance of fossils may all occur during any monitoring program. The paleontological monitor shall record observations and be authorized to collect samples as warranted for analysis in a paleontological laboratory.

4. Fossil Recovery Plan: If paleontological resources are discovered and determined to be scientifically significant, and a fossil recovery plan is required by the ERO, fossil recovery shall be conducted in accordance with an approved fossil recovery plan. Fossil recovery may involve simply collecting a fully exposed fossil from the ground surface, or may involve a systematic excavation, depending upon the size and complexity of the fossil discovery. Fossil excavations should be designed in such a way as to minimize construction delays while properly collecting the fossil and associated data according to professional paleontological standards. The project paleontological consultant, SFPUC, and ERO shall meet and discuss the scope of the fossil recovery plan and/or avoidance plan that shall be submitted to the ERO and the SFPUC for review and approval. The fossil recovery plan shall identify how the proposed fossil recovery program will preserve the significant information the paleontological resource is expected to contain or describe measures to avoid fossil locality. The plan shall specify procedures for the following elements: field methods; cataloguing and laboratory analysis; and curation of any recovered data having scientific research value into an appropriate repository.

5. Reporting: A paleontology report shall be submitted to the ERO and the SFPUC within 30 days (or as agreed) from the conclusion of ground disturbing activities. The report shall include the following, as applicable: dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility.

G. PUBLIC NOTICE AND COMMENT

On October 27, 2021, the Planning Department mailed a Notification of Project Receiving Environmental Review to neighborhood groups and interested parties. Overall, concerns and issues regarding potential environmental effects raised by the public in response to the notice were taken into consideration and incorporated in the environmental review as appropriate.

The Planning Department received comments expressing concerns about:

- Seismic hazards on the proposed underground electrical lines
- Conflicts and hazards associated with existing utilities in the public right-of-way
- Workforce availability and commute patterns
- Construction contingencies, liabilities, and equity impacts

Impacts related to seismic hazards and utility conflicts are addressed in sections E.13, Utilities and Service Systems and E.16, Geology and Soils. Impacts related to workforce availability and commute patterns are addressed in sections E.3, Population and Housing, and E.6, Transportation and Circulation. Concerns regarding financial considerations are outside the scope of environmental review.

H. DETERMINATION

On the basis of this Initial Study:

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

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

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

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

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

DATE January 5, 2022 _____

Lisa Gibson

Environmental Review Officer

for

Rich Hillis

Director of Planning

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Appendix A: PG&E Acquisition Project Targeted Assets

Appendix A
PG&E Acquisition Project Targeted Assets

This attachment provides an overview description of the assets the City proposes to purchase from PG&E. The description provided here is not intended to be the comprehensive list of assets to be purchased that would be included in a final purchase and sale agreement. Subject to due diligence and discussions with PG&E, some assets described here may not be included, and other assets may be added to a binding pricing and a final purchase and sale agreement.

Broadly, the City is proposing to purchase all of PG&E's distribution assets and substantially all of PG&E's transmission assets that are necessary for the City to provide safe and reliable retail electric service to all electricity customers in San Francisco.

These assets are currently anticipated to include:

- All of PG&E's distribution assets within San Francisco, including distribution-level substations, metering, customer-level interconnections, and related facilities.
- All of PG&E's 115 kV and 230 kV transmission assets within San Francisco, including substations, transmission lines, busses, transformers, and related facilities as needed for operational control.
- A portion of the Martin substation facilities or interconnections to the Martin substation as necessary to enable the City to control all power flows from Martin into San Francisco, and a lease or other agreement for a portion of the Martin substation in which City equipment is located, as needed for operational control.

The City's proposal also includes related assets, materials, records, and other items as required for safe and reliable operation of the assets above, including:

- Other systems and equipment such as meters and AMI systems, relays, SCADA, transformers, rolling stock, telecommunication and control center equipment, and spares; support systems, standards, distribution system model data, system maps and diagrams, records, and all similar items required to operate the assets.
- All of PG&E's reliability, safety, operating, maintenance and capital improvement records for the assets that are purchased.
- PG&E's operating and maintenance facilities (for communications, SCADA, security, control and emergency response), service yards, warehouses, and other facilities; all as located in San Francisco, and as necessary for safe and reliable operation and maintenance of the assets described above.
- PG&E's customer service, metering and billing records, including program and service agreements, dispute notices, outstanding complaints, and similar customer-related information.
- PG&E-owned fee property, easements, rights-of-way, lease agreements, permits, and other land-related agreements and documents necessary for safe and reliable operation and maintenance of the assets described above.
- PG&E-owned streetlights and similar unmetered facilities in San Francisco.

The City's proposal excludes all PG&E land and facilities related to its "General Office" operations in San Francisco, i.e., those facilities related to PG&E's san Francisco headquarters, and excludes all land and facilities related to PG&E's natural gas operations and services.

Appendix B: SFPUC Standard Construction Measures

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

OFFICE OF THE GENERAL MANAGER
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102-3220
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MEMORANDUM

TO: Michael Carlin, Juliet Ellis, Barbara Hale, Kathryn How, Tommy Moala, Steven Ritchie, Eric Sandler

DATE: July1, 2015

FROM: Harlan L. Kelly, Jr. General Manager

SUBJECT: SFPUC Standard Construction Measures

In 2006, the SFPUC General Manager (GM) directed SFPUC staff to incorporate the Standard Construction Measures (Measures) in all SFPUC projects via memorandum on August 16, 2006. The directive was updated and clarified on December 6, 2006. The GM updated and re-issued the Measures on February 7, 2007. The purpose then, as it is now, was for the SFPUC to adopt environmentally responsible practices to apply to all SFPUC projects.

This directive further updates the Measures. In particular, the protocol for cultural resources is included in detail in order to fully incorporate the San Francisco Planning Department's recently adopted approach to this resource area so that all SFPUC are constructed consistently with this protocol. The updated cultural resources protocols are set forth in full and are attached to this memorandum.

In addition to complying with all applicable local, State, and federal laws and regulations, these Measures are to be followed as a standard practice in the execution of every SFPUC project. While some of the Measures may not apply to a project, it is important to address each of the Measures either by implementing the Measure as described, explaining why it is not applicable to the particular project, or undertaking further investigation and developing a more detailed work plan to address the resource as provided in the resource-specific Measures. Some of the Measures are very broad and will be tailored to suit each project site and surrounding circumstances.

For projects that undergo full CEQA review (Mitigated Negative Declarations or Environmental Impact Reports) a n d / or receive resource agency permits (e.g., US Army Corps of Engineers, California Department of Fish and Wildlife, etc.), these Measures may be superseded and/or amplified with more detailed, project specific

mitigation measures or conditions stipulated in the project CEQA document and/or permits.

The Measures can be accessed at the following link:

S:\SFPUC Standard Construction Measures

The responsibility for implementation of the Standard Construction Measures rests with each Project Manager in Infrastructure and the SFPUC Enterprises. If you have any questions please contact Irina Torrey, Manager, Bureau of Environmental Management at 415-554-3232.

Please begin implementing these Measures immediately. Thank you for your cooperation.

SFPUC Standard Construction Measures

1. SEISMIC AND GEOTECHNICAL STUDIES: All projects will prepare a characterization of the soil types and potential for liquefaction, subsidence, landslide, fault displacement, and other geological hazards at the project site and will be engineered and designed as necessary to minimize risks to safety and reliability due to such hazards. As necessary, geotechnical investigations will be performed.

2. AIR QUALITY: All projects within San Francisco City (the City) limits will comply with the Construction Dust Control Ordinance. All projects outside the City will comply with applicable local and State dust control regulations. All projects within City limits will comply with the Clean Construction Ordinance. Projects outside City limits will comply with San Francisco or other applicable thresholds for health risks. All projects, both within and outside of City limits, will comply with either San Francisco or other applicable thresholds for construction criteria air pollutants.

To meet air quality thresholds, all projects (as necessary) will implement air quality controls to be tailored to the project, such as using high tier engines, Verified Diesel Emissions Control Strategies (VDECS) such as diesel particulate filters, customized construction schedules and procedures, and low emissions fuel.

3. WATER QUALITY: All projects will implement erosion and sedimentation controls to be tailored to the project site such as, fiber rolls and/or gravel bags around stormdrain inlets, installation of silt fences, and other such measures sufficient to prevent discharges of sediment and other pollutants to storm drains and all surface waterways, such as San Francisco Bay, the Pacific Ocean, water supply reservoirs, wetlands, swales, and streams. As required based on project location and size, a Stormwater Control Plan (in most areas of San Francisco) or a Stormwater Pollution Prevention Plan (SWPPP) (outside of San Francisco and in certain areas of San Francisco) will be prepared. If uncontaminated groundwater is encountered during excavation activities, it will be discharged in compliance with applicable water quality standards and discharge permit requirements.

4. TRAFFIC: All projects will implement traffic control measures sufficient to maintain traffic and pedestrian circulation on streets affected by construction of the project. Traffic control measures may include, but not be limited to, flaggers and/or construction warning signage of work ahead; scheduling truck trips during non-peak hours to the extent feasible; maintaining access to driveways, private roads, and off-street commercial loading facilities by using steel trench plates or other such method; and coordination with local emergency responders to maintain emergency access. For projects in San Francisco, the measures will also, at a minimum, be consistent with the requirements of San Francisco Municipal Transportation Agency (SFMTA)'s Blue Book. Any temporary rerouting of transit vehicles or relocation of transit facilities would be coordinated with the applicable transit agency, such as SFMTA Muni Operations in San Francisco. All Projects will obtain encroachment permits from the applicable jurisdiction for work in public roadways.

5. NOISE: All projects will comply with local noise ordinances regulating construction noise. The SFPUC shall undertake measures to minimize noise disruption to nearby neighbors and sensitive receptors during construction. These efforts could include using best available noise control technologies on equipment (i.e., mufflers, ducts, and acoustically attenuating shields),

locating stationary noise sources (i.e., pumps and generators) away from sensitive receptors, erecting temporary noise barriers, and other such measures.

6. HAZARDOUS MATERIALS: Where there is reason to believe that site soil or groundwater that will be disturbed may contain hazardous materials, the SFPUC shall undertake an assessment of the site in accordance with any applicable local requirements (e.g., Maher Ordinance) or using reasonable commercial standards (e.g., Phase I and Phase II assessments, as needed). If hazardous materials will be disturbed, the SFPUC shall prepare a plan and implement the plan for treating, containing or removing the hazardous materials in accordance with any applicable local, State and federal regulations so as to avoid any adverse exposure to the material during and after construction. In addition, any unidentified hazardous materials encountered during construction likewise will be characterized and appropriately treated, contained or removed to avoid any adverse exposure. Measures will also be implemented to prevent the release of hazardous materials used during construction, such as storing them pursuant to manufacturer recommendation, maintaining spill kits onsite, and containing any spills that occur to the extent safe and feasible followed by collection and disposal in accordance with applicable laws. SFPUC will report spills of reportable quantity to applicable agencies (e.g., the Governor's Office of Emergency Services).

7. BIOLOGICAL RESOURCES: All project sites and the immediately surrounding area will be screened to determine whether biological resources may be affected by construction. A qualified biologist will also carry out a survey of the project site, as appropriate, to note the general resources and identify whether habitat for special-status species and/or migratory birds, are present. In the event further investigation is necessary, the SFPUC will comply with all local, State, and federal requirements for surveys, analysis, and protection of biological resources (e.g., Migratory Bird Treaty Act, federal and State Endangered Species Acts, etc.). If necessary, measures will be implemented to protect biological resources, such as installing wildlife exclusion fencing, establishing work buffer zones, installing bird deterrents, monitoring by a qualified biologist, and other such measures. If tree removal is required, the SFPUC would comply with any applicable tree protection ordinance.

8. VISUAL AND AESTHETIC CONSIDERATIONS, PROJECT SITE: All project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from public view where possible. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon project completion, project sites on SFPUC-owned lands will be returned to their general pre-project condition, including re-grading of the site and re-vegetation or re-paving of disturbed areas to the extent this is consistent with SFPUC's Integrated Vegetation Management Policy. However, where encroachment has occurred on SFPUC-owned lands, the encroaching features may not be restored if inconsistent with the SFPUC policies applicable to management of its property. Project sites on non-SFPUC land will be restored to their general pre-project condition so that the owner may return them to their prior use, unless otherwise arranged with the property owner.

9. CULTURAL RESOURCES: All projects that will alter a building or structure, produce vibrations, or include soil disturbance will be screened to assess whether cultural resources are or may be present and could be affected, as detailed below.

Archeological Resources. No archeological review is required for a project that will not entail ground disturbance. Projects involving ground disturbance will undergo screening for

archeological sensitivity as described below and implement, as applicable, SFPUC's Standard Archeological Measures I (Discovery), II (Monitoring) and III (Testing/Data Recovery) per the Cultural Resources Attachments. Standard Construction Measure I will be implemented on all projects involving ground disturbance and Standard Archeological Measures II and III will be implemented based on the screening process described below for projects assessed as having the potential to encounter archeological sites and/or if an archeological discovery occurs during construction.

Projects involving ground disturbance will initially be screened to identify whether there is demonstrable evidence of prior ground disturbance in the project site to the maximum vertical and horizontal extent of the current project's planned disturbance. For projects where prior complete ground disturbance has occurred throughout areas of planned work, SFPUC will provide evidence of the previous disturbance in the Categorical Exemption application and no further archeological screening will be required.

For projects that are on previously undisturbed sites or where the depth/extent of prior ground disturbance cannot be documented, or where the planned project-related ground disturbance will extend beyond the depth/extent of prior ground disturbance, additional screening will be carried out as detailed below and shown on the attached flow chart titled "SFPUC Standard Construction Measure #9 Archeological Assessment Process". The additional screening will be conducted by the SFPUC's qualified archeologist (defined as meeting the Secretary of the Interior's Professional Qualifications Standards [36 CFR 61]) and, if a consultant, selected in consultation with the San Francisco Planning Department's Environmental Review Officer (ERO) and meeting criteria or specialization required for the resource type as identified by the ERO.

1) The SFPUC qualified archeologist will conduct an archival review for the project site, including review of Environmental Planning's (EP's) archeological GIS data and/or a records search of the California Historical Resources Information System (CHRIS) and other archival sources as appropriate. The qualified archeologist will also conduct an archeological field survey of the project site if, in the archeologist's judgment, this is warranted by site conditions. Based on the results, the archeologist will complete and submit to EP a Preliminary Archeological Checklist (PAC) (version dated 4/2015, to be amended in consultation with the ERO as needed). The PAC will include recommendations for the need for archeological testing, additional research and/or treatment measures consistent with Archeological Measures I, II, and III, to be implemented by the project to protect and/or treat significant archeological resources identified as being present within the site and potentially affected by the project.

2) The EP Archeologist (for projects within the City) or the ERO's archeological designee (for projects outside the City) will then conduct a Preliminary Archeological Review (PAR) of the PAC and other sources as warranted; concur with the PAC recommendations; and/or amend the PAC in consultation with the SFPUC archeologist or archeological consultant to require additional research, reports, or treatment measures as warranted based on his/her professional opinion.

3) The SFPUC shall implement the PAC/PAR recommendations prior to and/or during project construction consistent with Standard Archeological Measures I, II, and III, and

shall consult with the EP Archeologist in selecting an archeological consultant, as needed, to implement these measures.

4) Ground disturbing activities in archeologically sensitive areas, as identified through the above screening, will not begin until required preconstruction archeological measures of the PAC/PAR (e.g., preparation of an Archeological Monitoring Plan, Archeological Treatment Plan, and/or an Archeological Research Design and Data Recovery Plan) have been implemented.

Historic (Built Environment) Resources. For projects within the City that include activities with the potential for direct or indirect effects to historic buildings or structures, initial CEQA screening will include a review, for the project footprint and up to one parcel surrounding the footprint of CCSF's online planning map, all relevant survey data, preservation address files, and other pertinent sources for previously-identified, historically significant buildings and building and structures more than 45 years old that have not been previously evaluated. For projects outside of the City, initial CEQA screening will include a records search of EP's CCSF historical resources data, CHRIS, and other pertinent sources for historically significant or potentially significant buildings and structures older than 45 years.

For projects that would modify an existing building or structure that has been determined by EP as being a significant historical resource (i.e., appears eligible to qualify for the CRHR), or that would introduce new aboveground facilities in the vicinity of a significant historical resource, or that would affect previously unevaluated buildings or structures more than 45 years old, the SFPUC will retain a qualified architectural historian (defined as meeting the Secretary of the Interior's Professional Qualification standards and, if a consultant, also selected in consultation with the ERO) to conduct a historical resource evaluation (HRE). SFPUC will submit the project description and the HRE to the CCSF Planning Department Preservation Planner or to the ERO's-designated qualified architectural historian to assess potential effects. Where the potential for the project to have adverse effects on historic buildings or structures is identified, the CCSF Planning Department Preservation Planner or the ERO's designee will consult with SFPUC to determine if the project can be conducted as planned or if the project design can be revised to avoid the significant impact, and will comply with applicable procedures set forth in Historic Architectural Resource Measure I. If these options are not feasible, the project will need to undergo further review with EP and mitigation may be required. If so, the project would not qualify for a Categorical Exemption from CEQA review.

Where construction will take place in proximity to a building or structure identified as a significant historical resource but would not otherwise directly affect it, the SFPUC will implement protective measures, such as but not limited to, the erection of temporary construction barriers to ensure that inadvertent impacts to such buildings or structures are avoided.

