5.3 Air Quality

AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☒
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

5.3.1 Setting

Air Basin

The project would be in the San Francisco Bay Area air basin in the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates sources of air pollution and the programs to improve air quality in the region. The air basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allow air to flow in and out of the Bay Area air basin and California's Central Valley (BAAQMD, 2012).

Climate and Meteorology

San Francisco commonly experiences cool, foggy weather in the summer due to its proximity to the ocean and the associated cool air within the marine layer. Because most of San Francisco's topography is below 200 feet, marine air is able to flow easily across most of the City, resulting in relatively lower air pollution potential lower than downwind portions of the region. Pollutant transport occurs from San Francisco to the southern and eastern portions of the region, where pollutants can accumulate (BAAQMD, 2012).

Ambient Air Quality

Ambient air quality is assessed by measuring concentrations of air pollutants in the ambient air. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are planning standards that define the upper limits for airborne concentrations of pollutants. The standards are designed to protect public health and welfare with a reasonable margin of safety. At the national level, the federal Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to establish NAAQS and designate geographic areas that are either attaining or violating the standards. In California, air quality management and regulation is the responsibility of the California Air Resources Board (CARB) and local air quality management districts, in this case BAAQMD.

Criteria Air Pollutants. The NAAQS and CAAQS are established for "criteria pollutants." These are ozone, respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe), but it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation. The USEPA and CARB both have independent authority to develop and establish ambient air quality standards, and in general, the CAAQS are more stringent than the corresponding NAAQS. The national and California ambient air quality standards are shown in Table 5.3-1.

Table 5.3-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour 8-hour	0.09 ppm 0.070 ppm	— 0.075 ppm
Respirable Particulate Matter (PM10)	24-hour Annual Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
Fine Particulate Matter (PM2.5)	24-hour Annual Mean	— 12 µg/m^3	35 µg/m^3 15 µg/m^3
Carbon Monoxide (CO)	1-hour 8-hour	20 ppm 9.0 ppm	35 ppm 9.0 ppm
Nitrogen Dioxide (NO_2)	1-hour Annual Mean	0.18 ppm 0.030 ppm	0.100 ppm 0.053 ppm
Sulfur Dioxide (SO_2)	1-hour 24-hour Annual Mean	0.25 ppm 0.04 ppm —	0.075 ppm 0.14 ppm 0.03 ppm

Notes: ppm=parts per million; µg/m3= micrograms per cubic meter; "—" =no standard.
Source: CARB (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), June, 2012.

Attainment Status and Air Quality Plans. The USEPA, CARB, and local air district work together to classify an area as attainment, unclassified, or nonattainment depending on the historical levels of contaminants measured in the ambient air. Table 5.3-2 summarizes attainment status for the criteria pollutants in the BAAQMD with both the federal and state standards.

Existing Local Air Quality Conditions. Table 5.3-3 shows air quality measurements at the nearest air quality monitoring site to the project area (Arkansas Street). This station, located in the Potrero Hill neighborhood west of the Proposed Project route, provides data that are representative of the project area.

Table 5.3-2. Attainment Status for BAAQMD

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

Source: BAAQMD; http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

Ozone. Adverse health effects of ozone include: aggravation of respiratory and cardiovascular diseases; reduced lung function; and increased cough and chest discomfort (BAAQMD, 2012). Ambient levels of ozone throughout the BAAQMD have generally improved since recordkeeping began, although peak concentrations in San Francisco have remained steady (CARB, 2013). Days exceeding the standards are generally attributed to high levels of ozone precursor emissions during the warm summer months. Motor vehicle emissions, industrial emissions, and high ambient temperatures that occur in the inland portions of the BAAQMD contribute to summertime ozone formation and subsequent occasional violations of the standards. In San Francisco, ozone concentrations do not commonly exceed the standards.

