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4.3 AIR QUALITY AND GREENHOUSE GASES

Would the Project:		Potentially Significant Impact	Potentially Significant Unless APMs 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?	☐	☐	☑	☐
f.	Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

4.3.1 Introduction

This section describes existing air quality resources in the vicinity of the Proposed Project and assesses potential air quality impacts that would occur as a result of the Proposed Project, particularly for short-term construction activities and long-term operations. In addition, this

section evaluates the Proposed Project for air quality impacts resulting from non-conformity with applicable air quality plans and violation of ambient air quality standards (AAQS).

For the purpose of the air quality analysis, all of the components of the Proposed Project are treated as a single project. These components include constructing the new 230 kV transmission line between the Sycamore Canyon and Peñasquitos Substations; upgrades to the existing 230 kV transmission lines; relocation and upgrading of the existing 138 kV power lines; relocation and upgrading of the existing 69 kV power lines; and modifications at the Sycamore Canyon and Peñasquitos Substations. Because the entire Proposed Project would be located within the San Diego Air Basin, and because emissions from all of Proposed Project components have the potential to affect air quality within the San Diego Air Basin, it is appropriate to analyze total impacts from the entire Proposed Project rather than to separate out the analysis by component. Additionally, the impact on climate from greenhouse gas (GHG) emissions related to the entire Proposed Project is assessed.

The Proposed Project would have no impact relating to conflicts with the applicable plan for reducing GHG emissions. Impacts would be less than significant during construction and operations for generating GHG emissions, either directly or indirectly. Impacts would be less than significant and temporary during construction and would have no impact during operations for all other categories.

4.3.2 Methodology

Federal, state, and regional/local regulations and policies were consulted to determine the Proposed Project's level of compliance with, and potential impacts to, applicable air quality plans and/or standards. Information for this section was obtained from Internet searches of federal, state, and regional/local websites. Refer also to Appendix 4.3-A, Air Quality Assessment, for additional discussion of the methods used to predict air quality impacts resulting from the Proposed Project.

This analysis of air quality impacts used the latest version of the California Emissions Estimation Model (CalEEMod), Version 2013.2. CalEEMod contains emissions factors from the California Air Resources Board (CARB)'s OFFROAD Model for heavy construction equipment and CARB's EMFAC2011 Model for on-road vehicles. This analysis covers construction in the short term and operation and maintenance in the long term. The model also calculates GHG emissions from construction and operation and maintenance.

4.3.3 Existing Conditions

This section describes the regulations and regulatory agencies that have jurisdiction over the Proposed Project, regional climate and meteorology, and existing air quality conditions in the area.

4.3.3.1 Air Quality Regulatory Setting

Federal

National air quality policies are regulated through the Federal Clean Air Act (FCAA) of 1970 and its 1977 and 1990 amendments. Pursuant to the FCAA, the U.S. Environmental Protection

Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for criteria air pollutants, which include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2, which is a form of nitrogen oxides known as NO_X), sulfur dioxide (SO_2, which is a form of sulfur oxides known as SO_x), particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively), and lead. These pollutants are referred to as criteria pollutants because USEPA has established numerical criteria that define acceptable levels of exposure for each pollutant. USEPA has revised the NAAQS several times since their original implementation, and will continue to do so as the health effects of exposure to air pollution are better understood.

USEPA designates federal nonattainment areas if they have not achieved the NAAQS. Under the 1977 amendments to the FCAA, states with air quality that did not achieve the NAAQS were required to develop and maintain state implementation plans (SIPs). These SIPs constitute a federally enforceable definition of the state's approach and schedule for the attainment of the NAAQS. Air quality management areas were designated as attainment, nonattainment, or unclassified for individual pollutants, depending on whether they achieve the applicable NAAQS and California Ambient Air Quality Standards (CAAQS) for each pollutant. In addition, California can designate areas as transitional. Because the NAAQS and CAAQS differ in many cases, it is possible for an area to be designated attainment by USEPA (meets NAAQS) and nonattainment by California (does not meet CAAQS) for the same pollutant.

Nonattainment areas under different classifications have different deadlines to achieve the NAAQS. Extreme nonattainment areas are subject to a deadline of June 2024 to attain the NAAQS for O_3. Severe-15 nonattainment areas are subject to a deadline of June 2019 to attain the NAAQS for O_3. Serious nonattainment areas were subject to a deadline of June 2013 to attain the NAAQS for O_3. There are no areas that are currently designated as "severe-17" nonattainment areas for the NAAQS for O_3. Areas that lack monitoring data are designated as unclassified areas. Unclassified areas are treated as attainment areas for regulatory purposes.

State

CARB was created in 1967 by merging the California Motor Vehicle Pollution Control Board with the Bureau of Air Sanitation and its Laboratory. Under the FCAA, states may enact their own statewide air quality regulations and standards, provided that they are at least as stringent as the FCAA. In 1988, the California Clean Air Act (CCAA) was enacted to regulate air quality within California. CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. Its responsibility lies with ensuring implementation of the CCAA, responding to FCAA requirements, and regulating pollutant emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions.

The CCAA established the CAAQS and a legal mandate to achieve these standards by the earliest practicable date. These standards apply to the same criteria pollutants as the NAAQS, but also include sulfate, visibility, hydrogen sulfide, and vinyl chloride.

Local

CARB designated San Diego County as a discrete air basin under the jurisdiction of San Diego Air Pollution Control District (SDAPCD). In addressing its planning role with respect to the NAAQS, SDAPCD most recently developed an Ozone Redesignation Request and Maintenance

Plan, which served as the basis for USEPA's re-designation of the San Diego Air Basin as an attainment zone for the 1-hour ozone standard on July 28, 2003. As of April 30, 2012, the San Diego Air Basin has been designated as a marginal nonattainment area for the 8-hour ozone standard.

The Regional Air Quality Strategy (RAQS) was established by SDAPCD in 1991 to address state air quality planning requirements (focusing on O_3). The latest revision was published on April 22, 2009. SDAPCD is responsible for overall development and implementation of the RAQS. RAQS control measures focus on emissions sources under SDAPCD's authority, specifically, stationary emissions sources and some area-wide sources. However, the emissions inventories and emissions projections in the RAQS reflect the impact of all emissions sources and all control measures, including those under the jurisdiction of CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products) and USEPA (e.g., aircraft, ships, trains, and pre-empted off-road equipment). While legal authority to control different pollution sources is separated, SDAPCD is responsible for reflecting federal, state, and regional/local measures in a single plan to achieve ambient air quality standards in San Diego County.

To evaluate the potential for stationary sources to cause or contribute to a violation of an air quality standard, SDAPCD established emissions thresholds in its Rules 20.2 and 20.3 on New Source Review. If emissions from a stationary source exceed the thresholds established in these rules, further evaluation must be conducted to assess whether the source would cause or contribute to a violation of an air quality standard. SDAPCD has not established rules for characterizing impacts from construction. However, SDAPCD informally recommends quantifying construction emissions and comparing them to significance thresholds found in the SDAPCD regulations for stationary sources (Rule 20.2 et seq.) and shown in Table 4.3-1, Air Pollution Control District's Screening Level Thresholds. If construction-phase emissions exceed these thresholds for a stationary-source air-quality-impact analysis, then construction has the potential to violate air quality standards or to contribute substantially to existing violations. Significance thresholds are shown in Table 4.3-1. While this PEA uses these thresholds as a guide, this PEA also evaluates if other substantial evidence, in light of the whole record, indicates that the Proposed Project could have a significant air quality impact, including proximity of sensitive receptors. This additional evaluation provides a conservative analysis of the Proposed Project's air quality impacts.