CULTURAL RESOURCES ATTACHMENTS

Flow Chart: SFPUC Standard Construction Measure #9 Archeological Assessment Process

SFPUC Archeological Measure I (Archeological Discovery)

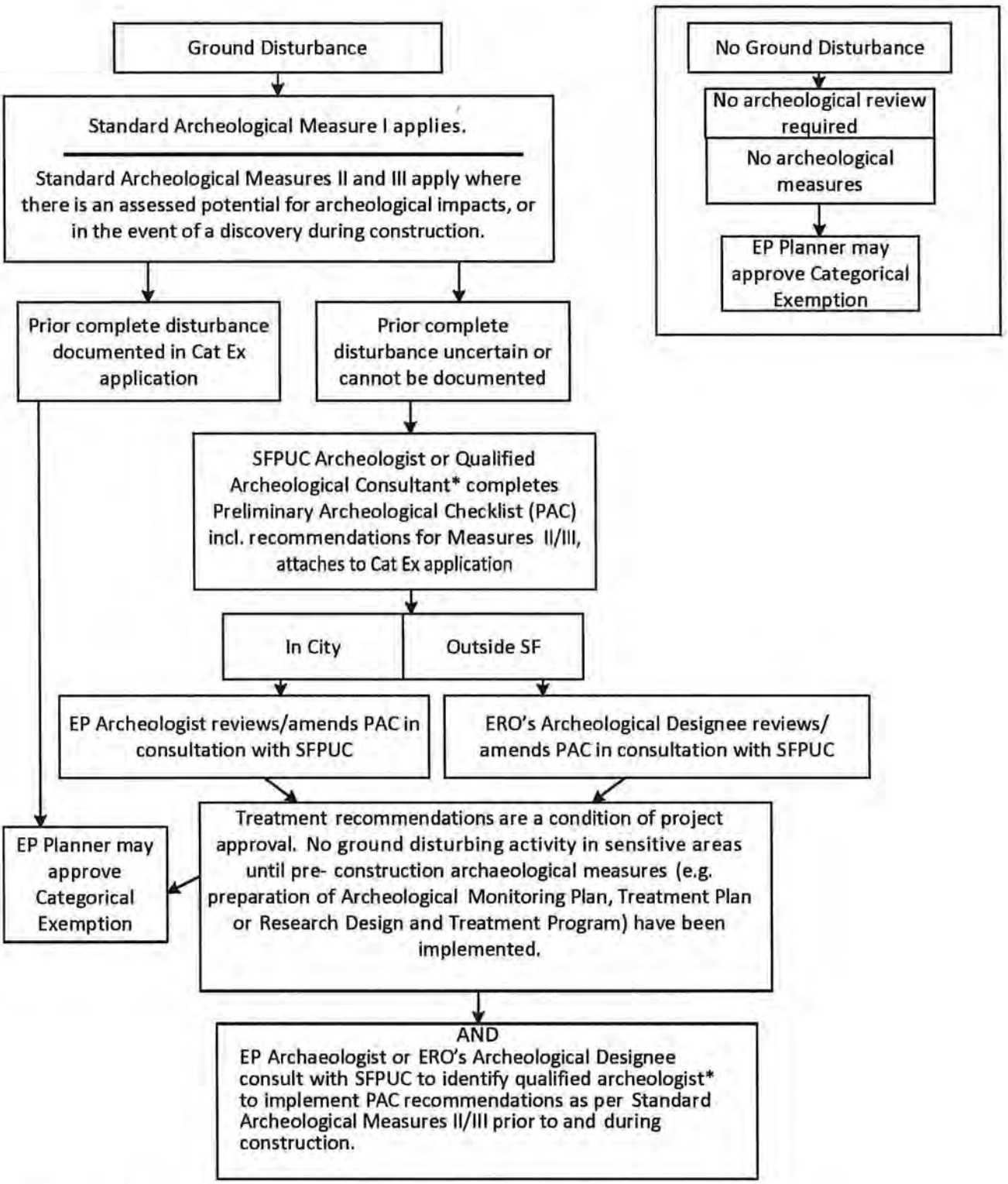
SFPUC Archeological Measure II (Archeological Monitoring)

SFPUC Archeological Measure III (Archeological Testing/Data Recovery)

Historic Architectural Resource Measure

SFPUC Preliminary Archeological Checklist (PAC)

Flow Chart: SFPUC Standard Construction Measure #9 Archeological Assessment Process



* Archeologist or archeological consultant who meets the Secretary of the Interior's Professional Qualifications Standards (36 CFR 61) as defined in Standard Archeological Measure I.

SAN FRANCISCO
PLANNING DEPARTMENT

5/28/2015. Subject to revision

SFPUC ARCHEOLOGICAL MEASURE I (Archeological Discovery)

The following requirements are applicable to:

- All projects that will include soil (ground) disturbance, and
- Any discovery of a potential historical resource or of human remains, with or without an archeological monitor present.

Prior to ground disturbing activities:

A. **Alert Sheet**. The SFPUC shall, prior to any soils disturbing activities, distribute the Planning Department archeological resource "ALERT" sheet to each project contractor or vendor involved in project-related soils disturbing activities; ensure that each contractor circulates it to all field personnel; and provide the Environmental Review Officer (ERO) with a signed affidavit from each contractor confirming distribution to all field personnel.

Upon making a discovery:

B. **Work Suspension.** Should a potential archeological resource be encountered during project soils disturbing activity, with or without an archeological monitor present, the project Head Foreman shall immediately suspend soils disturbing activities within 50 feet (15 meters) of the discovery, protect the find from further disturbance, and notify the SFPUC Project Manager (PM) and/or Environmental Project Manager (EPM), who shall immediately notify the ERO for further consultation.

C. **Qualified Archeologist.** All archeological work conducted under this measure shall be performed by an archeologist who meets the Secretary of the Interior's Professional Qualifications Standards (36-CFR 61); consultants will be selected in consultation with the ERO and meeting the criteria or specialization required for the resource type as identified by the ERO in a manner consistent with SFPUC's on-call contracting requirements.

D. **Assessment and Additional Measures.** If the ERO determines that the discovery is a potential archeological/historical resource, the archeologist, in consultation with the ERO, shall document the find, evaluate based on available information whether it qualifies as a significant historical resource under the CEQA criteria, and provide recommendations for additional treatment as warranted. The ERO will consult with SFPUC and the qualified archeologist on these recommendations and may require implementation of additional measures as set forth below in Archeological Measures II and III, such as preparation and implementation of an Archeological Monitoring Plan, an Archeological Testing Plan, and/or an Archeological Data Recovery Plan, and including associated research designs, descendant group consultation, other reporting, curation, and public interpretation of results.

E. **Report Reviews**. All plans and reports prepared by an archeological consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment with a copy to the SFPUC and shall be considered draft reports subject to revision until final approval by the ERO.

F. **Draft and Final Archeological Resources Reports.** For projects in which a significant archeological resource is encountered and treated during project implementation (see Archeological Measures II and III), the archeological consultant

shall submit a draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken, research questions addressed, and research results. Information that may put at risk any archeological resource shall be provided in a separate, removable insert within the draft final report.

Once approved by the ERO, copies of the FARR shall be distributed as follows: two copies to the applicable California Historic Information System Information Center (CHRIS), one copy to each descendant group involved in the project, and documentation to the San Francisco Planning Department of transmittal of the above copies. In addition, the Planning Department shall be provided one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR, which shall include copies of any formal site recordation forms (CA DPR 523 series) and/or National Register of Historic Places/California Register of Historical Resources nominations.

G. **Other Reports.** In instances of high public interest or interpretive value, the ERO may require different or additional final report content, format, and distribution than that presented above.

H. **Human Remains, Associated or Unassociated Funerary Objects.** SFPUC shall ensure that human remains and associated or unassociated funerary objects discovered during any soils disturbing activity are treated in compliance with applicable State and federal laws. In the event of the discovery of potential human remains, the construction contractor shall ensure that construction activity within 50 feet of the find is halted and the SFPUC PM, EPM, ERO, and the County Coroner are notified immediately. If the Coroner determines that the remains are of Native American origin, he/she will notify the California State Native American Heritage Commission. Subsequent consultation on and treatment of the remains will be conducted consistent with Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(d), in consultation with the ERO.

I. **Consultation with Descendant Communities.** Consistent with AB 52 requirements, if requested, the SFPUC shall provide opportunities for Native American descendant groups to provide input during project planning for projects that may affect potential Tribal Cultural Resources. In addition, on discovery during construction of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other descendant group, an appropriate representative of the descendant group shall be contacted by SFPUC at the direction of the ERO. SFPUC will offer this representative the opportunity to monitor archeological field investigations of the site and to consult with the ERO regarding the appropriate treatment and, if applicable, interpretation of the site and the recovered materials.

J. **Construction Delays**. Archeological monitoring and/or data recovery programs required by this measure may suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if this is the only feasible means to reduce potential effects on a significant archeological find to a less-than-significant level.

SFPUC ARCHEOLOGICAL MEASURE II (Archeological Monitoring)

A. **Archeological Monitoring Plan (AMP).** Where an archeological field investigation to identify expected buried or submerged resources cannot reasonably be carried out during project planning/ environmental review (for example, where definitive determination would require extensive street opening prior to construction), prior to any project-related soils-disturbing activities the qualified archeologist identified under Archeological Measure I.C. will consult with SFPUC and the ERO to develop an Archeological Monitoring Plan (AMP). The AMP which will be implemented in conjunction with soil-disturbing activities during construction. Preparation and implementation of an AMP also may be required based on the results of pre-construction archeological testing or upon a discovery during construction.

   The AMP shall include the following elements, at minimum:

   - Historical context and research design for assessment of resource types likely to be encountered;
   - Project activities to be archeologically monitored and intensity of monitoring of each type and location of project construction activity; and
   - Procedures for the documentation, significance and integrity assessment, treatment, interpretation and reporting of the types of resources likely to be encountered.

B. **Reporting.** Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO at the end of construction (See Archeological Measure I.E [Report Reviews] and I.F. [Final Archeological Research Report]).

C. **Monitoring Authorities**

   - The archeological monitor will have the authority to halt construction activity at the location of a suspected resource for inspection, documentation, and assessment of the need for further measures as set forth in Archeological Measure III.
   - The Archeological Monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis.
   - The Archeological Monitor(s) shall be present on the project site according to a schedule identified in the AMP, subject to modification upon ERO concurrence, based on findings.

D. **Testing/Data Recovery.** In the event of a discovery during construction, if the ERO and archeological consultant determine that the discovery is a significant resource (that is, a resource that meets the eligibility criteria of the California Register of Historic Resources or qualifies as a unique archeological resource) that will be adversely affected (that is, where the project would result in loss of data potential) or that additional investigation is required to make this determination, all applicable elements of Archeological Measure III (Archeological Testing/Data Recovery) also will be implemented.

SFPUC ARCHEOLOGICAL MEASURE III (Testing / Data Recovery)

The following provisions apply prior to or during construction when a significant archaeological resource (as defined in Measure II.D) or an archeological resource of undetermined significance is expected to be present in the work area and the ERO, in consultation with the qualified archeologist, determines that an archeological field investigation is needed to determine: a) the presence of an archeological resource, b) whether it retains depositional integrity, and c) whether it qualifies as a legally significant resource under CEQA criteria. All archeological work under this Measure will be carried out by a qualified archeologist as identified in Archeological Measure I.C. Per Archeological Measure I.J, implementation of this measure shall not exceed four weeks except at the direction of the ERO and only if this is the only feasible means to reduce potential effects on a significant archeological find to a less-than-significant level.

A. **Archeological Testing Program.** If an archeological investigation is required in order to verify resource location and/ or assess the significance of the resource, the archeological consultant shall consult with the ERO to prepare and implement an Archeological Testing Plan (ATP) that identifies:

   - Key research questions and associated data needs,
   - Testing/ sampling methods, and
   - Testing locations.

   Results of testing shall be presented to ERO in a written report following Measure I.E. If, based on the archeological testing program, the archeological consultant finds and the ERO concurs that significant archeological resources may be present, Measures III.B and/or III.C below will be implemented.

B. **Treatment.** If the project could adversely affect a significant (CRHR-eligible) archeological resource, preservation in place is the preferred manner of mitigating impacts, as detailed in CEQA Guidelines 15126.6(b) (3)(a) and (b).

   If preservation in place is determined to be infeasible, the SFPUC at its discretion shall either:

   - Re-design the proposed project so as to reduce the adverse effect to a less- than-significant level through preservation in place or other feasible measures; and/or
   - For a resource important for its association with an important event or person, or which is of demonstrable public interest for both its scientific and historical values (e.g., a submerged ship), and where feasible, preserve the resource in place with appropriate documentation; or, if not feasible to preserve in place, systematically document and/or recover for interpretive use, at the discretion of the ERO, and/or;

   For an archeological resource significant primarily for its data potential, design and implement an archeological data recovery program, as detailed under Measure III.D, below.

C. **Archeological Data Recovery Plan (ADRP).** For resources for which the elected treatment is archeological data recovery, the archeological consultant, in consultation with the ERO, shall prepare and implement an ADRP. It will identify how the significant information the archeological resource is expected to contain will be recovered and

preserved. Data recovery results will be reported in the FARR, as detailed in Measure I.F. The ADRP shall include the following elements:

- Historic context and research design
- Field methods and procedures, including sampling strategy
- Archeological monitoring recommendations for ongoing construction
- Cataloguing and laboratory analysis
- Discard, deaccession, and curation policy
- Interpretive program
- Security measures

HISTORIC ARCHITECTURAL RESOURCE MEASURE

A. **Qualified Architectural Historian.** When a building or structure that has been determined to be an historical resource is identified within a project's area of potential effects, the SFPUC will retain a qualified architectural historian (defined as meeting the Secretary of the Interior's Professional Qualification standards and, if a consultant, selected in consultation with the ERO) to conduct a historical resource evaluation (HRE).

B. **Effects Assessment**. The SFPUC will submit the project description and the HRE to CCSF Planning Department Preservation Planner or to the ERO's-designated qualified architectural historian to assess potential effects. If a potential for the project to have adverse effects on historic buildings or structures is identified, the CCSF Planning Department Preservation Planner or the ERO's architectural historian designee will consult with SFPUC to determine if the project can be implemented as planned or if the project design can be revised to avoid the significant impact. If these options are not feasible, the project will need to undergo further review with EP and mitigation may be required. If so, the project may not qualify for a Categorical Exemption from CEQA review.

C. **Potential Vibration Effects.**

1. Where construction takes place in proximity to a building or structure identified as a significant historical resource but would not otherwise directly affect it, the SFPUC will implement protective measures, such as, but not limited to, the erection of temporary construction barriers to ensure that inadvertent impacts to such structures are avoided.

2. For projects that will use vibratory equipment generating vibration in excess of 0.2 inches per second, peak particle velocity adjacent to historic buildings susceptible to vibration, the SFPUC will engage a qualified historic architect or historic preservation professional to document and photograph the pre-construction condition of the building and prepare a plan for monitoring the building during construction. The monitoring plan will be submitted to and approved by CCSF Planning Department Preservation Planner or the ERO's architectural historian designee prior to the beginning of construction and will be implemented during construction. The monitoring plan will identify how often monitoring will occur, who will undertake the monitoring, reporting requirements on vibration levels, reporting requirements on damage to adjacent historical resources during construction, reporting procedures to follow if such damage occurs, and the scope of the preconstruction survey and post-construction conditions assessment.

3. If any damage to a historic building or structure occurs, the SFPUC will modify activities to minimize further vibration.
4. If any damage occurs, the building will be repaired following the Secretary of the Interior's Standards for the Treatment of Historic Properties under the guidance of a qualified historic architect or historic preservation professional.

D. **Minor Alteration of Historic Buildings or Structures.**

1. If a project involves minor alterations and/or rehabilitation to a building that qualifies as an historical resource, the proposed design will be reviewed by a qualified historic preservation professional in consultation with the CCSF Planning Department Preservation Staff or the ERO's architectural historian, who shall identify modifications to project design, as needed, to avoid or minimize effects to the historic integrity of the historical resource. The assessment also will provide direction on ensuring compliance with Secretary of the Interior's Standards and Guidelines.
2. To qualify for a Categorical Exemption, the project must be modified as identified in the HRE and all work must be conducted in compliance with Secretary of the Interior's Standards under the guidance of an architectural historian such that historical integrity of the building or structure would not be compromised.