Table 5.3-3. Summary of Ambient Air Quality Monitoring Data in San Francisco

Pollutant	Averaging Time	2009	2010	2011
Ozone (ppm)	1-Hour	0.072	0.079	0.070
	8-Hour	0.057	0.051	0.054
PM10 (µg/m^3)	24-Hour	36.0	39.7	45.6
	Annual Arithmetic Mean	18.6	—	19.5
PM2.5 (µg/m^3)	24-Hour	**35.5**	**45.3**	**47.5**
	Annual Arithmetic Mean	—	10.5	9.5
CO (ppm)	1-Hour	—	—	—
	8-Hour	2.86	1.37	1.20
NO_2 (ppm)	1-Hour	0.059	0.093	0.093
	Annual Average	0.015	0.013	0.014

All data are from the Arkansas Street monitoring station; SO_2 is not monitored. **Bold** text indicates figure exceeds an air quality standard.
Notes: ppm=parts per million; µg/m^3= micrograms per cubic meter; "—" = insufficient data.
Source: CARB 2013; http://www.arb.ca.gov/adam/topfour/topfour1.php.

Particulate Matter. Adverse health effects of particulate matter include: reduced lung function; aggravation of respiratory and cardiovascular diseases; increases in mortality rate; and reduced lung function growth in children (BAAQMD, 2012). Long-term average concentrations of inhalable PM10 and PM2.5 have remained relatively constant in the BAAQMD since recordkeeping began (CARB, 2013). PM10 is generated within the project area largely as a result of wind during dry conditions (resulting in fugitive dust) and combustion sources. Combustion of fossil fuels is the primary source of directly emitted PM2.5, and combustion exhaust contains nitrogen and sulfur compounds that react to form PM2.5 in the atmosphere. In San Francisco, the 24-hour average concentrations of PM2.5 have exceeded the standards in recent years, as shown in Table 5.3-3.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. 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's. TACs do not have ambient air quality standards, but are regulated by the local air districts using a risk-based approach. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) was enacted in September 1987. The project would not be considered a stationary source subject to AB 2588 requirements.

The BAAQMD uses a health risk assessment to determine what stationary sources to control as well as the degree of control. If the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or stationary modified source would pose a potential public health risk, then the applicant would be subject to a health risk assessment for the source in question. Such an assessment also evaluates the chronic and acute hazards and the potential increased cancer risk stemming from exposure to a change in airborne TACs. The BAAQMD has found as part of its 2010 Clean Air Plan that the estimated lifetime cancer risk (70-year lifespan) from regional exposure to all air toxics combined declined from 1,330 cases per million in 1990 to 405 cases per million people in 2008 (BAAQMD, 2010b). Diesel particulate matter (DPM) is classified as a TAC, and statewide and local programs focus on managing this pollutant because many toxic compounds adhere to diesel exhaust particles.

Sensitive Receptors. Residential areas, day care centers, hospitals, and schools are some examples of sensitive receptors. The BAAQMD defines sensitive receptors as facilities or land uses that include mem-

bers of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses (BAAQMD, 2012).

Rules and Regulations

Federal Clean Air Act (CAA). The CAA originally established the NAAQS in 1970 for the criteria air pollutants considered to be the most prevalent and known to be hazardous to human health. The Federal CAA requires states exceeding the standards to prepare air quality plans showing how the standards will be met. The Federal CAA Amendments of 1990 expanded the role of the USEPA to set nationwide emissions standards for sources toxic air contaminants and specific categories of sources.

California Clean Air Act. The California CAA requires each region to develop and implement strategies to attain CAAQS and establishes broad authority for California to regulate emissions from mobile sources. Local air districts, including the BAAQMD, must periodically prepare air quality management plans showing how the standards will be met.

USEPA/CARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the state ambient air quality standards. Off-road mobile sources include construction equipment, marine vessels, and harbor craft. Tier 1, Tier 2, Tier 3, and Tier 4 standards for large compression-ignition engines used in off-road mobile sources began to go into effect in California in 1996, 2001, 2006, and 2008, respectively. In addition, construction equipment can be retrofitted to achieve lower emissions using the CARB-verified retrofit technologies. The engine standards and ongoing separate rule-making for marine vessels and harbor craft jointly address NOx emissions and toxic diesel particulate matter (DPM) throughout the State.