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Table 4.3-1: Air Pollution Control District's Screening Level Thresholds

Pollutant	Pounds per Day
Carbon Monoxide (CO)	550
Oxides of Sulfur (SO_X)	250
Volatile Organic Compounds (VOCs)	75
Oxides of Nitrogen (NO_X)	250
Particulate Matter (PM_{10})	100
Particulate Matter ($PM_{2.5}$)	55

Notes:
The San Diego County Air Pollution Control District does not have thresholds of significant for VOCs or $PM_{2.5}$. As such, VOC and $PM_{2.5}$ thresholds from the South Coast Air Quality Management District were used.

Source: *SDAPCD, 1995.*

4.3.3.2 Greenhouse Gases and Global Climate Change Regulatory Setting

Global climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Global climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere.

Different GHGs have varying global warming potentials. Global warming potential is the effectiveness of a gas or aerosol to trap heat in the atmosphere. According to USEPA, global warming potential is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for global warming potential is carbon dioxide (CO_2); therefore, CO_2 has a global warming potential of 1. The other main GHGs that have been attributed to human activity include methane (CH_4), which has a global warming potential of 21, and nitrous oxide (N_2O), which has a global warming potential of 310. Table 4.3-2, Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases, presents the global warming potential and atmospheric lifetimes of common GHGs. Please note that USEPA has subsequently added nitrogen tri-fluoride to the list of regulated GHGs.

Table 4.3-2: Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	21	12 ± 3
Nitrous Oxide	N_2O	310	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Source: *United Nations Framework Convention on Climate Change, Global Warming Potentials, 2013.*

SDG&E Programs

SDG&E has been engaged for many years in activities to reduce GHG emissions. These activities include programs to increase energy efficiency, and efforts to meet the Renewables Portfolio Standard of 33 percent by 2020. In 2011, 20.8 percent of SDG&E's retail sales were from renewable energy sources.

SDG&E submits a mandatory Long-Term Procurement Plan (LTPP) to the CPUC that describes its strategy for meeting forecasted load during the next 10 years. The LTPP must be consistent with the "loading order" prescribed in the CEC's Energy Action Plan to meet growth first with conservation, then with renewable sources of electricity, and finally with new fossil-fueled sources to the extent necessary. New generation sources must be consistent with the LTPP. The CPUC approved SDG&E's most recent LTPP in September 2008.

The LTPP includes the following programs to reduce GHG emissions:

- Energy efficiency, which will reduce needed capacity by 487 MW by 2016;
- Demand response, which will reduce needed capacity by 249 MW by 2016;
- Renewables, which will provide 318 MW in 2010, and 727 MW in 2016; and
- New peaker plants to back up intermittent renewables and support retirement of older plants.

Forecasted reductions from these programs are greater than 1.5 million metric tons (MMT) carbon dioxide equivalent (CO_2e) per year. These efforts will reduce carbon intensity by one-third while accommodating continued population growth and will ensure consistency with the applicable plans, policies, and regulations adopted by California to reduce GHG emissions.

Federal

Endangerment Finding

On April 17, 2009, the USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the FCCA:

> **Endangerment Finding:** USEPA found that the current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) in the atmosphere threaten the public health and welfare of current and future generations.
>
> **Cause or Contribute Finding:** USEPA found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing USEPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by USEPA and the DOT's National Highway Safety Administration on September 15, 2009.

Mandatory Reporting of Greenhouse Gases, 40 CFR Part 98

USEPA's rule entitled Mandatory Reporting of Greenhouse Gases (40 CFR Part 98) requires mandatory reporting of GHGs for certain facilities. Subpart DD of the rule, titled Electrical Transmission and Distribution Equipment Use, applies to SF_6 reporting from gas insulated substations.

Under the final Mandatory Reporting Rule for Additional Sources of Fluorinated GHGs, owners and operators of electric power system facilities with a total nameplate capacity that exceeds 17,820 pounds (lbs) (7,838 kilograms) of SF_6 and/or PFCs must also report emissions of SF_6 and/or PFCs from the use of electrical transmission and distribution equipment. Owners or operators must collect emissions data, calculate GHG emissions, and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

The rule requires that each electric power system facility must report total SF_6 and PFC emissions (including emissions from equipment leaks, installation, servicing, decommissioning, and disposal, and from storage cylinders) from the following types of equipment:

- Gas-insulated substations;
- Circuit breakers;
- Switchgear, including closed-pressure and hermetically sealed-pressure switchgear;
- Gas-insulated lines containing SF_6 or PFCs;
- Gas containers such as pressurized cylinders;
- Gas carts;
- Electric power transformers; and
- Other containers of SF_6 or PFCs.

Only the Proposed Project's transmission circuit breakers would contain SF_6. The capacity of SDG&E's overall electric power system facilities exceeds 17,820 lbs. SDG&E therefore would report on SF_6 from the Proposed Project's circuit breakers as part of its overall reporting under Subpart DD.

Facilities subject to Subpart DD began monitoring GHG emissions on January 1, 2011, in accordance with the methods specified in Subpart DD. The deadline for reporting is March 31 of each year, unless that date falls on a weekend, in which case the report is due the next business day.

State

California Health and Safety Code Section 38505(g) defines GHGs as any of the following compounds: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

In the State of California GHG Inventory, CARB compiled statewide anthropogenic GHG emissions and sinks, which include processes that uptake GHG emissions (see Table 4.3-3, State

of California Greenhouse Gas Emissions by Sector). The inventory includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers 1990 to 2008, and is summarized in Table 4.7-3. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. Calculation methodologies applied are consistent with guidance from the Intergovernmental Panel on Climate Change (IPCC). The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. CARB's original inventory was divided into seven broad sectors and categories, which include Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation. The latest inventory includes GHG emissions from recycling and waste management, high-global warming potential gas emissions, and reductions in GHG emissions related to forestry (forestry sinks).

Table 4.3-3: State of California Greenhouse Gases Emissions by Sector

Sector	Total 1990 Emissions ($MMTCO_2e$)[1]	Percent of Total 1990 Emissions	Total 2008 Emissions ($MMTCO_2e$)	Percent of Total 2008 Emissions
Agriculture	23.4	5%	28.06	6%
Commercial	14.4	3%	14.68	3%
Electricity Generation	110.6	26%	116.35	25%
Forestry (excluding sinks)	0.2	<1%	0.19	<1%
Industrial	103.0	24%	92.66	20%
Residential	29.7	7%	28.45	6%
Transportation	150.7	35%	174.99	37%
Recycling and Waste	-	-	6.71	1%
High Global Warming Potential Gases	-	-	15.65	3%
Forestry Sinks	(6.7)	-	(3.98)	-

Notes:
[1] $MMTCO_2e$ refers to million metric tons of carbon dioxide equivalent emissions.

Source: *CARB, 2007.*

The following subsections describe regulations and standards adopted by California to address global climate change issues.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed California Assembly Bill (AB) 32, the Global Warming Solutions Act, into law. Pursuant to AB 32, CARB adopted a comprehensive AB 32 Scoping Plan in December 2008, which outlined programs designed to achieve the 2020 GHG reduction goal of 174 MMT of CO_2e emissions through regulations, market mechanisms, and other actions.

For the electricity sector, the scoping plan adopted CPUC's fundamental recommendations for both investor-owned and publicly-owned utilities to continue and increase implementation of programs designed to reduce emissions, including energy efficiency programs, increasing the use of electricity supplies obtained from renewable generation sources to 33 percent by 2020, and adopting a cap and trade system to ensure an overall reduction of emissions from electric generation.