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San Francisco Public Utilities Commission Preliminary Archeological Checklist (PAC)

A. PROJECT INFORMATION:

Date: _____ **SFPUC Archeological Reviewer:** _____

Project name: _____ **Case No:** _____

Application type: ☐ EE ☐ CatEx

☐ In City ☐ Outside of City

Project address: _____

APN/Cross streets: _____ OR **City/ County:** _____

EP Planner: _____ **EP Archeological Reviewer designee:** _____

Consultant Archeologist name/firm (if applicable): _____

1. PROJECT DESCRIPTION: (include description of construction methods, all potentially ground-disturbing activities including parking, staging, equipment and spoils storage, temporary and permanent work areas, utility lines)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

2. POTENTIAL GROUND DISTURBANCE

Yes	No	Project Component
☐	☐	Excavation (basement, elevator, utilities, seismic retrofit, remediation, underground vaults, septic tank system, culverts, etc.) Maximum depth: _____

2. POTENTIAL GROUND DISTURBANCE (cont.)

Yes	No	Project Component
☐	☐	Pipeline replacement or installation (specify cut and cover, directional drilling, pipe bursting, etc):
☐	☐	Tunnels, transport storage boxes
☐	☐	Bore pits, test pits
☐	☐	Shallow Building Foundation (Mat, Spread Footings, etc.) Depth:
☐	☐	Piles, piers, micropiles, pilings, piling replacement
☐	☐	Grading, scraping
☐	☐	Demolition
☐	☐	Construction staging, spoils on unpaved area, fill
☐	☐	Road construction
☐	☐	Geotechnical trenching (dimensions)_____
☐	☐	New rip rap
☐	☐	Wharf or seawall modification
☐	☐	Other (specify):

Anticipated maximum extent of project ground disturbance:
Vertical_____Horizontal_____

APE Map Attached: Y N

3. PREVIOUS SOILS DISTURBANCE AT PROJECT SITE:
Has the project site been previously disturbed by any of the following?

Yes	No	**Component of disturbance**
☐	☐	Existing Basement Depth:_____ Area:_____
☐	☐	Existing Foundation (footings, perimeter, piles, micropiles, etc.) Depth:
☐	☐	Site remediation/UST installation or removal, other excavation. Depth:
☐	☐	Site Grading
☐	☐	Demolition
☐	☐	Dredging
☐	☐	Piling installation (width and depth of trench):_____
☐	☐	Riprap
☐	☐	Seawall construction
☐	☐	Other (specify):

4. Has the entire project area previously been disturbed to the maximum depth and extent of proposed project disturbance? Y N
(Attach documentary evidence such as plans and profiles of prior trenching, utility street occupancy, historic photos, specifications from prior projects, etc.)
List attachments provided:_____
_____

☐ **Complete prior disturbance adequately documented; stop here, no further archeological assessment is required.** Assessed by: _____

☐ **Prior ground disturbance is unknown or cannot be adequately documented; continue to B.**

SFPUC Preliminary Archeological Checklist

B. ARCHIVAL AND ARCHEOLOGICAL DATA ASSESSMENT

1. ARCHIVAL AND DATA REVIEW

Dates of review:_____

Resources reviewed:

- ☐ Maher zone maps. Dates/ origin/ depth of fill if known_____
- ☐ Geotechnical data for project site and vicinity (Cite report_____)
- ☐ EP Archeological GIS maps (all layers or specify applicable layers)_____

_____

- ☐ Sanborn Insurance maps (1887-93, 1899-1900)
- ☐ U.S. Coast Survey maps (1853, 1857, 1869)
- ☐ Information Center archeological records search (attach request and response)
- ☐ USFS/ BLM/ NPS archeological files (upcountry projects)
- ☐ NAHC Sacred Lands File
- ☐ Native American/ Ethnic group consultation
- ☐ Other:

Findings:

- ☐ No previously documented resources present
- ☐ Archival research suggests resources are or may be present within or immediately adjacent to the project area where soils disturbance will occur

2. ARCHEOLOGICAL FIELD INVENTORY

- ☐ Not warranted; no exposed ground surface in project area
- ☐ Results negative
- ☐ Results positive
- ☐ Survey results inconclusive

Archeologist/ Firm_____ Date of Survey_____

Attach Archeological Survey Report/Memo; may combine with results of archival review.

3. SUMMARY OF RESULTS OF PROJECT ASSESSMENT

Site History/Formation:

_____

_____

_____

_____

_____

_____

Recorded/documented archeological sites/ investigations on/in the vicinity of the project site:

_____

_____

_____

C. SFPUC CONCLUSIONS AND RECOMMENDATIONS

1. NO EFFECTS TO ARCHEOLOGICAL RESOURCES EXPECTED:

- ☐ Project effects limited to previously-disturbed soils.
- ☐ Project effects limited to culturally sterile soils.
- ☐ Based on assessment under B, above, no potentially CEQA-significant archeological

resources are expected within project area affected soils.

2. AVOIDANCE AND TREATMENT MEASURES NECESSARY TO AVOID AN ADVERSE EFFECT TO SIGNIFICANT ARCHEOLOGICAL RESOURCES:

☐ Archeological Measure I, Discovery: low potential to adversely affect archeological resources; may be avoided by implementation of SFPUC Standard Archeological Measure I (Discovery during Construction), with implementation of Standard Archeological Measures II (Monitoring) and/or III (Testing/Data Recovery) in the event of a discovery during construction.

☐ Archeological Measure II, Monitoring: some potential for the project to adversely affect archeological resources; may be avoided by implementation of SFPUC Standard Archeological Measure II (Archeological Monitoring) during construction.

☐ Archaeological Measure III, Testing/Data Recovery: potential for the project to adversely affect archeological resources; may be avoided by implementation of SFPUC Standard Archeological Measure III (Archeological Testing/Data Recovery)

Implementation Required:

☐ prior to or ☐ during construction

☐ CEQA evaluation of the project requires preparation and implementation of an archeological research design and treatment plan (ARDTP) by a qualified archeological consultant. See attached scope of work for the ARDTP.

D. EP ARCHEOLOGIST/ ERO-ARCHEOLOGICAL DESIGNEE REVIEW

☐ I concur with the conclusions and recommendations provided in Section C, above.

☐ Additional/ alternative measures recommended (detail):

_____

_____

_____

_____

_____

_____

_____

☐ Meeting requested

Appendix C: Supplemental Data Memo and Air Quality Technical Report

RAMBOLL

ENVIRONMENT
& HEALTH

SUPPLEMENTAL DATA MEMO

Date: April 15, 2021

To: **Julie Moore, San Francisco Planning Department**
Sue Chau, SFPUC

From: Michael Keinath, Michael Howley

Subject: SUPPLEMENTAL DATA MEMO FOR PACIFIC GAS & ELECTRIC POWER ASSET ACQUISITION PROJECT, SAN FRNCISCO, CALIFORNIA

Ramboll US Corporation (Ramboll) conducted California Environmental Quality Act (CEQA) analyses of criteria air pollutants (CAPs) and precursors, as well as a health risk assessment (HRA) based on exposure to toxic air contaminants (TACs), from the proposed Project. San Francisco Public Utilities Commission (SFPUC) proposes to install a new duct bank and vaults on city streets, install equipment at existing substations, and separate the existing distribution lines along the City of San Francisco and San Mateo County border.

At the request of the San Francisco Planning Department, Ramboll has prepared this memo to document the assumptions from project data that Ramboll relied on in conducting the air quality analysis. These assumptions include an explanation of the assumed construction schedule, derivation of soil hauling amounts, and derivation of material delivery trips.

Construction Schedule

As discussed in the Air Quality Technical Report ("AQTR", see Attachment A), the Project consists of three main aspects:

- Martin Substation construction
- Potrero Substation construction
- Distribution line, duct banks, connections and disconnections (abbreviated as "DB/C/D")

Construction activity at the Martin and Potrero substations would consist of multiple sequential subphases that would take a combined 6-9 months at each substation. Ramboll assumed that construction activity at these substations could occur simultaneously in the first year of construction.

Independent of the substation work, DB/C/D activity would occur across the southern portion of the City and northern portion of Daly City and Brisbane, including within the Martin and Potrero substations. The DB/C/D work would consist

primarily of digging long, narrow trenches, installing equipment and conduit, then covering the trench. According to SFPUC, one work crew could complete approximately 40 feet of DB/C/D work per day. At this rate, a work crew would take 17.5 work days to cover an entire 700 foot city block, or 3.5 weeks.

As shown in AQTR Table 1, at this working rate it would take a single work crew of nine workers 1,831 work days to complete all DB/C/D work. If two crews were working in separate locations simultaneously, the total duration would be 915.5 days. In the AQTR, Ramboll assumed that the Martin and Potrero substation construction would occur during the first year, or 260 working days, of this period.

Per SFPUC, the number of available work crews may vary, and thus the actual construction duration may be less than a total of 1,831 days. The minimum duration would be 260 working days, assuming at least 7 work crews completed DB/C/D work for the 260-day duration of the substation construction.

Two schedule scenarios were analysed: a “Typical Construction Scenario” and an “Accelerated Construction Scenario.” Under the “Typical” Scenario, up to five crews would work concurrently in year one (inclusive of the two crews at the Martin and Potrero substations), for a maximum of 45 workers. After year one, up to four crews would complete the remaining DB/C/D work; the total construction under this scenario would be completed in two years[1]. Under the “Accelerated” Scenario, all construction would be completed in one year, with up to 15 total work crews (one crew each for the Martin and Potrero substations[2] and 7 to 13 crews for the rest of the work)[3], or a maximum of 135 workers.

Truck Trip Calculations

As part of the data gathering process for the AQTR analysis, SFPUC provided Ramboll with estimates of soil excavation activity and equipment installation requirements for each aspect of construction. From this data, Ramboll extracted the total number of soil haul trucks and equipment delivery trucks associated with each construction activity.

The underlying assumptions and calculations for this data are presented in the attached tables. Table 1 presents the amount of soil excavation and haul trucks associated with all substation construction and each area of DB/C/D work at the level of detail originally provided by SFPUC. Table 2 presents similar data for truck trips associated with delivery of concrete, electrical vaults, and conduit. Table 3 summarizes this data in a similar format presented in AQTR Table 3. Table 4 presents average daily truck trips for each construction area.

Attachments:

Tables

Attachment 1: Air Quality Technical Report

[1] The typical construction scenario assumes a 50-mile hauling distance for the length of the import haul truck trips.

[2] This number of crews assumes a 20-mile hauling distance (for import truck trips).

[3] Up to 7 crews constructing the distribution line assumes a 50-mile hauling distance. Up to 13 crews constructing the distribution line assumes a 20-mile hauling distance.

TABLES

Table 1
Soil Excavation Amounts
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Location	Sublocation	Description	Count	Length (ft)	Width (ft)	Depth (ft)	Total Excavation (cy)	Percent of Soil Removed	Total Soil Exported (cy)	Total Soil Imported (cy)
Martin Substation	Equipment	Bus Tie Breakers	2	10	10	4	30	100%	2,507	0
		Control Houses	2	20	50	8	593	100%		
		30MVA Transformers	2	40	60	10	1,778	100%		
		115kV Breakers	5	10	12	3	67	100%		
		12kV Breakers	3	10	12	3	40	100%		
Potrero Substation	Equipment	STATCOM Units	3	50	20	6	667	100%	724	0
		STATCOM Vaults	2	7	11	10	57	100%		
Connections / Disconnections (duct bank, excl. substations)	Martin Station to Existing Connection at Holloway Ave & Beverly St.	Duct Bank	--	25,819.2	6.5	5.58	34,705	50%	29,530	29,530
		Power Vaults	194	11.5	7.5	7	4,338	50%		
		Communications Vaults	65	6.7	5.2	4	336	50%		
	Olympic Club Area	Duct Bank	--	6,820	4.5	5	5,683	50%		
		Power Vaults	18	11.5	7.5	7	403	50%		
	Ingleside Heights Area	Duct Bank	--	1,140	4.5	5	950	50%		
		Power Vaults	3	11.5	7.5	7	68	50%		
	Outer Mission, Crocker-Amazon	Duct Bank	--	3,232	4.5	5	2,693	50%		
		Power Vaults	9	11.5	7.5	7	202	50%		
	Crocker-Amazon, Sunnydale	Duct Bank	--	6,686	4.5	5	5,572	50%		
		Power Vaults	17	11.5	7.5	7	381	50%		
	Bayshore Heights	Duct Bank	--	4,180	4.5	5	3,483	50%		
		Power Vaults	11	11.5	7.5	7	246	50%		
Connections / Disconnections (individual locations, excl. substations)	Olympic Club Area	450 sq ft + 11.5' x 7.5' areas	1	536.25	1	5	99	50%	1,688	1,688
	Ingleside Heights Area		6	536.25	1	5	596	50%		
	Outer Mission, Crocker-Amazon		8	536.25	1	5	794	50%		
	Crocker-Amazon, Sunnydale		14	536.25	1	5	1,390	50%		
	Bayshore Heights		5	536.25	1	5	497	50%		
Connections / Disconnections (Martin Substation)	Duct Bank and Vaults	115/60 kV Xfm Connection Cable	--	880	3	6	587	100%	17,556	17,556
		115k/12kV Xfm Connection Cable	--	1,560	3	6	1,040	100%		
		Cables for PG&E	--	9,360	3	7	7,280	100%		
		Cables for the City	--	9,360	3	7	7,280	100%		
		Vaults for PG&E	24	11	7	10	684	100%		
		Vaults for the City	24	11	7	10	684	100%		
Connections / Disconnections (Potrero Substation)	Duct Bank	STATCOM Conduits	--	500	3	7	389	100%	389	389
Connections / Disconnections (Plymouth Substation)	Duct Bank	See Note 2	--	196	--	--	242	50%	121	121
Connections / Disconnections (Randolph Substation)	Duct Bank	See Note 2	--	112	--	--	138	50%	69	69

Notes:
1. All values provided by SFPUC unless otherwise noted.
2. Excavation volumes for Plymouth and Randolph substations estimated scaling the total excavation volume from "Connections/Disconnections (duct bank, excl. substations)" by the amount of linear feet of duct bank length. This conservatively includes excavation associated with power vaults and communication vaults.

Abbreviations:
cy - cubic yards
ft - feet

Table 2
Concrete, Vault, and Cable Equipment Deliveries
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Location	Sublocation	Description	Count	Length (ft)	Width (ft)	Depth (ft)	Total Excavation (cy)	Amount per Truck	Units	Vendor Trucks	Total Vendor Trucks
Martin Substation	Equipment	Control Houses	2	20	50	8	593	8	cubic yards	74	358
		30MVA Trtansformers	2	40	60	10	1,778	8	cubic yards	222	
		115kV Breakers	5	10	12	3	67	8	cubic yards	8	
		12kV Breakers	3	10	12	3	40	8	cubic yards	5	
		Vaults for PG&E	24	11	--	--	--	1	vaults	24	
		Vaults for the City	24	11	--	--	--	1	vaults	24	
Potrero Substation	Equipment	STATCOM Units	3	50	20	6	667	8	cubic yards	83	85
		STATCOM Vaults	2	--	--	--	--	1	vaults	2	
Connections / Disconnections (duct bank, excl. substations)	Martin Station to Existing Connection at Holloway Ave & Beverly St.	Duct Bank (Martin to Randolph)	12	23,232	--	--	--	8000	feet cable	35	291
		Duct Bank (Sargent to Lunado)	4	2,587.2	--	--	--	8000	feet cable	1.3	
		Power Vaults	194	--	--	--	--	1	vaults	194	
	Olympic Club Area	Duct Bank	1	6,820	--	--	--	8000	feet cable	0.9	
		Power Vaults	18	--	--	--	--	1	vaults	18	
	Ingleside Heights Area	Duct Bank	1	1,140	--	--	--	8000	feet cable	0.1	
		Power Vaults	3	--	--	--	--	1	vaults	3	
	Outer Mission, Crocker-Amazon	Duct Bank	1	3,232	--	--	--	8000	feet cable	0.4	
		Power Vaults	9	--	--	--	--	1	vaults	9	
	Crocker-Amazon, Sunnydale	Duct Bank	1	6,686	--	--	--	8000	feet cable	0.8	
		Power Vaults	17	--	--	--	--	1	vaults	17	
	Bayshore Heights	Duct Bank	1	4,180	--	--	--	8000	feet cable	0.5	
		Power Vaults	11	--	--	--	--	1	vaults	11	
Connections / Disconnections (individual locations, excl. substations)	Olympic Club Area	Individual connection sites, assumed 100 ft cable per site	1	100	--	--	--	8000	feet cable	0.01	0.43
	Ingleside Heights Area		6	100	--	--	--	8000	feet cable	0.08	
	Outer Mission, Crocker-Amazon		8	100	--	--	--	8000	feet cable	0.10	
	Crocker-Amazon, Sunnydale		14	100	--	--	--	8000	feet cable	0.18	
	Bayshore Heights		5	100	--	--	--	8000	feet cable	0.06	
Connections / Disconnections (Martin Substation)	Duct Bank and Vaults	115/60 kV Xfm Connection Cable	1	880	--	--	--	8000	feet cable	0.11	2.6
		115k/12kV Xfm Connection Cable	1	1,560	--	--	--	8000	feet cable	0.20	
		Cables for PG&E	1	9,360	--	--	--	8000	feet cable	1.17	
		Cables for the City	1	9,360	--	--	--	8000	feet cable	1.17	
Connections / Disconnections (Plymouth Substation)	Duct Bank	See Note 2	--	196	--	--	--	--	--	1.19	1.19
Connections / Disconnections (Randolph Substation)	Duct Bank	See Note 2	--	112	--	--	--	--	--	0.68	0.68

Notes:
1. All values provided by SFPUC unless otherwise noted.
2. Vendor truck counts for Plymouth and Randolph substations estimated by scaling the total vendor trips from "Connections/Disconnections (duct bank, excl. substations)" by the amount of linear feet of duct bank length. This conservatively includes trucks associated with power vaults.

Abbreviations:
cy - cubic yards
ft - feet

Table 3
Construction Truck Trip Summary
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Location	Import/Export	Volume Exported/Imported (cy)	Haul Truck Volume (cy)	Total Number of Hauling Trucks	Haul Truck On-Way Trip Length (mi)	Total Number of Vendor Trucks
Martin Substation	Export	2,507	18	139	3.3	--
Martin Substation	Import	--	8	--	20/50	358
Potrero Substation	Export	724	18	40	0.9	--
Potrero Substation	Import	--	8	--	20/50	85
Connections / Disconnections (duct bank, excl. substations)	Export	29,530	18	1,641	50	--
Connections / Disconnections (duct bank, excl. substations)	Import	29,530	8	3,691	50	291
Connections / Disconnections (individual locations, excl. substations)	Export	1,688	18	94	50	--
Connections / Disconnections (individual locations, excl. substations)	Import	1,688	8	211	50	0.43
Connections / Disconnections (Martin Substation)	Export	17,556	18	975	3.3	--
Connections / Disconnections (Martin Substation)	Import	17,556	8	2,194	20/50	2.6
Connections / Disconnections (Potrero Substation)	Export	389	18	22	0.9	--
Connections / Disconnections (Potrero Substation)	Import	389	8	49	20/50	--
Connections / Disconnections (Plymouth Substation)	Export	121	18	7	50	--
Connections / Disconnections (Plymouth Substation)	Import	121	8	15	50	1.19
Connections / Disconnections (Randolph Substation)	Export	69	18	4	50	--
Connections / Disconnections (Randolph Substation)	Import	69	8	9	50	0.68
	Total	101,936		9,090		739

Notes:

1. Truck counts represent round-trips. Trip distances are for one-way trips.
2. Two scenarios were analyzed for Martin and Potreo Substation soil import: a 20-mile trip length and a 50-mile trip length. All Martin and Potrero Substation excavated soil was assumed to be delivered to the Pier 96 rail terminal, as described and analyzed in the Air Quality Technical Report.