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

Bay Area Air Quality Management District and Regional Air Quality Management Plans. Responsibility for developing regional air quality management plans lies with the BAAQMD. The local air district also has the authority to issue permits through its rules and regulations by requiring that new stationary sources be subject to New Source Review (NSR) under BAAQMD Regulation II (Permits). The NSR program ensures that the new stationary sources would not interfere with progress to attain the ambient air quality standards. No stationary sources would be associated with the Proposed Project or subject to permitting. Emissions from mobile and portable sources and temporary activities (such as construction) are managed through the state and federal programs that control motor vehicle emissions and set performance standards for diesel engines that power the equipment.

The BAAQMD periodically prepares and updates the regional air quality management plans to show how the district intends to achieve ambient air quality goals. These plans usually include measures to reduce air pollution emissions from industrial, area, mobile and other sources. In 2001, the Ozone Attainment Plan was prepared for the Bay Area as part of the State Implementation Plan to achieve the ozone standards. Later in 2005, the Bay Area Ozone Strategy was prepared to detail how the BAAQMD will achieve the State 1-hour ozone standard. The BAAQMD 2010 Clean Air Plan establishes the programs and schedule for the following integrated goals, to: attain air quality standards; reduce population exposure and protecting public health in the Bay Area; and reduce greenhouse gas emissions and protect the climate (BAAQMD, 2010b).

The BAAQMD's Board of Directors adopted thresholds of significance and CEQA Air Quality Guidelines in June 2010, but as a result of a March 2012 judicial action, the BAAQMD no longer recommends that thresholds in the 2010 guidelines be used as a generally applicable measure of significant impacts.[3] The updated May 2012 BAAQMD CEQA Air Quality Guidelines (BAAQMD, 2012) include recommendations for analysis procedures, and as part of the threshold of significance justifications, the BAAQMD has also prepared detailed documentation to support use of the thresholds of significance (BAAQMD, 2010a).

BAAQMD Proposed 2010 Thresholds of Significance. The BAAQMD developed the following thresholds in advance of adopting guidelines in 2010. Although these thresholds are not a generally applicable measure of significant impacts, this analysis presents the BAAQMD's proposed 2010 thresholds for informational purposes (BAAQMD, 2010a). For criteria air pollutant emissions, a project during construction may cause a significant impact if it would:

- Emit more than 54 pounds per day (lb/day) of reactive organic gases (ROG) or volatile organic compounds (VOC);
- Emit more than 54 lb/day of nitrogen oxides (NOx);
- Emit more than 82 lb/day of PM10 from exhaust; or
- Emit more than 52 lb/day of PM2.5 from exhaust.

Similar thresholds exist for a project during operation along with a threshold for localized concentrations of CO greater than 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average). For PM10 and PM2.5 related to construction fugitive dust, the BAAQMD proposed that projects should include best management practices (BMPs) rather than achieve specific emissions thresholds. The BMPs are construction emissions control measures that appear in the BAAQMD CEQA Guidelines, Updated May 2012 (BAAQMD, 2012; Table 8-1 and Table 8-2).

The BAAQMD's proposed thresholds for community risk and hazards (BAAQMD, 2010a) specify that a project may cause a significant impact if the emissions create:

- Increased incremental cancer risk greater than 10.0 in a million;
- Increased non-cancer hazard greater than 1.0 Hazard Index for chronic or acute hazards;
- Incremental increase of annual average PM2.5 concentration greater than 0.3 $\mu g/m^3$ from a single source.

The BAAQMD CEQA Guidelines, Updated May 2012 (BAAQMD, 2012), notes that construction-related TAC emissions from on-road haul trucks and off-road equipment exhaust emissions are of a variable nature. Construction TAC emissions occur over a temporary timeframe, especially when considering the short amount of time such equipment is typically within an influential distance of sensitive receptors. In addition, current models and methodologies for conducting health risk assessments are associated with generally long-term exposure periods (e.g., 9, 40, or 70 years), which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of construction-phase health risk.