The AB 32 Scoping Plan Measure H-6 led to CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (17 CCR, Sections 95350-95359). CARB's SF_6 regulation sets the maximum emission rate for SF_6-containing equipment at 10 percent by 2011. The maximum allowable emission rate decreases by one percent each year. In 2020, the threshold will remain at one percent.

State Standards Addressing Vehicular Emissions

California AB 1493 (Pavley), enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. CARB adopted the regulations on September 24, 2009, to reduce GHG emissions in new passenger vehicles from 2009 through 2016. CARB has estimated that the regulations will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.

Senate Bills 1078 and 107 and Executive Order S-14-08

Senate Bill 1078 requires retail sellers of electricity to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the Renewables Energy Standard to 33 percent by 2020. In April 2011, the California legislature enacted Senate Bill 2X, which mandates the Renewables Portfolio Standard of 33 percent by 2020 for investor-owned and publicly-owned utilities.

Executive Order S-21-09

Executive Order S-21-09 directs CARB to work with the CPUC and CEC to implement the Renewables Portfolio Standard of 33 percent by 2020.

On May 5, 2011, CPUC adopted Order Instituting Rulemaking 11-05-005 to open a new proceeding for the Renewables Portfolio Standard.

CARB is also working with the CAISO and other load balancing authorities to address reliability, renewable integration requirements, and interactions with wholesale power markets. CARB has established a loading order in its Energy Action Plan for resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

4.3.3.3 Existing Air Quality and Climate Conditions

San Diego Air Basin Characteristics

One of the main determinants of the San Diego Air Basin's climatology is the Pacific High, a semi-permanent high-pressure center over the Pacific Ocean. In the summer, this pressure center is located well to the north, directing storm tracks north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation.

San Diego Air Basin Climate

The San Diego Air Basin's climate is characterized by warm, dry summers and mild, wet winters. The climate of San Diego, as with all of Southern California, is largely controlled by the strength and position of the Pacific High. This high-pressure ridge over the West Coast creates a repetitive pattern of frequent early morning cloudiness, hazy afternoon sunshine, clean daytime onshore breezes, and little temperature change throughout the year. Limited rainfall occurs in the winter when the oceanic high-pressure center is weakest and farthest south, as the fringes of mid-latitude storms occasionally move through the area. The average temperatures in January range from 47 degrees Fahrenheit (°F) at night to 63°F during the day. The warmest month is August, when the high temperatures average 74°F. The average annual rainfall is approximately 10 inches.

Temperature Inversion and Air Pollutant Concentrations

The onshore flow of marine air and nocturnal winds are accompanied by two characteristic temperature inversion conditions that control the rate of air pollution dispersal throughout the San Diego Air Basin. The daytime cool onshore flow is capped by a deep layer of warm, sinking air. Along the coastline, the marine air layer beneath the inversion cap is deep enough to accommodate any locally generated emissions. However, as the layer moves inland, pollution sources (especially automobiles) add pollutants from below without any dilution from above through the inversion interface. When this polluted layer approaches foothill communities east of coastal developments, it becomes shallower and exposes residents in those areas to concentrated pollution by-products from coastal area sources.

The same atmospheric conditions that create a desirable living climate combine to limit the atmosphere's ability to disperse air pollution generated by the large population attracted to the pleasant climate. Onshore winds across the coastline diminish quickly when they reach the foothill communities east of San Diego. The sinking air within the offshore high-pressure system forms a massive temperature inversion that traps air pollutants near the ground. The resulting horizontal and vertical stagnation, in conjunction with ample sunshine, causes a number of reactive pollutants to undergo photochemical reactions and form smog, which degrades visibility and irritates human tear ducts and nasal membranes. While programs to control emissions of air pollutants have substantially improved regional air quality within the last several decades, some parts of the San Diego Air Basin do not meet air quality standards.

Local Climate

Local meteorological conditions in the Proposed Project vicinity conform to the regional pattern of strong onshore winds by day (especially in the summer) and weak offshore winds at night (particularly during the winter). These local wind patterns are driven by the temperature difference between the ocean and the warm interior topography. In the summer, moderate daytime breezes of 8 to 12 miles per hour blow onshore and up through the valley from the southwest. Light onshore breezes may continue throughout the night when the land remains warmer than the ocean. In the winter, the onshore flow is weaker and the wind flow reverses to blow from the northeast in the evening as the land becomes cooler than the ocean.

Air Quality

CARB sets state air quality standards and monitors ambient air quality at approximately 250 air quality monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level. Therefore, air quality is often referred to in terms of ground-level concentrations. Ambient air pollutant concentrations in the San Diego Air Basin are measured at 10 air quality monitoring stations operated by SDAPCD.

For the air quality evaluation, data from the Kearny Mesa Monitoring Station, located at Kearny Villa Road in the City of San Diego, were used. This data included O_3, NO_2, PM_{10}, and $PM_{2.5}$. Data collected at this monitoring station are representative of the air quality experienced on-site from 2010 through 2012; refer to Table 4.3-3, Local Air Quality Levels. The Kearny Mesa Monitoring Station does not measure CO or SO_2, and the monitoring station commenced monitoring NO_2, $PM_{2.5}$ and PM_{10} in 2012. The Overland Avenue Monitoring Station measured NO_2, $PM_{2.5}$ and PM_{10} in 2010 and 2011; these data are presented in Table 4.3-3. The closest monitoring station to the site that measures CO and SO_2 is the downtown San Diego site. Data for CO and SO_2 from this monitoring station are presented in Table 4.3-3. The Kearny Mesa Monitoring Station is close enough to the Proposed Project area to provide accurate information about the environmental setting. The following air quality information briefly describes the various types of pollutants.

Ozone (O_3)

O_3 occurs in two layers of the atmosphere. The layer surrounding Earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric layer extends upward from about 10 to 30 miles, and protects life on Earth from the sun's ultraviolet rays (UV-B). In the troposphere, O_3 is a photochemical pollutant formed from reactions between volatile organic compounds (VOCs) and NO_X with the presence of sunlight, referred to as "photochemical smog." Therefore, VOCs and NO_X are O_3 precursors. VOCs and NO_X are emitted from various sources throughout the San Diego Air Basin. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Many respiratory ailments and cardiovascular disease are aggravated by exposure to high O_3 levels. O_3 also damages natural ecosystems (such as forests and foothill plant communities), agricultural crops, and some human-created materials (such as rubber, paint, and plastics).

Societal costs from O_3 damage include increased healthcare costs, loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Carbon Monoxide (CO)

Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources. It is a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause headaches, dizziness, and unconsciousness.

Nitrogen Dioxide (NO_2)

NO_X are a family of highly reactive gases that are a primary precursor to the formation of ground-level O_3, and react in the atmosphere to form acid rain. USEPA and CARB established AAQS for NO_2. NO_2 is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO_2 can irritate and damage lungs, and lower resistance to respiratory infections, such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Sulfur Dioxide (SO_2)

SO_2 is a colorless reactive gas that is produced from burning sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest SO_2 concentrations are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of airways, leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Particulate Matter (PM_{10})

PM_{10} refers to suspended particulate matter, which is smaller than 10 microns, or 10 one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate the lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the statewide 24-hour particulate matter standards based on requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($PM_{2.5}$)

Due to increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), federal and state $PM_{2.5}$ standards were created. Particulate matter impacts primarily affect infants, children, older adults, and those with pre-

existing cardiopulmonary disease. Due to its smaller size, $PM_{2.5}$ has the potential to lodge more deeply in the lungs than PM_{10}. USEPA and CARB have revised their AAQS for $PM_{2.5}$ to more stringent levels since the standards were originally proposed in 1997. Almost everyone in California is exposed to levels at or above the current state standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases, including reactive organic gases (ROGs) and VOCs. ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants. Other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Lead

Lead in the atmosphere occurs as particulate matter. Lead was historically emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are now the primary sources of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen.