Abbreviations:

cy - cubic yards
mi - miles

Table 4
Daily Truck Trip Summary
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Location	Total One-Way Truck Trips	Number of Working Days	Average Daily Truck Trips
Martin Substation	994	136	7.3
Potrero Substation	251	168	1.5
Connections/Disconnections/Duct Banks	18,413	1,831	10.1

Notes:

1. Number of working days taken from the construction schedule in AQTR Table 1.
2. Connections/Disconnection/Duct Banks represent average trucks per day per work crew. Additional crew would result in increased daily truck trips, distributed wherever work is happening. On a single 700-foot city block, at 40 feet of work per day a crew would take 17.5 days, resulting in 176 one-way truck trips per block.

ATTACHMENT 1: AIR QUALITY TECHNICAL REPORT

RAMBOLL

ENVIRONMENT
& HEALTH

AIR QUALITY TECHNICAL REPORT

Date: March 2, 2021

To: **Julie Moore, San Francisco Planning Department**
Sue Chau, SFPUC

From: Michael Keinath, Michael Howley

Subject: CEQA AIR QUALITY HEALTH RISK ASSESSMENT FOR PACIFIC GAS & ELECTRIC POWER ASSET ACQUISITION PROJECT, SAN FRNCISCO, CALIFORNIA

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Ramboll US Corporation (Ramboll) conducted California Environmental Quality Act (CEQA) analyses of criteria air pollutants (CAPs) and precursors, as well as a health risk assessment (HRA) based on exposure to toxic air contaminants (TACs), from renovating existing distribution lines, duct banks, vaults, and substations (the "Project") planned by the San Francisco Public Utilities Commission (SFPUC). The Project is located in the southern part of San Francisco and will consist of the following:

- Installation of distribution line and vaults at various locations
- Construction/renovation of the Martin substation;
- Construction/renovation of Potrero substation; and
- Hiring as many as 200 on-site workers to oversee the operation of Martin and Potrero substations following construction

Ramboll assumed construction activities for the substation work will include site excavation, pile driving (at Potrero substation only), concrete foundations, concrete slabs, backfill and grading, and electrical equipment/gate install. Ramboll assumed construction activities for the duct bank/trenching work will include trenching.

San Francisco Modeling of Air Pollution Exposure Zone

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the Bay Area Air Quality Management District (BAAQMD) to inventory and assess air pollution and exposures from vehicles, stationary sources, and area sources within San Francisco. Citywide air quality dispersion modeling was conducted using AERMOD to assess emissions from the primary sources in the area on a 20- by 20-meter receptor grid covering the entire city. The citywide modeling results represent a comprehensive assessment of existing cumulative exposures to air pollution throughout the city. The methodology and technical documentation for modeling citywide air pollution is available in *The*

San Francisco Citywide Health Risk Assessment: Technical Support Documentation.[1] Model results were used to identify areas in the city with poor air quality, termed Air Pollutant Exposure Zones (APEZs), based on the following health-protective criteria: (1) cumulative $PM_{2.5}$ concentrations greater than 10 µg/m^3 and/or (2) an excess cancer risk from the contribution of emissions from all modeled sources greater than 100 per 1 million persons exposed. An additional health vulnerability layer was incorporated in the APEZ for those San Francisco ZIP codes in the worst quintile of Bay Area health vulnerability scores (ZIP codes 94102, 94103, 94110, 94124, and 94134). In these areas, the standard for identifying areas within the zone were lowered to (1) excess cancer risk from the contribution of emissions from all modeled sources greater than 90 per 1 million persons exposed and/or (2) cumulative $PM_{2.5}$ concentrations greater than 9 µg/m^3. Lastly, all parcels within 500 feet of a major freeway were also included in the APEZ, consistent with findings in the Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.[2]

The Project covers a vast part of the southern part of San Francisco. Parts of the Project are located in an APEZ; however, the majority of the Project is not located within an area that meets the APEZ criteria. Additionally, a small portion of the Project is within a health vulnerable zip code that is also in an APEZ.

CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Francisco is the lead agency responsible for Project approval. Per City of San Francisco requirements, Ramboll evaluated the Project in accordance with the current Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines for construction related average daily criteria air pollutant emissions, which were updated in May 2017.[3]

For projects within San Francisco, the City evaluates whether the proposed project plus existing background health risks would result in locations meeting the APEZ criteria. If the existing plus project health risk levels do not meet the APEZ criteria (discussed above), then no significant health risk impacts would occur. If the existing plus project health risk meets or exceeds the APEZ criteria, a significant impact would occur and the project is evaluated to determine whether the project's contribution to that health risk impact would be cumulatively considerable. For areas that do not meet the APEZ criteria without the project and would meet the APEZ criteria with the project, a considerable contribution is defined as the project resulting in a cancer risk of 10 in a million or greater or $PM_{2.5}$ levels of 0.3 ug/m^3 or greater. For areas that are within the APEZ already, a significant contribution is defined as a project cancer risk of 7 in a million or $PM_{2.5}$ levels of 0.2 ug/m^3.

For projects located outside of San Francisco, such as the Martin Substation, the City uses the BAAQMD health risk thresholds because the citywide health risk assessment does not extend beyond the San Francisco County border. A summary of thresholds used for this project is located in the table below:

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[1] Air District, San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Citywide Health Risk Assessment: Technical Support Documentation,* September 2020.

[2] Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, http://www.arb.ca.gov/ch/handbook.pdf, accessed October 2, 2018.

[3] BAAQMD. *2017*. California Environmental Quality Act (CEQA) Air Quality Guidelines. May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

CEQA Thresholds of Significance		
Description	Threshold	Units
Criteria Air Pollutant (and precursors) Emissions		
ROGs	54	lb/day
NO_X	54	
PM_{10}	82 (exhaust only)	
$PM_{2.5}$	54 (exhaust only)	
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	--
CO (local concentration)	None	--
GHGs	None	--
Within San Francisco- Risks and Hazards for New Sources and Receptors, Individual Project Contribution (non-APEZ pre -project)		
Cancer risk	10.0	in a million
Ambient $PM_{2.5}$ concentration (annual average)	0.3	$\mu g/m^3$
Within San Francisco Risks and Hazards for New Sources and Receptors, Individual Project Contribution (in APEZ pre-project)		
Cancer risk	7.0	in a million
Ambient $PM_{2.5}$ concentration (annual average)	0.2	$\mu g/m^3$
Outside of San Francisco- Project Level Risk and Hazard Thresholds		
Cancer risk	10.0	in a million
Ambient $PM_{2.5}$ concentration (annual average)	0.3	$\mu g/m^3$
Outside of San Francisco- Cumulative Risk and Hazard Thresholds		
Cancer risk	100.0	in a million
Ambient $PM_{2.5}$ concentration (annual average)	0.8	$\mu g/m^3$
Abbreviations: HI = hazard index; $\mu g/m^3$ = micrograms per cubic meter.		
Notes: Zone of Influence: 1,000-foot radius from fence line of source or receptor		

This Technical Memorandum evaluates Project emissions and health risks and hazards with respect to these thresholds of significance.

EMISSIONS METHODS AND RESULTS

The following sections present the details and results for two analyses:

1. Criteria Air Pollutant (CAP) Emissions from Construction; and
2. Community Risks and Hazards from Construction;

Construction Details

Construction of substation components would last approximately one year at each of the Martin and Potrero substations, and installation of the distribution line and vaults (including for the Distribution Separation Work) would occur at a rate of approximately 40 feet per day per work crew. Because distribution line installation occurs in a sequential manner, construction would only occur for approximately two weeks on any one block. Multiple crews, spread out geographically, could be working simultaneously. Construction activity data provided by SFPUC is presented in Tables 1-3.

A total of approximately 102,000 cubic yards of material import and export are associated with Project construction, of which approximately 39,100 cubic yards would be from the substations and the remaining from the distribution line alignments and distribution separation work (collectively classified as "Duct Bank & Connections/Disconnections"). Because both Martin and Potrero substations contain contaminated soils, soils from these locations would be disposed in a fully permitted hazardous waste facility in compliance with applicable law and regulations. For the purpose of this analysis, it is assumed that 100 percent of the contaminated soils from these two substations would either be trucked out of the Bay Area to a permitted disposal facility or trucked to the Port of San Francisco transfer facility on Cargo Way (at Pier 96), from which the soil would be conveyed by rail to the ECDC Landfill in Utah. Clean soil would be imported by truck back to the sites. In this analysis, emissions were slightly greater under the truck-to-rail scenario. To provide a conservative, worst-case scenario, this analysis assumes that export by rail outside the air basin would occur for all soil hauling from the Martin and Potrero substations.[4] Assumptions for rail activity and emissions are presented in Tables 4-7.

For the remainder of the Project excavations, it is assumed that approximately 50 percent of the soil would be reused onsite such that 50 percent of the soil would be exported to a disposal facility and an equal amount of soil imported for backfill. Soil is assumed to be exported out of the air basin. The source of the backfill for all Project components has not been determined but could be either from within or outside the air basin.

Haul truck distances would vary from 20 to 50 miles each way. Twenty miles is the default haul truck trip distance in CalEEMod®, the accepted emissions model of the BAAQMD[5]; it represents one-way travel within the San Francisco Bay Area Air Basin (SFBAAB). Fifty miles represent farther one-way travel distances beyond the SFBAAB as 50 miles is the approximate distance to the edge of the San Francisco Bay Area Air Basin. For the analysis, export of soil associated with non-substation excavation is assumed to be 50 miles. Import of soil for all Project components would vary depending on the scenario specified below:

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[4] Rail emissions *were* calculated assuming trains of up to 100 cars would travel from San Francisco to San Jose, then through Oakland towards Sacramento. While rail emissions may be lower than truck emissions per ton of cargo at scale, the amount of contaminated soil considered here is not large enough to fill an entire train. As a result, export by rail may therefore be less efficient than export by truck only.

[5] CALifornia Emissions Estimator MODel. Version 2016.3.2. http://www.caleemod.com/

- Scenario 1: soil import haul trucks travel 20 miles each way, within the SFBAAB.
- Scenario 2: soil import haul trucks travel 50 miles, beyond the boundaries of the SFBAAB.

Based on the soil import and export needs, as well as deliveries of construction material to the Project site, a total of 19,660 truck trips (one way) would be anticipated over the life of the Project, as shown in Table 3. A maximum of six construction vehicles per hour is assumed at any one work site, associated with the delivery of equipment and materials, and hauling of soils and construction debris.

Heavy construction equipment is assumed to operate continuously and simultaneously for one to eight hours per day for the construction of the distribution line, the Distribution Separation Work, and the modifications at the substations. In reality, construction activities are intermittent, start and stop at intervals, and often occur in sequence rather than simultaneously, to accommodate different types of activities. Thus, the equipment usage assumption is conservative.

Construction-Related CAP Emissions

Ramboll utilized California Emission Estimator Model version 2016.3.2 (CalEEMod®)[6] equivalent methodologies to quantify construction-related CAP emissions for the Project. CalEEMod® is a statewide program designed to calculate both CAP and GHG emissions for development projects in California.

CalEEMod® utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. CalEEMod® uses sources such as the US Environmental Protection Agency (USEPA) AP-42 emission factors,[7] California Air Resources Board's (CARB) on-road and off-road equipment emission models such as the EMission FACtor model (EMFAC) and the Emissions Inventory Program model (OFFROAD), and studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle.

Ramboll used CalEEMod® methodologies to estimate emissions from the following construction phases: site excavation, pile driving, concrete foundations, concrete slabs, backfill and grading, electrical equipment/gate install, and trenching. The construction phasing, equipment list, haul trips, and rail assumptions included in the analysis are shown in Tables 1-7.

The following CAP emission categories were included in the emissions inventory: construction equipment, mobile sources such as construction worker, vendor, and hauling vehicles, and rail transportation. The total CAP emissions from construction activities were calculated using CalEEMod® equivalent methodologies based on site-specific data provided by the SFPUC. On-road emissions were calculated using emission factors from the 2017 version of EMFAC. The total estimated construction CAP emissions were divided by construction duration to estimate the average daily construction emissions (in pounds per day).

In both scenarios described above, off-road equipment emissions were calculated for three cases: Uncontrolled, Partially Controlled, and Fully Controlled. In the Uncontrolled case, all off-road equipment was assumed to be CalEEMod® default engine tier. The Controlled cases assumes all Tier 4 Final off-road equipment for all construction. The Partially Controlled cases assume the use of all Tier 4 Final off-road equipment at the Martin and Potrero Substations and fleet average equipment everywhere else.

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[6] California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model. Available at: http://www.CalEEMod.com/.

[7] The USEPA maintains a compilation of Air pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: http://epa.gov/ttnchie1/ap42/.

Tables 8-10 shows the total construction CAP emissions by phase and the average daily CAP emissions for the Project for the Uncontrolled, Partially Controlled, and Fully Controlled cases, respectively. All construction at the Martin and Potrero substations is assumed to occur in the first year of construction, while duct bank/connection/disconnection work may be performed by a variable number of crews beginning at the same time as substation work.

Per SFPUC, duct bank work will occur at 40 linear feet per day per work crew, for a total of 1,831 work crew-days, i.e. a single work crew would take 1,831 days, while three work crews would complete all work in approximately 610 days. The actual number of work crews may vary depending on the availability of workers and equipment. Tables 8-10 present the maximum number of duct bank work crews that can operate simultaneously during and after the first year of substation construction without exceeding emissions thresholds.

The maximum number of work crews was determined using the following formulas:

Year 1 (Martin and Potrero substations plus simultaneous Duct Bank construction):

$$[BAAQMD\ Threshold\ (lbs/day)] > \frac{[Substation\ emissions\ (lbs)]}{260\ (days)} + N_1 * \frac{[Duct\ Bank\ emissions\ (lbs)]}{1831\ (work\ crew - days)}$$

After Year 1 (remaining Duct Bank construction only:

$$[BAAQMD\ Threshold\ (lbs/day)] > N_R * \frac{[Duct\ Bank\ emissions\ (lbs)]}{1831\ (work\ crew - days)}$$

Where 'N_1' is the number of duct bank work crews in the first year of construction, and 'N_R' is the number of duct bank work crews after substation work is completed. The total construction period duration is then calculated as:

$$Total\ Construction\ Period\ (years) = \frac{\left(\frac{1831 - (N_1 * 260)}{N_R}\right)}{260} + 1$$

Where the first term calculates the number of years that the N_R work crews will take to complete the remaining duct bank work, and the '+1' term represents the first year of simultaneous duct bank and substation construction.

Tables 8-10 first present the average daily substation and duct bank emissions individually. Average daily duct bank emissions are equivalent to a single work crew operating for 1,831 days. The lower portion of each table then presents the values of 'N_1' and 'N_R' work crews allowable without exceeding BAAQMD criteria air pollutant thresholds. In all cases and scenarios, NOx emissions are the limiting value, so all values of N are equal to the corresponding NOx column value in each case.

For example, in Scenario 1, Uncontrolled (Table 8), total substation NOx emissions are 5,448 lbs, and total duct bank emissions are 18,608 lbs. Using the first formula above, the maximum number of work crews in the first year of construction is determined by:

$$54 > \frac{5448}{260} + N_1 * \frac{18608}{1831}$$

Solving for N_1 yields $3.25 > N_1$, or a maximum of 3 duct bank work crews. Entering 3 crews back into the formula results in average daily emissions of 51.4 lbs/day during substation work, just below the threshold of 54 lbs/day.

After substation work is completed, the maximum number of work crews for the remaining duct bank work is calculated using the second formula above:

$$54 > N_R * \frac{18608}{1831} \Rightarrow 5.3 > N_R$$

Thus the maximum number of duct bank work crews for the remainder of construction is 5, which results in daily average NOx emissions of 51 lbs/day. Using the last formula, the total construction period is therefore 1.6 years, calculated as:

$$Total\ Construction\ Period\ (years) = \left(\frac{1831 - (4 * 260)}{5}\right)/260$$

As noted above, this analysis is constrained to the boundary of the San Francisco Bay Area Air Basin. Some truck and rail activity would carry on to other air districts beyond this boundary. From Table 10, the maximum total on-road and rail NOx emissions are 11,573 lbs in the 50-mile hauling scenario, and in the All Tier 4 case all of these emissions could occur in a single year. This would result in 44.5 lbs/day, or 5.8 tons/year, of NOx emissions. The potential emissions in other air districts would depend on the exact origin and destination point of each trip and how many miles within each air district the trucks and trains travel, all of which are currently unknown. However, given that the applicable thresholds for nearby air districts are similar to those in the BAAQMD, the possibility that not all on-road trips would extend beyond the bay area air basin, and the possibility that not all material import and export trip endpoints would be in the same area, it is likely that Project emissions in other air basins would be less than that report for the bay area air basin in this report. The likelihood decreases further if the Project occurs over a period longer than one year.