[3] The BAAQMD describes the status of its CEQA Guidelines at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.

Applicant Proposed Measures

PG&E proposes to implement measures during the design, construction, and operation of the Proposed Project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the Proposed Project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the Proposed Project as described in this document, including this project description and the APMs, as well as any adopted mitigation measures identified by this Initial Study (see Table 5.3-4).

Table 5.3-4. Applicant Proposed Measures (APMs) Related to Air Quality

APM Number	Issue Area
	Air Quality
APM AQ-1	Minimize Fugitive Dust. Consistent with Table 2 of the [1999] BAAQMD CEQA Guidelines, PG&E will minimize dust emissions during construction by implementing the following measures: ▪ Water all active construction areas at least twice daily. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. ▪ Pave, apply water three times daily, or apply (non-toxic) soilstabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites. ▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. ▪ Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's phone number will also be visible to ensure compliance with applicable regulations. Since these measures are consistent with the BAAQMD CEQA Guidelines, construction emissions are considered to be less than significant (BAAQMD, 1999; BAAQMD, 2012c). Note that implementation of the first measure listed above would not apply to paved areas with no exposed soil or when rains are occurring.
APM AQ-2	Minimize Construction Exhaust Emissions. The following measures will be implemented during construction to further minimize the less-than-significant construction exhaust emissions: ▪ Encourage construction workers to take public transportation to the project site where feasible. ▪ Minimize construction equipment exhaust by using low-emissions or electric construction equipment where feasible. Develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used would achieve a project-wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. ▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of five consecutive minutes required by regulation (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine will be shut off. ▪ Minimize welding and cutting by using compression or mechanical applications where practical and within standards. ▪ Encourage use of natural gas or electric powered vehicles for passenger cars and light-duty trucks where feasible and available.

Table 5.3-4. Applicant Proposed Measures (APMs) Related to Air Quality

APM AQ-3	Minimize Potential Naturally Occurring Asbestos (NOA) Emissions. The following measures will be implemented prior to and during construction to minimize the potential for NOA emissions: ▪ Prior to commencement of construction, samples of the Potrero Switchyard construction area will be analyzed for presence of asbestos, serpentinite or ultramafic rock ▪ If asbestos, serpentinite or ultramafic rock is determined to be present, implement all applicable provisions of the Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (17 CCR 93105), including: *For disturbed areas of 1.0 acre or less:* – Construction vehicle speed at the work site will be limited to 15 miles per hour or less – Prior to any ground disturbance, sufficient water will be applied to the area to be disturbed to prevent visible emissions from crossing the property line – Areas to be graded or excavated will be kept adequately wetted to prevent visible emissions from crossing the property line – Storage piles will be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile – Equipment will be washed down before moving from the property onto a paved public road – Visible track-out on the paved public road will be cleaned using wet sweeping or a High Efficiency Particular Air filter equipped vacuum device within 24 hours *For disturbed areas of greater than 1.0 acre:* – Submit an Asbestos Dust Mitigation Plan to the BAAQMD and obtain approval prior to commencement of construction – Implement and maintain the provisions of the approved Asbestos Dust Mitigation Plan from the beginning of construction through the duration of the construction activity

5.3.2 Environmental Impacts and Mitigation Measures

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

NO IMPACT. The BAAQMD is the primary agency responsible for managing local air quality and administering other California and federal programs ensuring implementation of the air quality management plan. A project could be inconsistent with the applicable air quality management plan or attainment plan if it could cause population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the air quality attainment plan. The Proposed Project would not create any new permanent full-time or part-time jobs. Local and existing PG&E crews would commute to the project area as needed for operation or maintenance, and contracted crews would be drawn from existing service providers for stand-by marine transportation and technical support for maintenance of the underwater components. Regional air quality plans anticipate some growth, and this anticipated growth includes the addition of some new infrastructure, such as additions to the electric transmission system. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. No impact would occur, and no mitigation is required.