Other Pollutants

CARB also set standards for four additional pollutants: sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These pollutants are generally not considered pollutants of concern in the San Diego Air Basin because there are no major sources that would contribute to ambient levels within the basin.

Toxic Air Contaminants (TACs)

Section 39655 of the California Health and Safety Code defines a toxic air contaminant (TAC) as an air pollutant that "may cause or contribute to an increase in mortality or an increase in serious illness, or [that] may pose a present or potential hazard to human health." Section 39657(b) of the California Health and Safety Code defines TACs to include 189 substances that have been listed as federal hazardous air pollutants under 42 U.S. Code [U.S.C.] Section 7412.

TACs can cause various cancers, depending on the particular chemicals, their type, and the duration of exposure. Additionally, some TACs may cause other health effects over the short or long term. The 10 TACs posing the greatest health risk in California are acetaldehyde, benzene, 1-3 butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchlorethylene, and diesel particulate matter.

Air Quality Designations

Three air quality designations can be given to an area for a criteria pollutant:

- Nonattainment: This designation applies when air quality standards have not been consistently achieved.
- Attainment: This designation applies when air quality standards have been achieved.
- Unclassified: This designation applies when insufficient monitoring data exists to determine a nonattainment or attainment designation.

Current NAAQS and CAAQS are summarized in Table 4.3-4, National and California Ambient Air Quality Standards. On April 15, 2004, USEPA formally replaced the 1979 one-hour ozone standard with a more stringent 8-hour standard as part of the Clean Air Rules of 2004. The San Diego Air Basin is currently designated as a nonattainment area for O_3 and PM.

Table 4.3-4: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	**Nonattainment**	NA	NA
	8 Hours	0.070 ppm (137 $\mu g/m^3$)	**Nonattainment**	0.075 ppm (147 $\mu g/m^3$)	**Marginal Nonattainment**
Particulate Matter (PM_{10})	24 Hours	50 $\mu g/m^3$	**Nonattainment**	150 $\mu g/m^3$	Attainment
	Annual Arithmetic Mean	20 $\mu g/m^3$	**Nonattainment**	NA	Attainment
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	No Separate State Standard		35 $\mu g/m^3$	Attainment
	Annual Arithmetic Mean	12 $\mu g/m^3$	**Nonattainment**	12.0 $\mu g/m^3$	Unclassified
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment
	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)[5]	Annual Arithmetic Mean	0.030 ppm (56 $\mu g/m^3$)	NA	0.053 ppm (100 $\mu g/m^3$)	Attainment
	1 Hour	0.18 ppm (338 $\mu g/m^3$)	Attainment	100 ppb	Attainment
Lead (Pb)[7,8]	30 days average	1.5 $\mu g/m^3$	Attainment	N/A	NA
	Calendar Quarter	N/A	NA	1.5 $\mu g/m^3$	Attainment
Sulfur Dioxide (SO_2)[6]	24 Hours	0.04 ppm (105 $\mu g/m^3$)	Attainment	N/A	Attainment
	3 Hours	N/A	NA	0.5 ppm (1300 $\mu g/m^3$)	Attainment
	1 Hour	0.25 ppm (655 $\mu g/m^3$)	Attainment	75 ppb (196 $\mu g/m^3$)	NA

Table 4.3-4 (cont.): National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Visibility-Reducing Particles[9]	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride[7]	24 Hour	0.01 ppm (26 µg/m^3)	Unclassified		

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in 17 CCR 70200.

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

[3] Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 millimeters (mm) of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The table presents primary standards with the exception of the 3-hour SO_2 standard, which is a secondary standard.

[5] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

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

[7] CARB has identified lead and vinyl chloride as "TACs" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[8] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[9] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standard, respectively.

Sources*: CARB, 2013a; USEPA, 2013.*

Ambient Air Quality

Violations of NAAQS and CAAQS for O_3 and PM have occurred historically in the Proposed Project area. The frequency of violations and current air quality conditions at the Kearny Mesa Monitoring Station are summarized in Table 4.3-5, Local Kearny Mesa Air Quality Levels. The Kearny Mesa Monitoring Station is the site nearest to the Proposed Project area, although the monitoring station is located in a more developed area that has multiple emissions sources compared to the Proposed Project transmission line route.

Table 4.3-5: Local Kearny Mesa Air Quality Levels

Pollutant	Standard (Maximum Allowable Amount)		Year[1]	Maximum Concentration[2]	Number of Days State/Federal Standard Exceeded
	California	Federal Primary			
1-hour Ozone (O_3)[1]	0.09 ppm for 1 hour	NA	2010 2011 2012	0.073 ppm 0.093 0.000	0/NA 0/NA 1/NA
8-hour Ozone (O_3)[1]	0.070 ppm for 8 hours	0.075 ppm for 8 hours	2010 2011 2012	0.061 ppm 0.083 0.076	0/0 2/1 3/1
1-hour Carbon Monoxide (CO)	20 ppm for 1 hour	35 ppm for 1 hour	2010 2011 2012	2.6 ppm 2.8 2.8	0/0 0/0 0/0
8-hour Carbon Monoxide (CO)	9.0 ppm for 8 hours	9 ppm for 8 hour	2010 2011 2012	2.17 ppm 2.44 1.81	0/0 0/0 0/0
Nitrogen Dioxide (NO_2)	0.18 ppm for 1 hour	0.100 ppm For 1 hour	2010 2011 2012	0.073 ppm 0.073 0.057	0/0 0/0 0/0
1-hour Sulfur Dioxide (SO_2)	75 ppb for 1 hour	NA	2010 2011 2012	0.013 ppm 0.008 ppm NM	0/0 0/0 NM/NM
24-hour Sulfur Dioxide (SO_2)	0.04 ppm for 24 hours	NA	2010 2011 2012	0.002 ppm 0.002 ppm NM	0/NA 0/NA NM/NA
Fine Particulate Matter ($PM_{2.5}$)[1, 2]	No Separate Standard	35 µg/m^3 for 24 hours	2010 2011 2012	18.7 µg/m^3 29.9 20.1	NA/0 NA/0 NA/0
Particulate Matter (PM_{10})[1, 2]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2010 2011 2012	33.0 µg/m^3 47.0 35.0	0/0 0/0 0/0

Notes: ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

[1] Maximum concentration is measured over the same period as the California standards.

[2] PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Sources: *CARB, 2013b; SDAPCD, 2013.*

4.3.3.4 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. According to the Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA, 2003), sensitive receptors include "hospitals, daycare centers, schools, work-sites, and residences."

For the purpose of this analysis, sensitive receptors include medical patients and older adults, athletes/children at public parks/playgrounds, long-term care/assisted living facilities, churches, schools, child care centers/homes, and athletic fields.

Sensitive populations (i.e., sensitive receptors) in proximity to localized sources of toxics and CO are of particular concern. Land uses that may include sensitive receptors include residences, residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Table 4.3-6, Locations that May Include Sensitive Receptors, lists the distances and locations where sensitive receptors may be found and that lie within 1 mile of the areas that would be affected by construction and operation of the Proposed Project, including the transmission line route. The closest land uses that may contain sensitive receptors would be residential land uses, some parks, and the Kids Bay Learning Center located adjacent (approximately 72 feet) to the Proposed Project Segment B.