LOCAL COMMUNITY RISK AND HAZARD IMPACTS

Toxic Air Contaminant (TAC) Emissions

The TAC emissions associated with the Project construction were calculated using the screening tools developed by Ramboll (then ENVIRON) for SFPUC use: v.6 – Phase 1 (Area Projects) and v.8 – Phase 2 (Linear Roadway Projects). The Phase 1 tool was used for the work completed at the Martin and Potrero substations. The Phase 2 tool was used for the duct bank and connections/disconnections work. The screening tools use conservative dispersion modeling conducted in AERSCREEN, the USEPA screening model.

The emissions component of these tools is based on equipment usage data for estimating project emissions including total diesel particulate matter (DPM) emissions, average daily criteria air pollutant emissions including reactive organic gases (ROG), nitrogen oxides (NOx), particulate matter less than 10 micrometer in diameter (PM_{10}), and $PM_{2.5}$. TAC missions were estimated using construction information provided in Tables 1-3.[8]

[8] Rail emissions were not included in this assessment because rail activity would occur more than 1,000 feet away from the Project.

Construction Screening Health Risk Assessment

Ramboll analyzed Project construction-related risks by using SFPUC's screening tools mentioned above. In addition to the emissions component of these tools mentioned above, there is also an air dispersion modeling component and a health risk assessment component:

- The air dispersion modeling component uses conservative meteorological data and assumptions regarding project size and distribution for calculating air concentrations at varying receptor distances and heights.
- The health risk analysis component is used for evaluating cancer risk and $PM_{2.5}$ concentration at each receptor location, based on project emissions, project size, and surrounding project land use characteristics.

A screening analysis was conducted for the substation areas only as they represent the maximum amount of co-located construction activity. Duct bank work would not occur in one place for more than a day or two at a time and would result in minimal health risks even at adjacent receptors. The Potrero substation area is shown in Figure 1. Sensitive receptors are shown as modeled for the Potrero Power Station development EIR; that project's boundary is also included in the figure to show the location of new receptors adjacent to the Potrero substation. The Martin substation area is shown in Figure 2. The Martin substation and the nearest sensitive receptors are located in Daly City, beyond the extent of the citywide health risk assessment.

Tables 11 and 12 show the impact of the Project in the Uncontrolled (fleet average engines) and Controlled[9] (Tier 4 Final engines) cases, respectively, on the closest resident for the substation work including onsite duct bank and connection/disconnection work). As shown in Table 11, the Project may exceed cancer risk and $PM_{2.5}$ concentration thresholds in the Uncontrolled case. However, as shown in Table 12, both substations are below thresholds in the Controlled cases with all Tier 4 Final off-road equipment. Therefore, the Project is not expected to exceed thresholds with the use of Tier 4 Final off-road equipment at the substations.

Potrero Substation Cumulative HRA

The Potrero Substation is located adjacent to two projects that have published Draft Environmental Impact Reports (DEIRs) under CEQA, the Potrero Power Station and Pier 70. The nearest residential receptor to the Potrero Substation is part of the Potrero Power Station project, as shown in Figure 1. The DEIR for that project included a cumulative HRA that disclosed impacts of the project itself on its own on-site residential receptors, as well as the impacts of the Pier 70 project and background cancer risk and $PM_{2.5}$ values from the 2014 CRRP[10].

These impacts as well as the Project construction maximum (Controlled) health risks are presented in Table 13. Background values represent the 2020 Citywide HRA values for the Potrero Power station On-Site MEIR closest to the Potrero Substation. This is conservative, as not all of the impacts presented in the table may occur at the same receptor, or at the same time due to uncertainties in construction schedules of all three projects. Combined cancer risk impacts exceed the APEZ criteria described above, even before the addition of the Project. However, the Project-level impacts are below the 7 in a million threshold for receptors in the APEZ. Combined $PM_{2.5}$ impacts are below the APEZ cumulative criteria.

[9] Since both the Partially Controlled and Fully Controlled cases assume all Tier 4 Final off-road equipment at the Martin and Potrero substations, impacts would be the same and are not presented separately here.
[10] https://sfmea.sfplanning.org/2017-011878ENV_DEIR-Appendix_E.pdf

Martin Substation Cumulative HRA

Since the Martin substation and nearby receptors are located beyond the extent of the citywide health risk assessment model, and therefore the APEZ area, it is subject to additional CEQA threshold criteria for cumulative health risk impacts. Ramboll evaluated the cumulative impacts for these receptors by considering the nearby permitted stationary sources, planned construction projects (Brisbane Baylands), and major roadways within 1,000 feet of the Project.

The stationary sources are shown in Figure 2, and the maximum (Controlled) combined health risks are presented in Table 14. Combined impacts from all sources are below the applicable BAAQMD cumulative thresholds. Therefore, under both the controlled and uncontrolled scenarios, construction at the Martin Substation is not expected to exceed any cumulative health risk thresholds.

Rail Activity Screening Health Risk Assessment

Rail activity would result in DPM emissions along the haul route, away from the rest of the Project area. From Tables 4 and 8, rail activity would result in a total of 21 lbs of DPM over a 145 mile distance. For a receptor alongside the tracks, this would equate to 0.055 lbs of DPM over a length of 2,000 feet, or 1,000 feet in either direction along the tracks from the hypothetical receptor. This is well below the BAAQMD chronic trigger level for DPM of 0.26 lbs/year.[11] This trigger level is used by BAAQMD during stationary source permitting to determine whether an HRA needs to be conducted. Emissions below the trigger levels are not considered to be substantial risks to nearby receptors. Therefore, rail activity is not expected to exceed any thresholds.

Operational Screening Health Risk Assessment

The proposed project is an existing land use and would not induce population growth. Up to 200 new workers could be hired for operation of the project sites after construction; these workers would be expected to be drawn from the existing labor pool within the San Francisco Bay Area. The most recent BAAQMD CEQA Guidelines (May 2017) suggest further evaluation when roadways within 1,000 feet of sensitive receptors exceed 10,000 vehicles per day. Although this screening criteria is related to citing a sensitive receptor near pollution sources, this screening criteria can be applied to a project to determine whether or not the project's characteristics, such as vehicles trips generated, require further analysis.

However, this screening threshold was developed by BAAQMD using the now-superseded OEHHA Air Toxics Hot Spots Program Guidance. The most recent OEHHA Guidance introduced modified inhalation exposure parameters that increase calculated excess lifetime cancer risks by roughly a factor of 1.4. To be conservative, it is assumed that for screening purposes the actual exposure increase is a factor of 2, and that the roadway screening thresholds should be halved to 5,000 vehicles per day. Given the small number of new workers generated, that that some of them would take alternative forms of transportation (e.g., subway, bus, bicycles), rather than drive to work, that vehicular traffic would come from different locations and drive on different roads, and that the number of expected new operational workers is well below 5,000 vehicles per day, operation of the project is not expected to contribute to health risks for nearby sensitive receptors.

CLOSING

The analysis presented above represents a conservative estimate of the CAP, GHG, TAC, and health impacts from construction of the Project.

[11] https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-rule-5-new-source-review-of-toxic-air-contaminants/documents/rg0205_120716-pdf.pdf?la=en

Attachments:

Tables

Figures

TABLES

Table 1
Construction Schedule
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Phase		Subphase	Total Work Days
Martin Substation		Site Excavation	23
		Concrete Foundations	22
		Concrete Slabs	39
		Backfill and Grading	22
		Electrical Equipment/Gate Install	30
Potrero Substation		Site Excavation	23
		Pile Driving	32
		Concrete Foundations	22
		Concrete Slabs	39
		Backfill and Grading	22
		Electrical Equipment/Gate Install	30
Duct Bank & Connections / Disconnections	Duct Bank, Excluding Substations	Trenching	1,197
	Individual Locations, Excluding Substations	Trenching	85
	Martin Substation	Trenching	529
	Potrero Substation	Trenching	13
	Plymouth Substation	Trenching	5
	Randolph Substation	Trenching	3

Notes:

1. The construction schedule was provided by the Project Sponsor.

Table 2
Construction Equipment
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Construction Subphase	Equipment Type	Fuel	Number	Horsepower	Hours/Day
Site Excavation	Tractors/Loaders/Backhoes	Diesel	1	97	8
	Excavators	Diesel	1	158	8
	Off-Highway Trucks	Diesel	1	402	1
	Plate Compactors	Diesel	1	8	2
	Generator Sets	Diesel	1	84	8
	Air Compressors	Diesel	1	78	8
Pile Driving	Bore/Drill Rigs	Diesel	1	299	8
	Cranes	Diesel	1	299	8
	Generator Sets	Diesel	1	119	8
	Air Compressors	Diesel	1	119	8
Concrete Foundations	Cranes	Diesel	1	231	8
	Tractors/Loaders/Backhoes	Diesel	1	97	8
	Generator Sets	Diesel	1	84	8
	Air Compressors	Diesel	1	78	8
Concrete Slabs	Tractors/Loaders/Backhoes	Diesel	1	97	8
	Off-Highway Trucks	Diesel	1	402	8
	Plate Compactors	Diesel	1	8	8
	Generator Sets	Diesel	1	84	8
	Air Compressors	Diesel	1	78	8
Backfill and Grading	Tractors/Loaders/Backhoes	Diesel	1	97	8
	Off-Highway Trucks	Diesel	1	402	8
	Plate Compactors	Diesel	1	8	8
	Generator Sets	Diesel	1	84	8
	Air Compressors	Diesel	1	78	8
Electrical Equipment/Gate Install	Tractors/Loaders/Backhoes	Diesel	1	97	8
	Cranes	Diesel	1	231	8
	Generator Sets	Diesel	1	84	8
	Air Compressors	Diesel	1	78	8
Trenching	Concrete/Industrial Saws	Diesel	1	81	1
	Excavators	Diesel	1	158	6
	Generator Sets	Diesel	1	84	4
	Off-Highway Trucks	Diesel	1	402	2
	Other Construction Equipment	Diesel	2	172	1
	Roller	Diesel	1	80	2

Notes:
1. The construction schedule was provided by the Project Sponsor and is shown by subphase.

Table 3
Construction Haul Trips
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Phase		Subphase	Work Days	Worker Trips[1,2]	Vendor Trips[1,2]	Haul Trips - Import[1,3,5]	Haul Trips - Export[1,4,5]
				Average Round Trips/Day	Round Trips/ Subphase		
Martin Substation		Site Excavation	23	7.5	--	--	139
		Concrete Foundations	22	5.0	358	--	--
		Concrete Slabs	39	6.3	--	--	--
		Backfill and Grading	22	6.3	--	--	--
		Electrical Equipment/Gate Install	30	5.0	--	--	--
Potrero Substation		Site Excavation	23	7.5	--	--	40
		Pile Driving	32	5.0	--	--	--
		Concrete Foundations	22	5.0	85	--	--
		Concrete Slabs	39	6.3	--	--	--
		Backfill and Grading	22	6.3	--	--	--
		Electrical Equipment/Gate Install	30	5.0	--	--	--
Duct Bank & Connections / Disconnections	Duct Bank, Excluding Substations	Trenching	1,197	11	291	3,691	1,641
	Individual Locations, Excluding Substations	Trenching	85	11	1	211	94
	Martin Substation	Trenching	529	11	3	2,194	975
	Potrero Substation	Trenching	13	11	--	49	22
	Plymouth Substation	Trenching	5.0	11	1	15	7
	Randolph Substation	Trenching	3.0	11	1	9	4
			Total Round Trips	22,398	739	6,169	2,921

Notes:

1. Worker trips were estimated using CalEEMod methodology using the number of equipment in each subphase. Vendor and hauling trips are from the Project Sponsor.
2. Worker and vendor trips were assumed to be CalEEMod default trip lengths of 10.8 miles and 7.3 miles, respectively.
3. Two scenarios were analyzed for the hail trip length of imported soil for the Martin and Potrero substations: 20 miles (CalEEMod default) and 50 miles (driving distance to the edge of the San Francisco Bay Area Air Basin).
4. All exported soil from the Martin and Potrero substations was assumed to be hauled to the Pier 96 rail terminal (3.3 miles for Martin, 0.9 miles for Potrero) and then transported 145 miles by rail to the edge of the San Francisco Bay Area Air Basin.
5. All imported and exported soil from duct bank/connections/disconnections (excluding Martin and Potrero substations, as described above) was assumed to be hauled 50 miles by truck. Duct bank/connections/disconnections haul trips were calculated assuming only 50% of excavated soil was replaced.

Table 4
Rail Emissions Input Assumptions
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Parameter	Input	Notes
Line-haul distance (miles/one-way)	145	Rail distance to SFBAAB boundary
Locomotives/train	2	Based on recent project experience
Weight of locomotive (tons)	208	General Electric ET44C4
Rail cars/train	50	Based on recent project experience
Weight of empty rail car (tons)	38	Union Pacific small open-top hopper
Total weight of empty train (tons)	2,325	--
Material Exported per Car (tons/railcar)	83	Union Pacific small open-top hopper, lower end of load limit
Material Exported by Rail (tons/year)	26,469	Based on information from Project Sponsor
Trains/year	7	--

Notes:

1. Rail activity was provided in the form of total cubic yards of material to be exported by rail. Trains were assumed to travel south from the rail loading terminal at Pier 96 in San Francisco to San Jose, North through Oakland, then towards Sacramento. Emissions are calculated for the one-way trip distance to the edge of the San Francisco Bay Area Air Basin.

References:

GE Transportation. 2016. "Full Locomotive Product Portfolio". Available at: https://issuu.com/getransportation/docs/ge-locomotive-product-catalog-2016

Union Pacific. 2018. "Open-Top Hoppers". Available at: https://www.up.com/customers/all/equipment/descriptions/open-top_hoppers/index.htm

Abbreviations:

SFBAAB - San Francisco Bay Area Air Basin

Table 5
Off-Site Line-Haul Emission Factors
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

EPA Emission Factors (g/gal)	HC	ROG	NO_x	PM_{10}	$PM_{2.5}$	2020 Tier Distribution Activity
Pre-Tier	10	12	270	6.7	6.1	0%
Tier 0	10	12	179	6.7	6.1	0%
Tier 0+	6.2	7.6	150	4.2	3.8	1.4%
Tier 1	10	12	139	6.7	6.1	0%
Tier 1+	6.0	7.3	139	4.2	3.8	1.5%
Tier 2	5.4	6.5	103	3.7	3.4	0%
Tier 2+	2.7	3.3	103	1.7	1.5	36%
Tier 3	2.7	3.3	103	1.7	1.5	33%
Tier 4	0.83	1.0	21	0.31	0.29	28%
2020 Average (g/gallon)	2.3	2.8	81	1.4	1.2	

Notes:

1. Emission Factors were taken from ARB documentation (ARB 2017a). ROG emissions are calculated from HC by a factor of 1.21 ROG/HC (ARB 2017a).
2. Tier Distribution activity were taken from ARB inventory (ARB 2017b).

References:

California Air Resources Board (ARB). 2017a. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

California Air Resources Board (ARB). 2017b. "2017 Emissions Inventory Aggregated at County/Air Basin/State". Available at: https://www.arb.ca.gov/msei/ordiesel.htm

Abbreviations:

ARB - California Air Resources Board
g - gram
gal - gallon
HC - Hydrocarbons
NOx - Nitrogen oxides
ROG - Reactive organic gases

Table 6
Line-Haul Fuel Consumption
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Inbound from Sacramento

Parameter	Value	Notes
Negative Grade	-0.0047	Roseville to Oakland (ARB 2017)
Positive Grade	0.0038	Roseville to Oakland (ARB 2017)
1/(GTM/gal)	0.0010	
GTM/gal	970	

Outbound to Sacramento

Parameter	Value	Notes
Negative Grade	-0.0038	Oakland to Roseville (ARB 2017)
Positive Grade	0.0047	Oakland to Roseville (ARB 2017)
1/(GTM/gal)	0.0011	
GTM/gal	895	

Fuel Consumption

Year	Train Empty weight (tons)	Annual Freight (tons)	Annual Trains	One-Way Distance (mi)	Gross Ton-Miles	Fuel Consumption (gallons)
2020	2,325	26,469	7	145	6,197,590	6,922

Notes:

1. Gross ton-mile per gallon (GTM/gal) calculated per ARB Guidance as 1/(GTM/gal) = 0.00075 + 0.086*(Positive Grade) + 0.0098*(Negative Grade)

References:

California Air Resources Board (ARB). 2017. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

Abbreviations:

ARB - California Air Resources Board
gal - gallon
GTM - Gross ton mile
mi - mile

Table 7
Rail Emissions Summary
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Year	Annual Offsite Line Haul Emissions tons/year			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
2020	0.0210	0.620	0.0103	0.0095

Notes:

1. Emissions calculated based on ARB inventory data and projected locomotive fleet mix for 2020.
2. ROG Emissions converted from hydrocarbons by a factor of 1.21 (ARB 2017).