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

LESS THAN SIGNIFICANT WITH MITIGATION – CONSTRUCTION. Emissions during the construction phase would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards. The Proposed Project involves construction of a transmission line approximately 3.5 miles in total length, including approximately 2.5 miles to be installed offshore in the San Francisco Bay, 0.4 miles to be installed in horizontal directional drills (HDD) between the transition points on land and the bay, and approximately 0.6 miles to be installed underground in paved areas. Construction equipment that would be used for the Proposed Project is shown in Table 4-4 in Section 4.11.9 (Project

Description). The construction workforce is also described in detail in this section. The number of employees would peak at approximately 75 construction personnel, including switchyard workers, supervisors, and inspectors.

During construction, emissions would be generated along the proposed transmission line route, at the proposed work sites, at the substation and switchyard sites, and along the roadways used to access these locations. Construction emissions would be caused by exhaust from vehicles and equipment (e.g., ozone precursors [volatile organic compounds and NOx], CO, and particulate matter [PM10 and PM2.5]) and fugitive dust/particulate matter from ground-disturbing activities. Diesel and gasoline-powered construction equipment at work sites would include loaders, graders, backhoes, cranes, demolition equipment, and trucks for lifts, delivery, concrete, water, and work crews. Outside of work sites, exhaust emissions would be caused by vehicles transporting equipment and supplies to the sites, trucks removing debris, and workers commuting to and from work sites.

Emission calculation spreadsheets (see Appendix A) describe the methodology for the emission estimates, which rely on factors from the CARB EMFAC2011 model and the California Emissions Estimator Model (CalEEMod), and other resources. Emissions for each phase and for each month of proposed activity are summarized in Appendix A as part of the detailed emission calculations based on the proposed quantities and types of equipment (PG&E, 2013).

Table 5.3-5 shows the results of the estimated average daily construction emissions using equipment that meets USEPA/CARB Tier 2 off-road and marine engine standards. Table 5.3-6 summarizes estimated maximum daily emissions for each year of proposed construction.

Table 5.3-5. Estimated Average Daily Construction Emissions including Mitigation for Tier 2 Equipment (lb/day)

Construction Duration Emissions	NOx	VOC	PM10 (exhaust)	PM2.5 (exhaust)	CO	SOx
Average Daily Emissions	31.69	13.67	9.68	3.37	19.71	1.36
Significance Threshold	54	54	82	54	None	None

Source: See Appendix A for detailed calculations (PG&E, 2013).

Table 5.3-6. Estimated Maximum Daily Construction Emissions including Mitigation for Tier 2 Equipment (lb/day)

Emissions by Year	NOx	VOC	PM10	PM2.5	CO	SO_x
Maximum Daily Emissions 2014	118.24	28.57	75.60	19.18	67.04	0.86
Maximum Daily Emissions 2015	1,329.46	272.33	74.50	49.99	946.40	99.22

Source: See Appendix A for detailed calculations (PG&E, 2013).

Fugitive dust impacts would be avoided by implementing the APMs in Table 5.3-4. Instead of specific, quantified significance thresholds for fugitive dust, the BAAQMD guidelines include recommended measures for dust control. The BMPs in the BAAQMD CEQA Guidelines are incorporated into APM AQ-1 (Minimize Fugitive Dust), APM AQ-2 (Minimize Construction Exhaust Emissions), and APM AQ-3 (Minimize Potential Naturally Occurring Asbestos Emissions). With the implementation of these APMs, the project would comply with all of the BAAQMD's recommended BMPs for fugitive dust, and the impact of fugitive dust during construction would be less than significant.