Table 4.3-6: Locations that May Include Sensitive Receptors

Type	Name	Distance from Proposed Project Site (feet/miles)[1]	Direction from Proposed Project Site
Residential	Rancho Encantada, Scripps Miramar Ranch, Miramar Ranch North, Sabre Springs, Rancho Peñasquitos, Torrey Highlands, Pacific Highlands Ranch and Carmel Valley	varies	Residential communities listed surround the route
Schools	Kids Bay Learning Center	72 feet	North
	Mount Carmel High School	143 feet	West and Southwest
	The Innovations Academy	351 feet	South
	Cambridge School	528 feet	East
	Dingeman Elementary School	637 feet	South
	Torrey Hills School	950 feet	Southwest
	Ellen Browning Scripps Elementary School	970 feet	South
	Sage Canyon School	0.28 mile	Northwest
	Adobe Bluffs Elementary School	0.3 mile	Southeast
	Westview High School	0.4 mile	Southeast
	Black Mountain Middle School	0.4 mile	Southwest

Table 4.3-6 (cont.): Location that May Include Sensitive Receptors

Type	Name	Distance from Proposed Project Site (feet/miles)[1]	Direction from Proposed Project Site
Schools	Black Mountain Middle School	0.4 mile	Southwest
	Ocean Air Elementary School	0.5 mile	North
	Sunset Hills Elementary	0.5 mile	Southwest
	Morning Creek Elementary	0.55 mile	East
	Carmel Mountain Preschool	0.5 mile	Southwest
	Mesa Verde Middle School	0.65 mile	Southwest
	St. Gregory the Great Catholic School	0.65 mile	Northeast
	Creekside Elementary	0.7 mile	North Northeast
	Deer Canyon Elementary	0.8 mile	Southeast
Places of Worship	Mt Carmel Church of the Nazarene	50 feet	West
	Church of Jesus Christ of Latter Day Saints	150 feet	Southeast
	Taiwanese Lutheran Church	350 feet	East
	Carmel Mountain Church	450 feet	Southwest
	St Timothy's Episcopal Church	700 feet	East
	Saint Gregory the Great Catholic Church	0.4 mile	South Southwest
	New Hope Church of Peñasquitos	0.45 mile	Northeast
	Our Lady-Mt. Carmel Church	0.65 mile	Northeast
	Gethsemane Evangelical Church	0.9 mile	Northeast
Parks	Black Mountain Open Space Park	0 mile	Intersects and mostly to the East and North
	Torrey Hills Dog Park	0 mile	Located within the ROW
	Del Mar Mesa Preserve	0 mile	The Proposed Project is located within and traverses the Del Mar Mesa Preserve
	Los Peñasquitos Canyon Preserve	0 mile	The Proposed Project borders the NW boundary of the preserve
	Butterfly Gardens Mini Park	0 mile	Located within the ROW
	Hilltop Community Park	50 feet	West and Southwest

Table 4.3-6 (cont.): Location that May Include Sensitive Receptors

Type	Name	Distance from Proposed Project Site (feet/miles)[1]	Direction from Proposed Project Site
Parks	Black Mountain Ranch Community Park	139 feet	North Northwest
	Rancho Peñasquitos Skate Park	259 feet	East
	Spring Canyon Neighborhood Park	294 feet	South
	Torrey Hills Neighborhood Park	415 feet	West
	Torrey Del Mar Neighborhood Park	750 feet	South
	Cypress Canyon Neighborhood Park	850 feet	South
	Views West Park	0.3 mile	West southwest
	Scripps Ranch Community Park and Recreation Center	0.35 mile	South
	Sage Canyon Park	0.45 mile	Northwest
	Sabre Springs Park	0.45 mile	East northeast
	Del Mar Mesa Neighborhood Park	0.45 mile	Northwest
	Canyon View Mini Park	0.50 mile	South
	Stonebridge Neighborhood Park	0.55 mile	East northeast
	Rancho Peñasquitos Dog Park	0.55 mile	East northeast
	Ridgewood Park	0.6 mile	West southwest
	South Creek Park	0.6 mile	North northeast
	Semillon Mini-Park	0.80 mile	South
	Peñasquitos Creek Neighborhood Park	0.95 mile	East
	Lakeview Neighborhood Park	1.0 mile	South

Notes:
Sensitive receptors presented in this table are those within approximately 1-mile radius of the Proposed Project.
[1] Distances are listed in feet for all land uses less than 0.25 mile from the Proposed Project and in miles for all land uses 0.25 mile or greater distance from the Proposed Project.

Sources: *Google Earth; GIS Database.*

4.3.4 Potential Impacts

4.3.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to air quality if it will:

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; or

e) Create objectionable odors affecting a substantial number of people.

Also under these guidelines, a project would have a potentially significant impact to GHGs if it will:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.

Pursuant to SDAPCD, a project would result in a significant air quality impact if it generates total emissions (direct and indirect) that exceed their adopted thresholds; refer to Table 4.3-7, SDAPCD Pollutant Thresholds. A project that results in a significant impact must incorporate sufficient measures to reduce its impact to a level that is not significant. A project that results in impacts that cannot be mitigated to a level that is not significant must incorporate all feasible measures. Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

Table 4.3-7: SDAPCD Pollutant Thresholds

Pollutant	SDAPCD Thresholds (lbs/day) [1]	SDAPCD Thresholds (tons/year) [1]
Carbon Monoxide (CO)	550	100
Oxides of Sulfur (SO_x)	250	40
Volatile Organic Compounds (VOCs)	75	40
Oxides of Nitrogen (NO_x)	250	40
Particulate Matter (PM_{10})	100	15
Particulate Matter ($PM_{2.5}$)[1]	55	Not Applicable

Notes:
[1] The SDAPCD does not have thresholds of significance for VOCs or $PM_{2.5}$. As such, the VOC and $PM_{2.5}$ thresholds from SCAQMD were utilized.

Source: *SDAPCD, 2012.*

4.3.4.2 Question 3a - Conflict with or obstruct implementation of the applicable air quality plan?

Construction – Less than Significant Impact

A potentially significant impact on air quality would occur if the Proposed Project would conflict with or obstruct the implementation of the applicable air quality plan. Although the Proposed Project would contribute air emissions to the San Diego Air Basin, the primary concern is whether project-related impacts have been properly anticipated in the regional air quality planning process and reduced whenever feasible. Therefore, it is necessary to assess the Proposed Project's consistency with the RAQS. The Proposed Project's consistency with the RAQS is determined in terms of whether the Proposed Project exceeds the criteria pollutant threshold levels established by SDAPCD and whether the Proposed Project would result in growth that has been anticipated in a given subregion. As shown in Table 4.3-8, Proposed Project Construction Air Emissions, and as discussed under Question 4.3b, emissions do not exceed the applicable significance thresholds. The Proposed Project would not conflict with implementation of the RAQS or SIP. Therefore, impacts would be less than significant.

Operation and Maintenance – No Impact

As indicated in the long-term operational discussion under Operation and Management below including Table 4.3-9, Criteria Air Pollutant Emissions from Operation and Maintenance, the Proposed Project would not result in a significant increase in long-term air quality emissions. Additionally, the Proposed Project is not a trip-generating project such as a residential or commercial development. Once construction of the Proposed Project is complete, emissions would be relatively low, resulting only from scheduled maintenance. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. No impact would occur.