References:

California Air Resources Board (ARB). 2017. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

Abbreviations:

NOx - Nitrogen oxides
ROG - Reactive organic gases
PM_{10} - particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ - particulate matter less than 10 micrometers in diameter

Table 8
Construction Criteria Air Pollutant Emissions Summary - Uncontrolled[1]
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Phase	Source	20-Mile Hauling Scenario[2]				50-Mile Hauling Scenario[2]			
		ROG	NOx	PM_{10}	$PM_{2.5}$	ROG	NOx	PM_{10}	$PM_{2.5}$
Martin Substation	Off-Road	201	1,821	94	91	201	1821	94	91
	On-Road	7.7	77	4.3	2.3	7.7	77	4.3	2.3
Potrero Substation	Off-Road	247	2,288	116	111	247	2,288	116	111
	On-Road	6.5	22	2.8	1.3	6.5	22	2.8	1.3
Substation Soil Export	Rail[3]	42	1,240	21	19	42	1,240	21	19
Duct Bank/ Connections/ Disconnections (DB/C/D)[3]	Off-Road	1,423	13,498	678	642	1423	13,498	678	642
	On-Road	265	5,110	171	97	406	10,235	305	179
Total Substation Emissions		504	5,448	238	225	504	5,448	238	225
Total DB/C/D Emissions		1,688	18,608	849	738	1,828	23,733	983	821
Daily Average Substation Emissions (lbs/day)		1.9	21	0.92	0.86	1.9	21	0.92	0.86
Daily Average DB/C/D Emissions per Work Crew (lbs/day)		0.92	10	0.46	0.40	1.0	13	0.54	0.45
Threshold (lbs/day)		54	54	82	54	54	54	82	54
Substation Construction	Years	1	1	1	1	1	1	1	1
Work Crew-days for all DB/C/D Work[4]	Work Crew-days	1,831	1,831	1,831	1,831	1,831	1,831	1,831	1,831
Max DB/C/D Crews During Substation Work	Work Crews	3	3	3	3	2	2	2	2
Total Average Daily Emissions During Substation Work	lbs/day	4.7	51	2.3	2.1	3.9	47	2.0	1.8
Max DB/C/D Crews After Substation Work	Work Crews	5	5	5	5	4	4	4	4
Total Average Daily Emissions After Substation Work	lbs/day	4.6	51	2.3	2.0	4.0	52	2.1	1.8
DB/C/D Construction Duration	Years	0.8	0.8	0.8	0.8	1.3	1.3	1.3	1.3
Total Construction Period	Years	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3

Notes:

1. The "Uncontrolled" case assumes the use of fleet average CalEEMod default emission factors for offroad equipment, conservatively assuming a construction year of 2020.

2. All exported soil from duct bank/connections/disconnections (excluding Martin and Potrero substations, as described above) was assumed to be hauled 20 or 50 miles by truck. DB/C/D haul trips were calculated assuming only 50% of excavated soil was replaced. All other trips (worker, vendor, import hauling) used CalEEMod default trip lengths.

3. All exported soil from Martin and Potrero substations was assumed to be hauled to the Pier 96 rail terminal and then transported 145 miles by rail to the edge of the SFBAAB. Emissions from rail transport assume 7, 100-car trains are needed to haul all exports. This includes soil related to duct bank excavation at the two substations, emissions from which are included in the DB/C/D totals.

4. Calculations assume that all substation work is completed within one year (260 working days) in parallel with DB/C/D work, for a total maximum construction period of 1,831 working days.

Abbreviations

DB/C/D - Duct Bank/ Connections/ Disconnections

lbs - pounds

NOx - Nitrogen Oxides

PM_{10} - particulate matter less than 10 micrometers in diameter

$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter

ROG - reactive organic gases

SFBAAB - San Francisco Bay Area Air Basin

References

California Air Resources Board (ARB). 2017. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

California Air Resources Board (ARB). 2017b. "2017 Emissions Inventory Aggregated at County/Air Basin/State". Available at: https://www.arb.ca.gov/msei/ordiesel.htm

GE Transportation. 2016. "Full Locomotive Product Portfolio". Available at: https://issuu.com/getransportation/docs/ge-locomotive-product-catalog-2016

Union Pacific. 2018. "Open-Top Hoppers". Available at: https://www.up.com/customers/all/equipment/descriptions/open-top_hoppers/index.htm

Table 9
Construction Criteria Air Pollutant Emissions Summary - Partially Controlled[1]
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Phase	Source	20-Mile Hauling Scenario[2]				50-Mile Hauling Scenario[2]			
		ROG	NOx	PM_{10}	$PM_{2.5}$	ROG	NOx	PM_{10}	$PM_{2.5}$
Martin Substation	Off-Road	35	163	5	5	35	163	5	5
	On-Road	7.7	77	4.3	2.3	7.7	77	4.3	2.3
Potrero Substation	Off-Road	45	203	6	6	45	203	6	6
	On-Road	6.5	22	2.8	1.3	6.5	22	2.8	1.3
Substation Soil Export	Rail[3]	42	1,240	21	19	42	1,240	21	19
Duct Bank/ Connections/ Disconnections (DB/C/D)[3]	Off-Road	1,423	13,498	678	642	1423	13,498	678	642
	On-Road	265	5,110	171	97	406	10,235	305	179
Total Substation Emissions		137	1,705	38	33	137	1,705	38	33
Total DB/C/D Emissions		1,688	18,608	849	738	1,828	23,733	983	821
Daily Average Substation Emissions (lbs/day)		0.5	7	0.15	0.13	0.5	7	0.15	0.13
Daily Average DB/C/D Emissions per Work Crew (lbs/day)		0.92	10	0.46	0.40	1.0	13	0.54	0.45
Threshold (lbs/day)		54	54	82	54	54	54	82	54
Substation Construction	Years	1	1	1	1	1	1	1	1
Work Crew-days for all DB/C/D Work[4]	Work Crew-days	1,831	1,831	1,831	1,831	1,831	1,831	1,831	1,831
Max DB/C/D Crews During Substation Work	Work Crews	4	4	4	4	3	3	3	3
Total Average Daily Emissions During Substation Work	lbs/day	4.2	47	2.0	1.7	3.5	45	1.8	1.5
Max DB/C/D Crews After Substation Work	Work Crews	5	5	5	5	4	4	4	4
Total Average Daily Emissions After Substation Work	lbs/day	4.6	51	2.3	2.0	4.0	52	2.1	1.8
DB/C/D Construction Duration	Years	0.6	0.6	0.6	0.6	1.0	1.0	1.0	1.0
Total Construction Period	Years	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0

Notes:

1. The "Partially Controlled" case assumes the use of Tier 4 Final offroad equipment at the Martin and Potrero Substations, and fleet average CalEEMod default emission factors for offroad equipment for all DB/C/D work. Fleet average equipment conservatively assumes a construction year of 2020.
2. All exported soil from duct bank/connections/disconnections (excluding Martin and Potrero substations, as described above) was assumed to be hauled 20 or 50 miles by truck. DB/C/D haul trips were calculated assuming only 50% of excavated soil was replaced. All other trips (worker, vendor, import hauling) used CalEEMod default trip lengths.
3. All exported soil from Martin and Potrero substations was assumed to be hauled to the Pier 96 rail terminal and then transported 145 miles by rail to the edge of the SFBAAB. Emissions from rail transport assume 7, 100-car trains are needed to haul all exports. This includes soil related to duct bank excavation at the two substations, emissions from which are included in the DB/C/D totals.
4. Calculations assume that all substation work is completed within one year (260 working days) in parallel with DB/C/D work, for a total maximum construction period of 1,831 working days.

Abbreviations

DB/C/D - Duct Bank/ Connections/ Disconnections

lbs - pounds

NOx - Nitrogen Oxides

PM_{10} - particulate matter less than 10 micrometers in diameter

$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter

ROG - reactive organic gases

SFBAAB - San Francisco Bay Area Air Basin

References

California Air Resources Board (ARB). 2017. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

California Air Resources Board (ARB). 2017b. "2017 Emissions Inventory Aggregated at County/Air Basin/State". Available at: https://www.arb.ca.gov/msei/ordiesel.htm

GE Transportation. 2016. "Full Locomotive Product Portfolio". Available at: https://issuu.com/getransportation/docs/ge-locomotive-product-catalog-2016

Union Pacific. 2018. "Open-Top Hoppers". Available at: https://www.up.com/customers/all/equipment/descriptions/open-top_hoppers/index.htm

Table 10
Construction Criteria Air Pollutant Emissions Summary - Fully Controlled[1]
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Phase	Source	20-Mile Hauling Scenario[2]				50-Mile Hauling Scenario[2]			
		ROG	NOx	PM_{10}	$PM_{2.5}$	ROG	NOx	PM_{10}	$PM_{2.5}$
Martin Substation	Off-Road	35	163	4.7	4.7	35	163	4.7	4.7
	On-Road	7.7	77	4.3	2.3	7.7	77	4.3	2.3
Potrero Substation	Off-Road	45	203	5.9	5.9	45	203	5.9	5.9
	On-Road	6.5	22	2.8	1.3	6.5	22	2.8	1.3
Substation Soil Export	Rail[3]	42	1,240	21	19	42	1,240	21	19
Duct Bank/ Connections/ Disconnections (DB/C/D)[3]	Off-Road	286	1,239	38	38	286	1,239	38	38
	On-Road	265	5,110	171	97	406	10,235	305	179
Total Substation Emissions		137	1,705	38	33	137	1,705	38	33
Total DB/C/D Emissions		551	6,349	209	135	691	11,474	344	218
Daily Average Substation Emissions (lbs/day)		0.53	6.6	0.15	0.13	0.53	6.6	0.15	0.13
Daily Average DB/C/D Emissions per Work Crew (lbs/day)		0.30	3.5	0.11	0.074	0.38	6.3	0.19	0.12
Threshold (lbs/day)		54	54	82	54	54	54	82	54

Substation Construction	Years	1	1	1	1	1	1	1	1
Work Crew-days for all DB/C/D Work[4]	Work Crew-days	1,831	1,831	1,831	1,831	1,831	1,831	1,831	1,831
Max DB/C/D Crews During Substation Work	Work Crews	13	13	13	13	7	7	7	7
Total Average Daily Emissions During Substation Work	lbs/day	4.4	52	1.6	1.1	3.2	50	1.5	1.0
Max DB/C/D Crews After Substation Work	Work Crews	15	15	15	15	8	8	8	8
Total Average Daily Emissions After Substation Work	lbs/day	4.5	52	1.7	1.1	3.0	50	1.5	1.0
DB/C/D Construction Duration	Years	0	0	0	0	0.0053	0.0053	0.0053	0.0053
Total Construction Period	Years	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Notes:

1. The "Fully Controlled" case assumes the use of all tier 4 Final offroad equipment for all activity.

2. All exported soil from duct bank/connections/disconnections (excluding Martin and Potrero substations, as described above) was assumed to be hauled 20 or 50 miles by truck. DB/C/D haul trips were calculated assuming only 50% of excavated soil was replaced. All other trips (worker, vendor, import hauling) used CalEEMod default trip lengths.

3. All exported soil from Martin and Potrero substations was assumed to be hauled to the Pier 96 rail terminal and then transported 145 miles by rail to the edge of the SFBAAB. Emissions from rail transport assume 7, 100-car trains are needed to haul all exports. This includes soil related to duct bank excavation at the two substations, emissions from which are included in the DB/C/D totals.

4. Calculations assume that all substation work is completed within one year (260 working days) in parallel with DB/C/D work, for a total maximum construction period of 1,831 working days.

Abbreviations

DB/C/D - Duct Bank/ Connections/ Disconnections

lbs - pounds

NOx - Nitrogen Oxides

PM_{10} - particulate matter less than 10 micrometers in diameter

$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter

ROG - reactive organic gases

SFBAAB - San Francisco Bay Area Air Basin

References

California Air Resources Board (ARB). 2017. "2016 Line Haul Locomotive Model & Update". October. Available at: https://www.arb.ca.gov/msei/ordiesel.htm

California Air Resources Board (ARB). 2017b. "2017 Emissions Inventory Aggregated at County/Air Basin/State". Available at: https://www.arb.ca.gov/msei/ordiesel.htm

GE Transportation. 2016. "Full Locomotive Product Portfolio". Available at: https:///issuu.com/getransportation/docs/ge-locomotive-product-catalog-2016

Union Pacific. 2018. "Open-Top Hoppers". Available at: https://www.up.com/customers/all/equipment/descriptions/open-top_hoppers/index.htm

Table 11
Screening HRA Results, Fleet Average Engines
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Source			Receptor Type	Location	Cancer Risk	$PM_{2.5}$ Concentration
					in a million	$\mu g/m^3$
Martin	Substation	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 200 ft	35	0.42
		Offsite Truck Impacts	Resident	1st Floor, 30 ft	0.022	0.0015
	Trenching	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 200 ft	3.3	0.010
		Onsite Construction Impacts (Generator)	Resident	1st Floor, 200 ft	0.87	0.0026
				Total	40	0.44
Potrero	Substation	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 50 ft	64	0.37
		Offsite Truck Impacts	Resident	1st Floor, 50 ft	0.010	1.5E-04
	Trenching	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 50 ft	5.1	0.49
		Onsite Construction Impacts (Generator)	Resident	1st Floor, 50 ft	2.5	0.25
				Total	71	1.1

Notes:

1. Health values shown above are from the SFPUC screening tools and represent health effects with fleet average offroad engines in 2020.
2. The closest resident to the Martin substation was determined to be North of the site. The closest resident to the Potrero substation was determined to be the planned Potrero Power Station development, to the East of the substation.

Abbreviations:

ft - feet

HI - hazard index

$\mu g/m^3$ - micrograms per cubic meter

Table 12
Screening HRA Results, Tier 4 Engines
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Source			Receptor Type	Location	Cancer Risk	$PM_{2.5}$ Concentration
					in a million	$\mu g/m^3$
Martin	Substation	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 200 ft	3.3	0.046
		Offsite Truck Impacts	Resident	1st Floor, 30 ft	0.022	0.0015
	Trenching	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 200 ft	0.52	0.0016
		Onsite Construction Impacts (Generator)	Resident	1st Floor, 200 ft	0.07	2.2E-04
				Total	3.9	0.049
Potrero	Substation	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 50 ft	5.8	0.040
		Offsite Truck Impacts	Resident	1st Floor, 50 ft	0.010	1.5E-04
	Trenching	Onsite Construction Impacts (including onsite trucks)	Resident	1st Floor, 50 ft	0.68	0.066
		Onsite Construction Impacts (Generator)	Resident	1st Floor, 50 ft	0.21	0.020
				Total	6.7	0.13

Notes:

1. Health values shown above are from the SFPUC screening tools and represent health effects with Tier 4 offroad equipment engines.
2. The closest resident to the Martin substation was determined to be North of the site, across Geneva Avenue. The closest resident to the Potrero substation was determined to be the planned Potrero Power Station development, to the East of the substation.

Abbreviations:

ft - feet

HI - hazard index

$\mu g/m^3$ - micrograms per cubic meter

Table 13
Potrero Substation Cumulative HRA
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Source Name[1]	Cancer Risk in a million	$PM_{2.5}$ Concentration $\mu g/m^3$
2020 CHRA Background[2]	65	9.0
Pier 70 Construction and Operations[3]	11	0.0059
Potrero Power Station Construction and Operations[3]	40	0.17
Project Construction (Controlled)	6.7	0.13
Total	123	9.3
APEZ Cumulative Threshold	100	10.0

Notes:

1. All values taken from the reported on-site MEIRs of the Potrero Power Station Project unless otherwise noted. This approach maximizes the impact of the Potrero Power Station Project but is not guaranteed to be the same location as the MEIR from this screening assessment.
2. Values taken from the 2020 CHRA for the receptor coordinates of the Potrero Power Station On-Site PM2.5 MEIR, which is located in the building nearest the Potrero Substation (e.g., this Project).
3. Construction and Operation impacts are conservatively combined to account for uncertainty in construction schedules of each project.

Abbreviations:

APEZ - Air Pollution Exposure Zone
CHRA - Citywide Health Risk Assessment
MEIR - Maximally Exposed Individual Resident
$\mu g/m^3$ - micrograms per cubic meter

References:

San Francisco Department of Public Health (SFDPH). 2020. San Francisco Citywide Health Risk Assessment. https://sj-admin.s3-us-west-2.amazonaws.com/2020_0200_SFDeptOfHealth_DraftHealthRiskAssessment.pdf

San Francisco Environmental Planning (SFEP). 2018. Potrero Power Station Mixed-Use Project DEIR, Appendix E. Case Number 2017-011878ENV. Available at: https://sfmea.sfplanning.org/2017-011878ENV_DEIR-Appendix_E.pdf

Table 14
Martin Substation Cumulative HRA
Pacific Gas & Electric Power Asset Acquisition Project
San Francisco, California

Source Name[1]	Facility ID	Distance to Nearest Resident[2]	Cancer Risk	$PM_{2.5}$ Concentration
		feet	in a million	µg/m^3
View Rite	2902	250	0	0.02
Giannini's Auto Body	200304	210	0	0
Chevron Bayshore	110024	590	1.5	0
Seven Eleven	19235	540	1.7	0
Baylands Development Constructio	--	750	3.7	0.02
Baylands Development Traffic[3]	--	750	8.0	0.02
Geneva Avenue[3]	--	30	3.8	0.09
Bayshore Boulevard[3]	--	600	4.4	0.16
Project Construction (Controlled)	--	200	3.9	0.05
		Total	27	0.36
		BAAQMD Cumulative Threshold	100	0.80

Notes:

1. BAAQMD Stationary Sources within 1,000 feet of the nearest resident to the Project. See Figure 2.
2. Distances measured from the edge of the identified facility to the marked residential area in Figure 2. Gas station risk values (Chevron Bayshore and Seven Eleven) are scaled by distance multipliers provided by BAAQMD.
3. Maximum impacts at offsite existing receptors taken from the Baylands Draft EIR. Does not necessarily represent impacts at the Project MEIR. Cancer risk values scaled by 1.3744 to account for changes to guidance issued since the Baylands EIR was published.