Table 5.3-5 shows that by using equipment that meets Tier 2 off-road and marine engine standards, construction would not result in average daily emissions exceeding the significance thresholds. Reducing

equipment exhaust emissions would occur through APM AQ-2, which incorporates BAAQMD recommendations to minimize emissions. This APM limits idling, requires use of low-emissions vehicles, encourages carpooling, minimizes welding and cutting, and promotes the use of alternative fueled vehicles. However, APM AQ-2 does not clearly specify the achievable level of emissions controls for potential construction equipment. Mitigation Measure A-1 (Achieve minimum emission standards) would be necessary to achieve the emission levels stated in Table 5.3-5. Mitigation Measure A-1 would supplement APM AQ-2 by requiring proper maintenance and tuning of construction equipment and by specifying emissions performance standards that are feasibly achievable and consistent with the emission calculations that appear in PG&E's application, shown in Appendix A (PG&E, 2013).

With the implementation of the APMs for air quality and Mitigation Measure A-1, emissions from the Proposed Project would not exceed the significance thresholds, and the project would comply with the dust control measures recommended by BAAQMD. With mitigation, construction-related emissions would not substantially contribute to any air quality violation, and this impact would be less than significant.

Mitigation Measures for Construction-Phase Air Quality

MM A-1 **Achieve minimum emission standards.** This measure incorporates and supplements portions of APM AQ-2, Minimize Construction Exhaust Emissions. PG&E shall maintain all construction equipment properly in accordance with manufacturer's specifications, and ensure that equipment is checked by a certified visible emissions evaluator. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1). All marine commercial harbor craft, except gasoline-powered small craft, shall meet at a minimum the Tier 2 Marine Engine Emission Standards (CCR Title 17, Sec. 93118.5).

LESS THAN SIGNIFICANT – OPERATION AND MAINTENANCE. Monitoring and control functions for the new facilities would be connected to the existing PG&E computer system by telecommunications. PG&E's existing local maintenance and operations group would assume monitoring and control duties and maintenance, inspection, and security roles, as needed, with support from a marine contractor. Aside from contracted stand-by marine transportation and technical support, no additional staff would be hired by PG&E after the transmission project is energized and placed into service. Operation of the project would not result in an incremental increase in O&M emissions and would not conflict with air quality plans or violate an air quality standard. Therefore, the air quality impact from the operational phase of the project would be less than significant.

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

LESS THAN SIGNIFICANT WITH MITIGATION – CONSTRUCTION. As noted in Table 5.3-2 (Attainment Status for BAAQMD), the region is currently designated as "nonattainment" for ozone, PM10, and PM2.5. Concurrent construction of other projects in close proximity to the Proposed Project would result in increased local air quality impacts for the duration of simultaneous construction activities. The list of cumulative projects and a detailed cumulative impact assessment appear in Section 5.19.1 and Section 5.19.2, respectively. Emissions generated by construction of the Proposed Project would be temporary and variable and would be similar in nature to emissions from other typical and nearby construction activities. Simultaneous construction of City projects and other cumulative projects in close proximity to

the project work sites would generally be subject to the San Francisco Dust Control Ordinance and would be likely to implement general BAAQMD recommendations for minimizing air quality impacts. All activities must comply with BAAQMD rules regarding dust control. Table 5.3-5 shows that construction-related criteria air pollutants would not exceed thresholds that indicate cumulatively considerable levels. Therefore, with the implementation of APMs AQ-1 through AQ-3 and Mitigation Measure A-1 (Achieve minimum emission standards), construction of the project would not result in a cumulatively considerable net increase of any criteria pollutants for which the project region in is nonattainment, and the construction impacts with mitigation would be less than significant under this criterion.

LESS THAN SIGNIFICANT – OPERATION AND MAINTENANCE. Item (b) above notes that operational emissions would result from limited vehicle use related to periodic maintenance, repair, and inspection of the project components, and that the emission levels would be below the BAAQMD thresholds. This would not result in a cumulatively considerable net increase of any criteria pollutant, and impacts would be less than significant.