4.3.4.3 Question 3b - Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction – Less than Significant Impact

Constructing the Proposed Project is anticipated to occur over approximately 12 months. Table 3-11 in Section 3.5, Proposed Construction Schedule, presents the anticipated construction schedule and phases of construction for the Proposed Project. Construction of the Proposed Project is anticipated to begin in June 2016 and be completed by June 2017.

Construction equipment would include various types of trucks including line trucks, concrete trucks, haul trucks, and pickup trucks; on-site generators, air compressors, bore/drill rigs, bulldozers, backhoes, loaders, cabling equipment, and cranes.

Table 4.3-8: Proposed Project Construction Air Emissions

Year 2016	Maximum Daily Construction Emissions, lbs/day					
Segment A	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	1.02	9.71	19.15	0.02	0.56	0.50
Construction Truck Trips	0.20	0.88	2.96	0.01	0.22	0.11
Worker Trips	1.91	29.73	2.55	0.07	1.62	0.68
Helicopter	10.91	43.51	15.36	-	-	-
Fugitive Dust (Unmitigated)	-	-	-	-	6.56	1.01
Subtotal	**14.05**	**83.83**	**40.02**	**0.10**	**8.96**	**2.30**
Segment B	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	8.47	51.15	68.18	0.09	3.82	3.40
Construction Truck Trips	0.62	2.32	10.47	0.02	0.57	0.29
Worker Trips	0.59	9.20	2.55	0.02	0.50	0.21
Fugitive Dust (Unmitigated)	-	-	-	-	16.02	3.37
Subtotal	**9.68**	**62.67**	**81.20**	**0.13**	**20.91**	**7.26**
Segment C	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	3.16	17.88	24.61	0.03	1.15	1.03
Construction Truck Trips	0.03	0.14	0.45	0.00	0.05	0.02
Worker Trips	0.61	9.50	2.55	0.02	0.52	0.22
Helicopter	10.91	43.51	15.36	-	-	-
Fugitive Dust (Unmitigated)	-	-	-	-	0.41	0.06
Subtotal	**14.72**	**71.03**	**42.97**	**0.06**	**2.13**	**1.33**
Segment D	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	0.33	2.11	3.69	0.00	0.14	0.12
Construction Truck Trips	0.03	0.12	0.31	0.00	0.04	0.02
Worker Trips	0.61	9.50	2.55	0.02	0.52	0.22
Fugitive Dust (Unmitigated)	-	-	-	-	22.71	4.77
Subtotal	**0.97**	**11.73**	**6.55**	**0.03**	**23.40**	**5.13**
Maximum Daily Emissions, 2016	**39.41**	**229.26**	**170.76**	**0.32**	**55.40**	**16.02**

Table 4.3-8 (cont.): Proposed Project Construction Air Emissions

Year 2017	Maximum Daily Construction Emissions, lbs/day					
Segment A	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	9.14	58.53	82.84	0.11	3.53	3.14
Construction Truck Trips	0.24	1.15	3.64	0.01	0.31	0.22
Worker Trips	0.30	4.60	0.39	0.01	0.25	0.10
Helicopter	1.03	4.50	4.50	-	-	-
Subtotal	**10.71**	**68.77**	**91.38**	**0.13**	**4.09**	**3.46**
Segment B	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	1.88	18.74	30.33	0.04	0.89	0.79
Construction Truck Trips	0.25	1.18	3.82	0.01	0.31	0.22
Worker Trips	0.34	5.21	0.45	0.01	0.28	0.12
Subtotal	**2.47**	**25.14**	**34.59**	**0.06**	**1.48**	**1.12**
Segment D	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	3.81	22.50	37.67	0.05	1.27	1.13
Construction Truck Trips	0.12	0.54	1.81	0.00	0.17	0.09
Worker Trips	0.18	2.76	0.24	0.01	0.15	0.06
Helicopter	10.91	43.51	15.36	-	-	-
Subtotal	**15.03**	**69.31**	**55.08**	**0.06**	**1.60**	**1.28**
Maximum Daily Emissions, 2017	**28.20**	**163.22**	**181.05**	**0.24**	**7.17**	**5.87**

Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter, up to 10 microns; $PM_{2.5}$ = particulate matter, up to 2.5 microns.
Refer to Appendix 4.3-A, Air Quality Construction Emissions, for assumptions used in this analysis, including quantified emissions reduction by control measures.
Controlled emissions calculated assuming standard fugitive dust control measures, including watering the site three times daily, as SDG&E's ordinary construction restrictions require.

Any soil export or import would be transported on or off the site with street-legal haul trucks. Portable cranes and heavy hauling trucks would be employed for the equipment delivery and installation. Crew trucks, boom trucks, and pick-up trucks would arrive and depart from the site daily for construction activities, testing and check-out, final power line tie-ins, and circuit cabling, until the transmission line is tested and energized. Light- or medium-duty helicopters could also be used for construction of the transmission line.

Construction of the Proposed Project may require multiple four- to ten-person crews and associated equipment. Environmental monitors, construction inspectors, and SDG&E personnel would also be present throughout construction. These crews may work simultaneously at various points along the Proposed Project route and affected substations, with up to approximately 100 people (including construction crews, monitors, and all other support staff) working at one time.

Daily transportation of construction workers is not expected to cause a significant effect to air quality, since approximately 100 workers would be working along the Proposed Project at the

peak of construction, and the number of trips generated would be minimal and constitute an insignificant percentage of current daily volumes in the area. SDG&E would encourage carpooling to reduce worker trips where feasible.

Construction of the Proposed Project would generate short-term air quality impacts. The short-term air quality impact analysis considers the following temporary impacts from the Proposed Project:

- Clearing, grading, excavating, and using heavy equipment or trucks would create large quantities of fugitive dust, and thus PM_{10};
- Heavy equipment required for grading and construction would generate and emit diesel exhaust; and
- Vehicles transporting commuting construction workers and trucks hauling equipment and materials would generate and emit exhaust.

Construction activities for the Proposed Project were modeled based on the schedule provided in Table 3-11. The Proposed Project was modeled using emission factors from the OFFROAD Model, Tier 2 and Tier 3 emission factors, and emission factors from the EMFAC2011 Model. It was assumed that construction equipment would include a mix of equipment that meets USEPA Tier 2 and USEPA Tier 3 emissions standards for off-road diesel engines.

Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials transported on-site or off-site. Proposed Project construction emissions findings are presented in Table 4.3-8. Table 4.3-8 presents an evaluation of the maximum daily emissions associated with the simultaneous construction activities required for the Proposed Project. Maximum daily activities were identified based on a review of the construction schedule to identify simultaneous construction phases. A list of mobile and stationary construction equipment is included in the air quality modeling; refer to Appendix 4.3-A.

To reduce impacts to the extent possible, SDG&E would implement the following air emissions control measures during construction:

- All unpaved demolition and construction areas shall be wet/watered at least three times daily during construction, and temporary dust covers shall be used to reduce dust emissions and meet SDAPCD Rule 55 requirements.
- All construction areas shall be sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion.
- All loads shall be secured by covering or use of at least 2 feet of freeboard to avoid carry-over.
- All materials transported off-site shall be either sufficiently watered or securely covered.