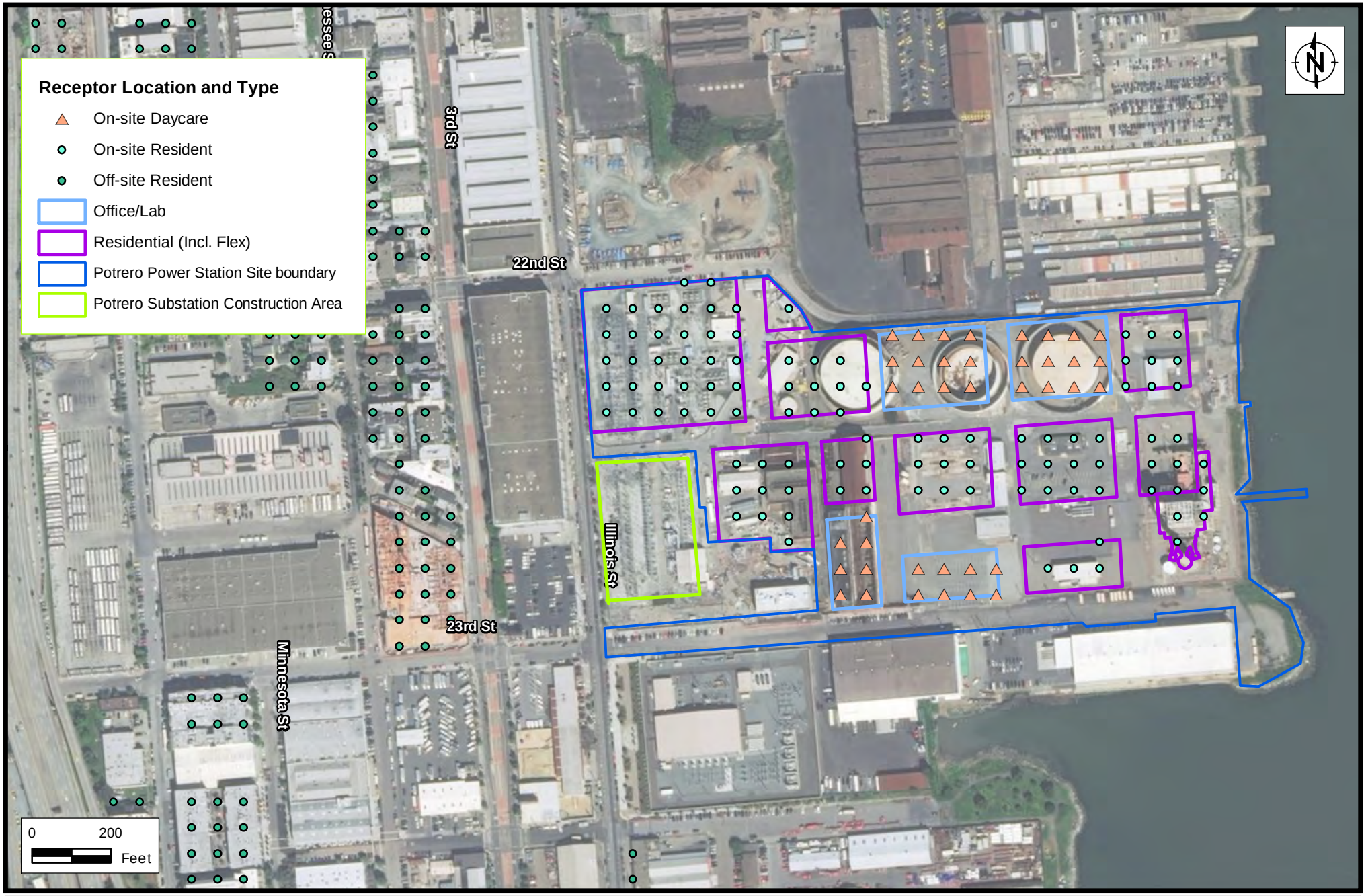
Abbreviations:

BAAQMD - Bay Area Air Quality Management District
HI - hazard index
µg/m^3 - micrograms per cubic meter

References:

BAAQMD. 2017. CEQA Guidelines. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_r
BAAQMD. 2020. BAAQMD Health Risk Calculator Beta 4.0. Available at: https://www.baaqmd.gov/plans-and-climate/california-
BAAQMD. 2020. Permitted Stationary Sources Risk and Hazards. Available at:
https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65
City of Brisbane. 2013. Brisbane Baylands Draft EIR. Available at: http://archive.brisbaneca.org/sites/default/files/4b_air-quality.pdf

FIGURES



RAMBOLL

DRAFTED BY: AA | DATE: 7/9/2020

Project Area and Sensitive Receptor Locations
Potrero Substation Construction
San Francisco, California

FIGURE
1

RAMBOLL

DRAFTED BY: AA | DATE: 7/27/2020

Project Area and Sensitive Receptor Locations
Martin Substation Construction
San Francisco, California

FIGURE
2

Appendix D: Biological Resources Technical Memorandum

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Bureau of Environmental Management
525 Golden Gate Avenue, 6th Floor
San Francisco, CA 94102
T 415.934.5700
F 415.934.5750
TTY 415.554.3488

INTER–OFFICE MEMORANDUM

DATE: April 15, 2021

TO: Julie Moore, Environmental Planning; Sue Chau, SFPUC BEM

FROM: Debbie Craven-Green DCG

SUBJECT: Biological Assessment of PGE Acquisition Project

An assessment was conducted of the biological resources in and adjacent to the PG&E Acquisition Project in San Francisco, Daly City and Brisbane, CA to identify potential sensitive biological resources that may be present. Following is a summary of the methods and results.

Methods

A desktop analysis was conducted of the project alignment by viewing the project area via Google Earth, obtaining species lists from the California Natural Diversity Database (CNDDB) (March 15, 2021) and the United States Fish and Wildlife Service (USFWS) Information, Planning and Consultation (IPaC) System Database (March 16, 2021), and mapping CNDDB species sightings within ¼ mile of the project area (See Attachment 1 and 2 Animal and Plant Species Maps). In addition, a site visit was conducted of the Broderick-Terry Duel site on March 11, 2021 by Debbie Craven-Green (Biologist and Permitting Manager at the Bureau of Environmental Management).

Results

Habitat

With the exception of the Broderick-Terry Duel site, all other project locations are within paved developed areas, such as city streets, sidewalks, parking areas, and existing substations. The Broderick-Terry Duel site is a small park containing a limited (approximately 15 ft x 20 ft) area of pavement at the western entrance, with gravel paths (3-10 feet wide) and green space which appears to be maintained (i.e. mowed) (See Attachment 3 -Photographs 1 and 2). There are no naturally vegetated areas associated with proposed work locations.

Hydrologic Features & Sensitive Habitats

No hydrologic features (e.g. drainages, wetlands, swales) or sensitive habitats were identified in or immediately adjacent to the proposed project area.

Species

A total of 40 sensitive plant species, including 11 federal and/or state endangered/threatened (bent-flowered fiddleneck, Franciscan manzanita, Presidio manzanita, San Bruno Mountain manzanita, Pacific manzanita, robust spineflower, San Francisco lessingia, showy Indian clover, white-rayed pentachaeta, California seablite, and beach layia), were listed on the CNDDB and/or IPaC searches within the proposed project vicinity. However, no suitable habitat for sensitive plant species occurs in the project area. In addition, many sensitive plant species listed on the CNDDB represent plants documented more than 50 years ago, in areas that have since undergone extensive development, thereby eliminating suitable habitat for plant species. Many other plant species were identified in the CNDDB due to generalized sighting locations, but for which suitable habitat may be present at nearby naturally vegetated areas such as San Bruno Mountain, Lake Merced, Fort Funston, McLaren Park and Bayview Park. See Attachments 1 and 2.

Of the 32 sensitive wildlife species, 23 federal or state listed (endangered, threatened, candidate or fully protected) animal/insect species were documented in the CNDDB and/or USFWS IPaC searches; however, none of them have the potential to occur within the project area. No suitable habitat for the listed mammals (salt marsh harvest mouse and southern sea otter), reptiles (green sea turtle and San Francisco garter snake), amphibian (California red-legged frog), fish (delta smelt, longfin smelt, and tidewater goby), butterfly species (Bay checkerspot, Callippe silverspot, Mission blue, Myrtle's silverspot, and San Bruno Elfin), insect (western bumble bee), or bird species (California Ridgeway's rail, California least tern, marbled murrelet, short-tailed albatross, California brown pelican, peregrine falcon, California black rail, bank swallow, and western snowy plover) was identified. Similar to the sensitive plant species, there may be areas surrounding the project area with suitable habitat for listed animal species, such as San Bruno Mountain, Lake Merced, Fort Funston, McLaren Park, Bayview Park, and San Francisco Bay. See Attachments 1 and 2. The California Ridgeway's rail was documented in 2011 in a marsh area located between Highway 101 and San Francisco Bay, approximately 500 feet south of the proposed distribution line segment along Harney Way.

Attachment 4 details the potential for each species discussed above to occur within the project area. No Critical Habitat is located within the proposed project area.

Nesting birds could utilize street trees and other adjacent vegetation in the vicinity of the project area depending upon the season.

Migration Corridors

The San Francisco Bay area is within a well-known Pacific Flyway used by migratory birds each year. Bay and coastal areas provide important habitat for migratory birds along their migration, as well as lakes within San Francisco such as Lake Merced and various lakes located in Golden Gate Park. The project area is predominantly within developed areas, surrounded by City streets and paved areas, and are generally situated within a developed, urban environment that doesn't provide substantial natural habitat movement corridors for any native or migratory wildlife species. In addition, the project sites are not in close proximity to aquatic features, with the exception of the easternmost project site adjacent to San Francisco Bay (but still located within developed areas). Due to this project site's location near Highway 101, impacts would not be expected on migratory birds associated with the proposed project.

Habitat Conservation Plans

There are no known habitat conservation plans which overlap with the proposed project area.

ATTACHMENT 1

Plant Species List from CNDDB

First_CODE1	SNAME	First_CNAME	First_ELMDATE	Last_ELMDATE
AMSLUN	Amsinckia lunaris	bent-flowered fiddleneck	19630503	19630503
ASTTEN	Astragalus tener var. tener	alkali milk-vetch	18680613	18680613
CARCOM	Carex comosa	bristly sedge	1866XXXX	1866XXXX
CHOCUS	Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	19570707	20020514
CHOROB	Chorizanthe robusta var. robusta	robust spineflower	18890611	18890611
CIRAND	Cirsium andrewsii	Franciscan thistle	19330609	19330609
CIROCC	Cirsium occidentale var. compactum	compact cobwebby thistle	19570707	19570707
COLCOR	Collinsia corymbosa	round-headed Chinese-houses	19190427	19190427
COLMUL	Collinsia multicolor	San Francisco collinsia	19390419	19390419
FRILIL	Fritillaria liliacea	fragrant fritillary	189502XX	189502XX
GILMIL	Gilia millefoliata	dark-eyed gilia	19030406	19030406
GRIHIR	Grindelia hirsutula var. maritima	San Francisco gumplant	19610827	198806XX
HEMCON	Hemizonia congesta ssp. congesta	congested-headed hayfield tarplan	XXXXXXXX	XXXXXXXX
HESSPA	Hesperevax sparsiflora var. brevifolia	short-leaved evax	19560330	19560330
HETDUB	Heteranthera dubia	water star-grass	1879XXXX	1879XXXX
HORCUN	Horkelia cuneata var. sericea	Kellogg's horkelia	19560419	19560419
LAYCAR	Layia carnosa	beach layia	1904XXXX	1904XXXX
LEPROS	Leptosiphon rosaceus	rose leptosiphon	188505XX	188505XX
LESGER	Lessingia germanorum	San Francisco lessingia	19470725	19470725
MONSIN	Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	19330709	19330709
SANMAR	Sanicula maritima	adobe sanicle	189503XX	189503XX
SILSCO	Silene scouleri ssp. scouleri	Scouler's catchfly	20XXXXXX	XXXXXXXX
SILVER	Silene verecunda ssp. verecunda	San Francisco campion	19330709	19330709
TRIFLO	Triphysaria floribunda	San Francisco owl's-clover	1886XXXX	XXXXXXXX

Potrero Substation
Randolph Substation
Plymouth Substation
Martin Substation

FRILIL ASTTEN TRIFLO SANMAR CARCOM LAYCAR COLCOR LESGER CHOCUS CHOROB GRIHIR CIROCC HESSPA SILSCO COLMUL AMSLUN GILMIL TRIFLO

Legend

PG&E Facility Locations

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CNDDB Plants

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Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

Hetch Hetchy Regional Water System

Services of the San Francisco Public Utilities Commission
Natural Resources and Lands Management Division

Data Source: CNDDB polygons from CA Natural Diversity Database, CA Department of Fish and Wildlife, June 2019 GIS data download. Basmemap courtesy of ESRI Inc.

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0 1 2 Miles

Author: JGL Date: 10-16-2019

City and County of San Francisco

CNDDB Special Status Plants
1/4 Mile from Project Points

ATTACHMENT 2

Animal Species List from CNDDB

First_CODE1	SNAME	First_CNAME	First_ELMDATE	Last_ELMDATE
ADEOPL	Adela oplerella	Opler's longhorn moth	19090411	19090411
BOMCAL	Bombus caliginosus	obscure bumble bee	19600416	2004XXXX
BOMOCC	Bombus occidentalis	western bumble bee	19680406	19680406
CICHIR	Cicindela hirticollis gravida	sandy beach tiger beetle	19220528	19220528
DUFSTA	Dufourea stagei	Stage's dufourine bee	19620417	19620417
EUCNEW	Eucyclogobius newberryi	tidewater goby	18951101	18951101
EUPEDI	Euphydryas editha bayensis	Bay checkerspot butterfly	XXXXXXXX	XXXXXXXX
GEOTRI	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	1985XXXX	1985XXXX
ISCGEM	Ischnura gemina	San Francisco forktail damselfly	19780429	19780429
LASCIN	Lasiurus cinereus	hoary bat	19690830	19690830
LATJAM	Laterallus jamaicensis coturniculus	California black rail	19371016	19371016
MYLCON	Mylopharodon conocephalus	hardhead	1989XXXX	1989XXXX
PLEICA	Plebejus icarioides missionensis	Mission blue butterfly	198805XX	20040602
RALOBS	Rallus obsoletus obsoletus	California Ridgway's rail	20110130	20110130
RANDRA	Rana draytonii	California red-legged frog	19XXXXXX	19XXXXXX
SPECAL	Speyeria callippe callippe	callippe silverspot butterfly	20040615	20040615
SPITHA	Spirinchus thaleichthys	longfin smelt	1995XXXX	20100902
TRAGUM	Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	19570622	19570622

Potrero Substation
Randolph Substation
Plymouth Substation
Martin Substation

SPITHA
TRAGUM
BOMCAL
RANDRA
ADEOPL
LATJAM
EUCNEW
GEOTRI
MYLCON
CICHIR
LASCIN
PLEICA
BOMOCC
DUFSTA
SPECAL
ISCGEM
RALOBS
EUPEDI

Legend

PG&E Facility Locations

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CNDDB Animals

Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

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Hetch Hetchy Regional Water System

Services of the San Francisco Public Utilities Commission
Natural Resources and Lands Management Division

Data Source: CNDDB polygons from CA Natural Diversity Database, CA Department of Fish and Wildlife, June 2019 GIS data download. Basmemap courtesy of ESRI Inc.

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0 1 2 Miles

Author: JGL Date: 10-16-2019

City and County of San Francisco

CNDDB Special Status Animals
1/4 Mile from Project Points

ATTACHMENT 3

Photograph 1: Photo of Broderick-Terry Duel site park, entering from the west entrance. Gravel paths lead around/through the park. Gravel path on right side where work would occur is ~3-4ft wide.

Photograph 2: Photo of gravel path extending from the path on the right side in Photograph 1 above, leading to the east entrance of the park. Gravel path widens on eastern side to ~8-10 feet wide.