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

LESS THAN SIGNIFICANT WITH MITIGATION. Construction would generate toxic air contaminants routinely found in the exhaust of gasoline powered motor vehicles and of diesel-fueled equipment, including diesel particulate matter (DPM). Residences, the Bright Horizons/Marin Day School day care center at Hills Plaza, and other sensitive receptors near the anticipated work areas would be temporarily exposed to increased concentrations of DPM and other toxic air pollutants from the construction-related mobile sources. Maps of surrounding land uses are in Section 5.10, Land Use (see Figure 5.10-1 and Figure 5.10-2).

Construction-phase emission rates for all portions of the underground, submarine, and switchyard construction are summarized in Table 5.3-5, and the pollutants include diesel particulate matter (DPM), shown as PM2.5 exhaust and VOC, which includes other air toxics common to diesel use. Emissions of DPM would occur at an average rate of 3.5 lb/day, from sources spread along the total transmission line route of 3.5 miles; this would include sources operating in the open water far from sensitive receptors. Appendix A includes detailed emission calculations and the quantities and types of equipment.

Sensitive receptors occur along the northern portion of the proposed underground construction route. High-density residential development and day care use occur along Spear and Folsom Streets and near the HDD area where the northern portions of project construction would occur. The Bright Horizons/ Marin Day School day care center at Hills Plaza has an outdoor play area for children adjacent to the sidewalk on Spear Street, and could be within about 25 feet of underground construction activity. Street-level residential lofts and townhomes at 400 Spear Street would also be within 25 feet of underground construction activity and the northern HDD transition work area. The other residential uses in the northern onshore section are typically apartment or condominium towers, often with commercial use at street level. This places most residences above the street, at higher elevations where lower levels of pollutants typically occur. No schools or hospitals are located within 1,000 feet of the existing Potrero Switchyard.

Excavation of trenches and other underground utility construction would potentially expose sensitive receptors to construction-related emissions, including emissions of DPM and other toxic air contaminants, which would expose the receptors to increased health risk and hazards. Activities along the northern portion of the route through Rincon Hill would be most intense at the Embarcadero Substation and at the HDD area on Spear Street, where 24-hour work could occur. Underground transmission line work would occur over approximately 8 months during daytime hours, and construction at any one work site

would last a much shorter time, as construction would progress at approximately 150-300 feet per day. The construction-related emissions would be sporadic as the different phases of construction would pass near receptors during the short-term. The linear nature of the work ensures that sensitive receptors near the HDD transition area would experience increased pollutant concentrations for a few months. Other residences and the day care facility along the route would experience much shorter durations of increased pollutant concentrations, up to about 9 days for each phase, as the various phases pass each location (Section 4.11.8, Construction Phasing).

PG&E would implement APM AQ-1 for fugitive dust control and APM AQ-2 to control the emissions from construction equipment fleet by using low-emissions technologies, such as newer engines, retrofit engines, add-on devices including particulate filters, or use of electric grid power instead of diesel fuel where feasible. Emissions of naturally occurring asbestos would be controlled by implementing APM AQ-3. These measures would reduce the potential for exposure to substantial pollutant concentrations during construction. Because of the proximity of sensitive receptors to the construction sites, and because of the need to clearly specify the achievable level of emissions controls, additional mitigation (Mitigation Measure A-1 to achieve minimum emission standards) is recommended to supplement APM AQ-2 and achieve feasible levels of control of diesel exhaust, which would ensure that receptors would not be exposed to substantial concentrations of DPM or other toxic air contaminants. These measures would reduce the construction phase impacts to a less than significant level. During project operations, emissions would result from limited use of vehicles for routine maintenance, repair, and inspection that would not expose sensitive receptors to substantial concentrations of air pollutants. Impacts under this criterion would be less than significant.

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

LESS THAN SIGNIFICANT. The project would not include any sources likely to create objectionable odors. Project construction would involve the temporary use of vehicles and construction equipment and materials, such as drilling fluids, that may generate intermittent, minor odors. Emissions of this nature would occur briefly during construction and would cease as the construction activity would move through phases and between work areas. There would be no notable impact of objectionable odors affecting a substantial number of people. Impacts would be less than significant.

This page intentionally blank.