- All earthmoving or excavation activities shall be discontinued during periods of winds greater than 25 miles per hour (mph) to prevent excessive amounts of fugitive dust generation.
- All equipment shall be properly tuned and maintained in accordance with manufacturer specifications.
- All equipment will meet a minimum of USEPA Tier 2 emission standards. For the purpose of this evaluation, equipment would be comprised of a mix of 70 percent Tier 2 equipment and 30 percent Tier 3 equipment.
- An Idling Restrictions Program shall be implemented. SDG&E or its contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues shall have their engines turned off after 5 minutes when not in use. Construction activities shall be phased and scheduled to avoid emissions peaks, and equipment use shall be curtailed during second-stage smog alerts. This will also result in a significant decrease in impacts from Diesel Particulate Matter.
- To the extent possible, power shall be obtained from power or distribution poles (i.e., from the electrical grid) rather than through the use of large generators on-site.
- Low- and non-VOC containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings shall be used to reduce VOC emissions.
- All areas where construction vehicles are typically parked, staged, or operating shall be visibly posted with signs stating "No idling in excess of 5 minutes."
- Catalytic converters shall be installed on all heavy construction equipment, where feasible.
- Deliveries shall be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day, where feasible.
- Construction sites shall be posted with signs providing a contact number for complaints. All complaints shall be addressed in a timely and effective manner.
- All on-road heavy-duty vehicles, off-road construction vehicles, and portable equipment used in the project will comply with CARB's Airborne Diesel Air Toxic Measures (ATCMs).

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10}) emissions that may have a substantial, although temporary, impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Proposed Project area. Fugitive dust emissions are associated with land clearing, excavation, cut and fill, and truck travel on unpaved roadways. Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading and construction is expected to be short-term and would cease when these activities are completed. Additionally, most of this fugitive dust material would be inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to sensitive receptors.

Emissions calculations include fugitive dust emissions as part of the site grading and earthmoving activities (refer to Table 4.3-8). With implementation of SDG&E's standard fugitive dust control practices, the Proposed Project would not exceed SDAPCD standards for PM_{10} or $PM_{2.5}$. Measures include adherence to standard construction practices (watering inactive and perimeter areas, track-out requirements, and containing dirt and dust within the Proposed Project area) and compliance with SDAPCD's Fugitive Dust Rule 55.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with transporting machinery and supplies to and from the Proposed Project area, emissions produced on-site as the equipment is used, and emissions from trucks transporting cut and fill material to and from the Proposed Project site. Emitted pollutants would include CO, ROG, NO_X, PM_{10}, and $PM_{2.5}$. As presented in Table 4.3-8, the maximum daily uncontrolled emissions for each year of construction of the Proposed Project would not exceed SDAPCD standards for all pollutants in 2016 and 2017. It was assumed that construction equipment would be comprised of a fleet of which 70 percent meets USEPA Tier 2 emission standards and 30 percent meets USEPA Tier 3 emission standards. Using equipment that meets USEPA Tier 2 and Tier 3 emissions standards would reduce CO, NO_x, and particulate matter emissions.

Toxic Air Contaminants (TACs)

California identifies diesel particulate matter as a TAC. Diesel particulate matter is emitted from on- and off-road vehicles that use diesel as fuel. Following identification of diesel particulate matter as a TAC in 1998, CARB worked on developing strategies and regulations aimed at reducing the emissions and associated risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the Risk Reduction Plan to Reduce Particulate Matter from Diesel-Fueled Engines and Vehicles (CARB, 2000).

Construction activities would result in emissions of diesel particulate matter. Sources of diesel particulate matter at the site would include haul trucks, heavy construction equipment, and contractor vehicles. Potential health effects associated with exposure to diesel particulate matter are long-term effects and are evaluated on the basis of a lifetime of exposure (70 years). Because construction activities would move on a daily basis, and because activities would be short-term, emissions would not impact any sensitive receptors for any length of time.

CARB has adopted ATCMs applicable to off-road diesel equipment and portable diesel engines rated brake horsepower 50 and greater. The purpose of these ATCMs is to reduce emissions of particulate matter from engines subject to the rule. The ATCMs require diesel engines to comply with particulate matter emissions limitations on a fleet-averaged basis.

CARB has also adopted an ATCM that limits diesel-fueled commercial motor vehicle idling. The rule applies to motor vehicles with gross vehicular weight ratings greater than 10,000 pounds that are licensed for on-road use. The rule restricts vehicles from idling for more than 5 minutes at any location, with exceptions for idling that may be necessary in the operation of the vehicle.

All off-road diesel equipment, on-road heavy-duty diesel trucks, and portable diesel equipment used for the Proposed Project must meet the state's applicable ATCMs for control of diesel

particulate matter or NO_X in the exhaust (e.g., ATCMs for portable diesel engines, off-road vehicles, and heavy-duty on-road diesel trucks, and 5-minute diesel engine idling limits) that are in effect during implementation of the Proposed Project. The mobile fleets used in the Proposed Project are expected to be in full compliance with these ATCMs. This would ensure that pollutant emissions in diesel engine exhaust do not exceed applicable state or federal air quality standards.

Operation and Maintenance – No Impact

Emissions associated with operation and maintenance of the Proposed Project would include emissions from worker vehicles and trucks, which are a subset of the construction emissions. There may be an occasional need to use heavy equipment for operations and maintenance activities. Emissions would be similar to emissions associated with the mobilization activities. Emissions are presented in Table 4.3-9. As shown in Table 4.3-9, emissions are below the significance thresholds and, therefore, would not result in any impacts related to existing air quality standards. As a result, there would be no air quality impact associated with operation and maintenance of the Proposed Project.

Table 4.3-9: Criteria Air Pollutant Emissions from Operation and Maintenance

Emissions Source	Pollutant (pounds per day)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Daily Emissions	0.26	3.13	1.30	0.01	0.26	0.12
SDAPCD Thresholds	75	250	550	250	100	55
Is Threshold Exceeded?	No	No	No	No	No	No

4.3.4.4 Question 3c - 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)?

Construction – Less than Significant Impact

As shown in Table 4.3-8, construction of the Proposed Project would lead to an increase in nonattainment criteria air pollutants. All appropriate and available Air Emissions Control Measures will be implemented. SDG&E's standard construction practices include minimizing vehicle idling time and controls for dust emissions to reduce construction impacts. As shown in Table 4.3-8, emissions would be below the daily significance thresholds for all pollutants. There is no other substantial evidence in the record demonstrating that the Proposed Project would have a cumulatively considerable impact. As a result, impacts due to nonattainment criteria pollutant increases would be less than significant.

Operation & Maintenance – No Impact

The emissions estimates presented in Table 4.3-9, represent emissions that are similar to the mobilization emissions during construction. These emissions are likely to be conservative and unlikely to be approached by the Proposed Project. As shown in Table 4.3-9, emissions are below the significance thresholds. As a result, there would be no impact related to existing air quality standards for operation and maintenance of the Proposed Project.

4.3.4.5 Question 3d - Expose sensitive receptors to substantial pollutant concentrations?

Construction – Less than Significant Impact

The Proposed Project corridor is characterized by a mixture of single-family and multi-family residential, commercial, recreational, open space, and military uses, adjacent to the transmission line route. Although sensitive receptors were identified within a 1-mile radius of the Proposed Project's components, impacts to these receptors would be less than significant with implementation of SDG&E's standard construction practices. These practices include reducing idling time and implementing dust-control measures. Therefore, impacts to sensitive receptors during Proposed Project construction would be less than significant.

Operation & Maintenance – No Impact

Emissions resulting from operation and maintenance activities associated with the Proposed Project were calculated based on a subset of construction emissions (refer to Table 4.3-9). As indicated, operations and maintenance activities associated with the Proposed Project would not emit substantial amounts of pollutants that would result in exposure of sensitive receptors to substantial pollutant concentrations. Therefore, operations and maintenance activities would have no impact to sensitive receptors.