Attachment 4: PG&E Acquisition Project – Potential Sensitive Plant and Wildlife within the Project Area

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Plants					
Franciscan onion *Allium peninsulare var. franciscanum*	1B.2	Perennial herb. Clay, volcanic, often serpentinite; Cismontane woodland, Valley and foothill grassland. Bloom April-June	Absent	No suitable habitat. No Potential	**No Effect**
Bent-flowered fiddleneck *Amsinckia lunaris*	SE/FE	Perennial herb. Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**
Franciscan Manzanita *Arctostaphylos franciscana*	FE/1B.1	Perennial evergreen shrub. Associated primarily with outcrops of serpentine or other ultramafic rock. Bloom Winter/Spring	Absent	No suitable habitat. No Potential	**No Effect**
Presidio Manzanita *Arctostaphylos hookeri ravenii*	FE/SE	Perennial evergreen shrub. Serpentinite outcrop, Chaparral, Coastal prairie, Coastal scrub. Bloom February-March	Absent	No suitable habitat. No Potential	**No Effect**
San Bruno Mountain manzanita *Arctostaphylos imbricata*	SE/1B.1	Perennial evergreen shrub. Rocky areas, chaparral, coastal scrub. Bloom February-May	Absent	No suitable habitat. No Potential	**No Effect**
Montara manzanita *Arctostaphylos montaraensis*	1B.2	Perennial evergreen shrub. Maritime chaparral, coastal scrub. Bloom January-March	Absent	No suitable habitat. No Potential	**No Effect**
Pacific manzanita *Arctostaphylos pacifica*	SE/1B.1	Perennial evergreen shrub. Chaparral, coastal scrub. Bloom February-April	Absent	No suitable habitat. No Potential	**No Effect**
Alkali milk-vetch *Astragalus tener var. tener*	1B.2	Annual herb. Alkali playa, alkali flats, mesic valley and foothill grassland, and vernal pools. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Bristly sedge *Carex comosa*	2B.1	Perennial rhizomatous herb. Moist areas in coastal prairie, valley and foothill grassland, and freshwater marshes on margins of lakes. Bloom April-September	Absent	No suitable habitat. No Potential	**No Effect**
Pappose tarplant *Centromadia parryi ssp. parryi*	1B.2	Annual herb. Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic). Bloom May-November	Absent	No suitable habitat. No Potential	**No Effect**
San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	1B.2	Annual herb. Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub. Sandy soil on terraces and slopes. Bloom April-July	Absent	No suitable habitat. No Potential	**No Effect**
Robust spineflower *Chorizanthe robusta var. robusta*	FE, 1B.1	Annual herb. Cismontane woodland, coastal dunes, and coastal scrub. Sandy terraces and bluffs or in loose sand. Bloom April-September	Absent	No suitable habitat. No Potential	**No Effect**
Franciscan thistle *Cirsium andrewsii*	1B.2	Perennial herb. Coastal bluff scrub, broadleaved upland forest, and coastal scrub. Mesic areas and sometimes serpentine seeps. Bloom March-July	Absent	No suitable habitat. No Potential	**No Effect**
Compact cobwebby thistle *Cirsium occidentale var. compactum*	1B.2	Perennial herb. Chaparral, coastal dunes, coastal prairie, and coastal scrub. Bloom April-June	Absent	No suitable habitat. No Potential	**No Effect**
Round-headed Chinese houses *Collinsia corymbose*	1B.2	Annual herb. Coastal areas/dune. Bloom April-June	Absent	No suitable habitat. No Potential	**No Effect**
San Francisco collinsia *Collinsia multicolor*	1B.2	Annual herb. Northern coastal scrub, closed-cone pine forest. Bloom March-May	Absent	No suitable habitat. No Potential	**No Effect**
Fragrant fritillary *Fritillaria liliacea*	1B.2	Perennial herb. Coastal prairie, valley grassland, northern coastal scrub. wetland-riparian. Bloom February-April	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Blue coast gilia *Gilia capitate ssp. chamissonis*	1B.1	Annual herb. Coastal dunes, coastal scrub. Bloom April-June	Absent	No suitable habitat. No Potential	**No Effect**
Dark-eyed gilia *Gilia millefoliata*	1B.2	Native annual herb found on the coastline of Oregon and northern California, where it grows in sand dune habitat. Bloom April-July	Absent	No suitable habitat. No Potential	**No Effect**
Diablo helianthella *Helianthella castanea*	1B.2	Perennial herb. Usually rocky, axonal soils. Often in partial shade; Broad-leafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**
Congested-headed hayfield tarplant *Hemizonia congesta ssp. Congesta*	1B.2	Annual herb. Northern coastal scrub, valley grassland. Bloom April-November	Absent	No suitable habitat. No Potential	**No Effect**
Short-leaved evax *Hesperevax sparsiflora var. brevifolia*	1B.2	Annual herb. Northern coastal scrub. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**
Water star-grass *Heteranthera dubia*	2B.2	Perennial herb. Wetlands. Bloom July-August	Absent	No suitable habitat. No Potential	**No Effect**
Kellogg's horkelia *Horkelia cuneate var. sericea*	1B.1	Perennial herb. Northern coastal scrub, coastal sage scrub, closed-cone pine forest. Bloom February-July	Absent	No suitable habitat. No Potential	**No Effect**
Point Reyes horkelia *Horkelia marinensis*	1B.2	Perennial herb. Sandy areas; Coastal dunes, Coastal prairie, Coastal scrub. Bloom May-September	Absent	No suitable habitat. No Potential	**No Effect**
Beach layia *Layia carnosa*	FE, SE, 1B.1	Annual herb. Dunes and coastal areas. Bloom March-July	Absent	No suitable habitat. No Potential	**No Effect**
Rose leptosiphon *Leptosiphon rosaceus*	1B.1	Annual herb. Coastal bluff scrub. Bloom April-July	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
San Francisco lessingia *Lessingia germanorum*	FE, SE, 1B.1	Annual herb. Northern coastal scrub dunes. Bloom July-November	Absent	No suitable habitat. No Potential	**No Effect**
Arcuate bushmallow *Malacothamnus arcuatus*	1B.2	Perennial evergreen shrub. Brushy canyons, chaparral, cismontane woodland. Bloom April-September	Absent	No suitable habitat. No Potential	**No Effect**
Northern curly-leaved monardella *Monardella sinuate ssp. Nigrescens*	1B.2	Annual herb found in chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest. Bloom April- September	Absent	No suitable habitat. No Potential	**No Effect**
White rayed pentachaeta *Pentachaeta bellidiflora*	FE/SE	Cismontane woodland, valley and foothill grassland (often serpentinite). Bloom March-May	Absent	No suitable habitat. No Potential	**No Effect**
Choris' popcornflower *Plagiobothrys chorisianus var. chorisianus*	1B.2	Annual herb. Chaparral, coastal prairie, coastal scrub. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**
Adobe sanicle *Sanicula maritima*	1B.1	Perennial herb. Coastal prairie, chaparral, valley grassland, and occasionally in wetland-riparian. Bloom February-May	Absent	No suitable habitat. No Potential	**No Effect**
Chaparral ragwort *Senecio aphanactis*	2B.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Bloom January-May	Absent	No suitable habitat. No Potential	**No Effect**
Scouler's catchfly *Silene scouleri ssp. Scouleri*	2B.2	Perennial herb found in coastal bluff scrub, coastal prairie, and valley and foothill grassland. Bloom March-September	Absent	No suitable habitat. No Potential	**No Effect**
San Francisco campion *Silene verecunda ssp. Verecunda*	1B.2	Perennial herb. Coastal areas with coastal prairie, chaparral, northern coastal scrub, valley grassland. Bloom March-June	Absent	No suitable habitat. No Potential	**No Effect**
California seablite *Suaeda californica*	FE/1B.1	Perennial evergreen shrub. Marshes and swamps (coastal salt). Bloom July-October	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Showy Indian clover/two-fork clover *Trifolium amoenum*	FE/1B.1	Occurs usually in wetlands, occasionally in non-wetlands. Bloom April-June	Absent	No suitable habitat. No Potential	**No Effect**
San Francisco owl's-clover *Triphysaria floribunda*	1B.2	Annual herb. Coastal prairie, valley grassland. Bloom April-June.	Absent	No suitable habitat. No Potential	**No Effect**
Coastal triquetrella *Triquetrella californica*	1B.2	Moss. Sandy habitats, on soil or rock, but usually adjacent to the coast; also found in inland chaparral. Grows on exposed to shaded soil, rocks or sand, in dry or moist situations.	Absent	No suitable habitat. No Potential	**No Effect**
Invertebrates					
Western bumble bee *Bombus occidentalis*	SC	Historically broadly distributed in western North America. *Bombus occidentalis* occurs along the Pacific coast and western interior of North America, from Arizona, New Mexico and California, north through the Pacific Northwest and into Alaska. Eastward, the distribution stretches to the northwestern Great Plains and southern Saskatchewan. This species nests underground in cavities or burrows left behind by rodents or other animals.	Absent	No suitable habitat. No Potential	**No Effect**
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE	Feed on other flowers in addition to their host plant, stonecrop (*Sedum spathulifolium*), a low growing succulent associated with rocky outcrops that occur at 274 to 328 m (900 to 1075 feet) elevation. Inhabits rocky outcrops and cliffs in coastal scrub on the San Francisco peninsula.	Absent	No suitable habitat. No Potential	**No Effect**
Bay checkerspot butterfly *Euphydrayas editha bayensis*	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant, *Orthocarpus densiflorus* and *O. purpurescens* are the secondary host plants.	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Mission blue butterfly *Plebejus icaraioides missionensis*	FE	Inhabits grasslands of the San Francisco Peninsula. The mission blue butterfly uses three larval host plants: *Lupinus albifrons*, *L. formosus*, and *L. variicolor*.	Absent	No suitable habitat. No Potential	**No Effect**
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	Subspecies of the more common callippe fritallary butterfly (*Speyeria callippe*). The silverspot's hostplant is Johnny jump-up (*Viola pedunculata*).	Absent	No suitable habitat. No Potential	**No Effect**
Myrtle's Silverspot Butterfly *Speyeria zerene myrtleae*	FE	Found in coastal dune or prairie habitat. Species extirpated from areas south of Golden Gate Bridge. Adults feed on nectar from flowers, including gumplant (*Grindelia rubicaulis*), yellow sand verbena (*Abronia latifolia*), mints (*Monardella spp.*), bull thistle (*Cirsium vulgare*) and seaside daisy (*Erigeron glaucus*). Adult butterflies are typically found in areas that are sheltered from the wind, below 250 m (820 feet) elevation, and within 3 miles of the coast.	Absent	No suitable habitat. No Potential	**No Effect**
Fish					
Tidewater goby *Eucyclogobius newberryi*	FE	Requires beds of loose, silt-free, well-oxygenated coarse gravel for spawning. After hatching, juveniles spend at least one summer in the freshwater rearing areas, so the stream must have either perennial flow or cool ephemeral pools with subsurface flow, shade, food, and shelter during the dry season.	Absent	No suitable habitat. No Potential	**No Effect**
Delta Smelt *Hypomesus transpacificus*	FT	Endemic to the upper San Francisco Estuary, principally the upper Sacramento-San Joaquin Delta.	Absent	No suitable habitat. No Potential	**No Effect**
hardhead *Mylopharodon conocephalus*	SSC	This species is listed in Lake Merced/Harding Park as historically collected by California Department of Fish and Wildlife biologists during sporadic sampling over the period between 1939 and 1989.	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Longfin smelt *Spirinchus thaleichthys*	FC, ST	This is an anadromous smelt found in California's bay, estuary, and nearshore coastal environments from San Francisco Bay north to near the Oregon border.	Absent	No suitable habitat. No Potential	**No Effect**
Amphibians					
California red-legged frog *Rana draytonii*	FT, SSC	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11 to 20 weeks of permanent water for larval development. Adults and sub-adults can aestivate in small mammal burrows and moist leaf litter generally found within 300 feet of aquatic habitat. However, during wet periods, they can travel up to 1 mile between aquatic features.	Absent	No suitable habitat. No Potential	**No Effect**
Reptiles					
Green Sea Turtle *Chelonia mydas*	FT	Adults frequent inshore bays, lagoons, and shoals with lush seagrass meadows. Entire generations often migrate between one pair of feeding and nesting areas. Classified as an aquatic species and are distributed around the globe in warm tropical to subtropical waters.	Absent	No suitable habitat. No Potential	**No Effect**
Western pond turtle *Emys marmorata*	SCC	Use both aquatic and terrestrial habitats. Found in rivers, lakes, streams, ponds, wetlands, vernal pools, ephemeral creeks, reservoirs, agricultural ditches, estuaries, and brackish waters. Prefer areas that provide cover from predators, such as vegetation and algae, as well as basking sites for thermoregulation.	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	FE/SE/FP	Preferred habitat is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied. Emergent and bankside vegetation such as cattails, bulrushes and spike rushes are preferred and used for cover.	Absent	No suitable habitat. No Potential	**No Effect**
Mammals					
Townsend's big-eared bat *Corynorhinus townsendii*	SSC	This species forages in a wide variety of arid habitats. It roosts in rocky areas with caves or tunnels and occasionally inhabit old buildings.	Absent	No suitable habitat. No Potential	**No Effect**
Southern Sea Otter *Enhydra lutris nereis*	FT	Inhabit temperate coastal waters with rocky or soft sediment ocean bottom. They live in offshore forests of giant kelp (*Macrocystis pyrifera*), and spend most of their active time foraging below the canopy.	Absent	No suitable habitat. No Potential	**No Effect**
Western red bat *Lasiurus blossevillii*	SCC	This species roosts primarily in trees, preferring habitat edges and mosaics with trees that are protected above and open below for foraging.	Absent	Potentially suitable roosting habitat at Broderick-Terry Duel Site, adjacent to project area. No suitable habitat within project area. Low Potential	**No Effect**
Salt Marsh Harvest Mouse *Reithrodontomys raviventris*	FE/SE	Inhabit saline or brackish marshes. This species requires dense ground cover. Prefers the cover of pickleweed, provided that it has non--submerged, salt-tolerant vegetation for escape during high tides.	Absent	No suitable habitat. No Potential	**No Effect**
Birds					

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Burrowing owl *Athene cunicularia*	SSC	This species is found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. It is a subterranean nester, dependent on burrowing mammals, most notably the California ground squirrel (Otospermophilus beecheyi).	Absent	No suitable habitat. No Potential	**No Effect**
Marbled Murrelet *Brachyramphus marmoratus*	FT/SE	Long-lived seabirds that spend most of their life in the marine environment, but use old-growth forests for nesting. Courtship, foraging, loafing, molting, and preening occur in near-shore marine waters.	Absent	No suitable habitat. No Potential	**No Effect**
Western Snowy Plover *Charadrius nivosus nivosus*	FT	Breeds on coastal beaches from southern Washington to southern Baja California, Mexico. Breeding generally occurs above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. In winter, western snowy plovers are found on nesting beaches, man-made salt ponds, and on estuarine sand and mud flats.	Absent	No suitable habitat. No Potential	**No Effect**
American peregrine falcon *Falco peregrinus anatum*	FP	Generally found found in open habitats from tundra, savannah, and coastal areas to high mountains. Commonly associated with tall cliffs with wide open views for perching and nesting and usually near a water source. Cliffs, ledges, caves, or small holes with protection from the weather provide nesting sites. Typically breeds in woodland, forest, and coastal habitats, but also found in many cities throughout North America, nesting on the window or other ledges of tall buildings.	Absent	Suitable habitat not found near project alignment. No Potential	**No Effect**
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	SSC	Resident of the San Francisco bay region, in fresh and saltwater marshes.	Absent	No suitable habitat. No Potential	**No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Loggerhead shrike *Lanius ludovicianus*	SSC	Lives in open, brushy habitats including grasslands, desert scrub, prairies, savannas, and agricultural areas.	Absent	No suitable habitat. No Potential	**No Effect**
California black rail *Laterallus jamaicensis coturniculus*	ST/FP	Yearlong resident of saline, brackish, and fresh emergent wetlands in the Sacramento-San Joaquin River delta, the San Francisco Bay area, Bolinas Lagoon and Tomales Bay in Marin County, Morro Bay in San Luis Obispo County, White Slough in San Joaquin County, the Salton Sea area, and the Lower Colorado River Valley.	Absent	No suitable habitat. No Potential	**No Effect**
Alameda song sparrow *Melospiza pusillula*	SSC	Salt marshes bordering south arm of San Francisco Bay, from San Francisco on west south to vicinity of Palo Alto and Alviso, Santa Clara County, and north on east side of Bay	Absent	No suitable habitat. No Potential	**No Effect**
California brown pelican *Pelecanus occidentalis californicus*	FP	Generally uses the rocky islands along the California coast for their group, or "colonial," nest sites. These islands typically feature steep, rocky slopes with little vegetation.	Absent	No suitable habitat. No Potential	**No Effect**
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus*	FE	Lives on the open ocean waters and islands.	Absent	No suitable habitat. No Potential	**No Effect**
Cassin's auklet *Ptychoramphus aleuticus*	SSC	Nest on islands, although many individuals are still found far offshore. In the non-breeding season, they are found in the open ocean, at the outer edge of the continental shelf.	Absent	No suitable habitat. No Potential	**No Effect**
California Ridgeway's rail *Rallus obsoletus obsoletus*	FE, SE, FP	This species is restricted almost entirely to the tidal marshes of San Francisco estuary.	Absent	Known occurrence and suitable habitat is ~450 feet south of proposed work adjacent to San Francisco Bay. No suitable habitat is within proposed work area. No Potential	Known sighting location is within ~200 feet of Highway 101, thus potential noise associated with proposed work would not affect individuals. Work would also be timed to occur outside of nesting season. **No Effect**

Species	Status[1]	General Habitat/Species Description	General Habitat Present/Absent	Potential to Occur	Potential for Effect
Bank swallow *Riparia riparia*	ST	Utilizes the sand banks and vertical embankments for nesting purposes. It is a colonial nester that selects sand or gravel banks and railroad and highway embankments for colony sites. The banks must be at least one meter in height to prohibit predators from entering the colony and the soils around the embankment must be friable to allow the small swallows to excavate their burrows.	Absent	No suitable habitat. No Potential	**No Effect**
California Least Tern *Sterna antillarum browni*	FE	Live along the coast. They nest on open beaches kept free of vegetation by the tide.	Absent	No suitable habitat. No Potential	**No Effect**

Notes:
CNDDB = California Natural Diversity Database
Sources: Data obtained from United States fish and Wildlife Service Information, Planning and Consultation System Database (accessed 10/16/19), and CNDDB (search included ¼ mile radius of project area).

[1]**Status Legend**

Federal and State Ranking

FE	Listed as endangered under the Federal Endangered Species Act
FT	Listed as threatened under the Federal Endangered Species Act
FC	Listed as candidate species under the Federal Endangered Species Act
SE	Listed as endangered under the California Endangered Species Act
ST	Listed as threatened under the California Endangered Species Act
SC	Listed as candidate species under the State Endangered Species Act
SSC	Species of special concern under the California Endangered Species Act
FP	Listed as fully-protected by California Fish and Game Commission

California Native Plant Society Rare Plant Ranking

1B.1	Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California.
1B.2	Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California.
2B.1	Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere, seriously threatened in California
2B.2	Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere, fairly threatened in California