4.3.4.6 Question 4.3e - Create objectionable odors affecting a substantial number of people?

Construction – Less than Significant Impact

Construction activity for the Proposed Project may generate detectable odors from heavy-duty equipment exhaust. Potential odors generated during construction would be temporary and would be limited by the relatively small number of vehicles on-site, small graded area, and temporary nature of construction activity in any one location that would be near any sensitive receptors. Therefore, impacts would be less than significant.

Operation & Maintenance – No Impact

Operations and maintenance activities associated with the Proposed Project would not result in detectable odors. As such, no impact would occur.

4.3.4.7 Question 4.3f - Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?

Construction – Less than Significant Impact

Construction emissions are temporary and short-term. Construction activities are subject to SDAPCD Rule 50, Visible Emissions; SDAPCD Rule 51, Nuisance; and SDAPCD Rule 55, Fugitive Dust Control. SDG&E's standard construction practices are consistent with the requirements of SDAPCD Rules 50, 51, and 55. Therefore, the construction of the Proposed Project would not diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutants. Impacts are less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing transmission and power line facilities throughout the Proposed Project corridor, and the Proposed Project is the reconstruction of existing electric facilities within existing SDG&E ROW. Operations and maintenance activities for the overhead portions of the Proposed Project would potentially decrease slightly compared to baseline conditions due to the increased reliability of the new transmission and power line components. Any future construction activities related to potential maintenance would be evaluated under General Order 131-D and CEQA to assess whether further CPUC approval is required. Accordingly, the Proposed Project would not result in a significant increase in long-term air quality emissions. The Proposed Project would not diminish an existing air quality rule or future compliance and would have no impact regarding air quality rules and compliance requirements.

4.3.4.8 Question 4.3g - Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impacts from GHG emissions are not direct impacts, but would have the potential for cumulative impacts on the environment. The Summary Report from the California Climate Change Center uses a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Three warming ranges were identified: Lower warming range (3.0 to 5.5 ºF); medium warming range (5.5 to 8.0 ºF); and higher warming range (8.0 to 10.5 ºF). The report then presents an analysis of the future projected climate changes in California under each warming range scenario.

According to the report, substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California. These impacts would result from a projected increase in extreme conditions, with the severity of the impacts depending upon actual future GHG emissions and associated warming. These impacts are described below.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase by 25 to 35 percent under the lower warming range and 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as is predicted in some scenarios, it may become impossible to meet local air quality standards.

An increase in wildfires could also occur, and the corresponding increase in the release of pollutants including particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) could further compromise air quality. The Summary Report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

Potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases

(such as malaria, dengue fever, yellow fever, and encephalitis) may increase, such as those spread by mosquitoes and other disease-carrying insects.

Climate change could affect the Proposed Project area because warmer climates may experience more of the problems identified above related to heat, should increases in average temperature in the Proposed Project area occur.

Water Resources

A vast network of reservoirs and aqueducts capture and transport water throughout California from Northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. In addition, if temperatures continue to rise, more precipitation would fall as rain instead of snow, further reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. California's water resources are also at risk from rising sea levels. An influx of seawater would degrade California's estuaries, wetlands, and groundwater aquifers.

This global climate change impact is not likely to have a direct effect on the operation of the Proposed Project.

Agriculture

Increased GHGs and associated increases in temperature are expected to cause widespread changes to the agricultural industry, reducing the quantity and quality of agricultural products statewide. Significant reductions in available water supply to support agriculture would also impact production. Crop growth and development will change as will the intensity and frequency of pests and diseases. Agricultures impacts from global climate change are not anticipated to affect the Proposed Project directly because the Proposed Project site does not include agricultural uses.

Ecosystems/Habitats

Continued global warming will likely shift the ranges of existing invasive plants and weeds, thus alternating competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Continued global warming is also likely to increase the populations of and types of pests and affect natural ecosystems and biological habitats throughout California. This effect of global climate change could affect current ecosystems and habitats at the Proposed Project site.

Wildland Fires

Global warming is expected to increase the risk of wildfire and alter the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout California. If

global climate change leads to increased risk of wildfires in Southern California, this impact could affect the Proposed Project area.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten California's coastal regions. Under the high warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. A sea level risk of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten levees and inland water systems, and disrupt wetlands and natural habitats. In California, the coastal zone is defined as 1,000 yards inland from the mean high tide level. A portion of the project area is located within the Coastal Zone, and therefore could be affected by sea level rise. It is likely, however, that the majority of the Project would not be affected in the event of sea level rise.

Construction – Less than Significant Impact

The main source of GHG emissions associated with the Proposed Project would be fossil fuel combustion during construction. GHG emissions for construction were calculated using the same approach as criteria pollutant emissions for overall construction emissions. Estimated GHGs emissions are summarized in Table 4.3-10, Greenhouse Gas Construction Emissions. Emission calculations are provided in Appendix 4.3-A, CalEEMod Model Outputs.

Table 4.3-10: Greenhouse Gas Construction Emissions

	GHG Emissions (metric tons[MT])			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Total GHG Emissions	1497.77	0.12	0.72	**1,723.49**
Global Warming Potential	1	21	310	-
CO_2 Equivalent	1,498	3	223	1,724
CO_2 Equivalent Total	1,724			

Both the South Coast Air Quality Management District (SCAQMD) and the County of San Diego have adopted significance thresholds for industrial projects of 10,000 MT of CO_2e annual emissions. The total construction CO_2e emissions of 1,724 metric tons are below the County of San Diego's and SCAQMD's significance threshold of 10,000 MT of CO_2e annually for industrial projects. This level of GHG emissions would be less than significant.

Operation & Maintenance – Less than Significant Impact

As discussed under criteria pollutant impacts, operation and maintenance activities would include regular inspection of the transmission line and periodic maintenance activities. These activities would generate a minor amount of GHG emissions from vehicles and/or equipment used to inspect and maintain the facilities. GHG emissions associated with operation and maintenance would be well below the significance thresholds.

4.3.4.9 Question 3h - Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction – No Impact

The Proposed Project's GHG emissions from construction are below the County of San Diego's and SCAQMD's significance threshold when amortized over a 30-year period, as recommended by the County of San Diego and SCAQMD. Equipment and vehicles supporting construction of the Proposed Project would comply with the requirements implemented by CARB to reduce GHG emissions and would be consistent with AB 32's goals. Accordingly, there would be no impact associated with construction.

Operation & Maintenance – No Impact

By virtue of the Proposed Project's compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project is consistent with AB 32's goals. Emissions would not differ from emissions levels for operations and maintenance under existing rules and regulations. Also, transmission circuit breakers are the only equipment for the Proposed Project that contain SF_6. SDG&E has ongoing standard internal programs and practices that ensure compliance with CARB's SF_6 regulations and maximum emissions rate. Those programs and practices would not change as a result of the Proposed Project. Accordingly, no impact would occur. By complying with applicable rules and regulations and following SDG&E's design and operational features to decrease GHG emissions, the Proposed Project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. There would be no impact.

4.3.5 Project Design Features and Ordinary Construction/Operating Restrictions

With implementation of the ordinary construction restrictions, as outlined within Section 3.8, potential impacts related to air quality and GHGs would be reduced to the extent feasible.

4.3.6 Applicant Proposed Measures

Because air quality and GHG impacts would be less than significant, no APMs are required or proposed.

4.3.7 Detailed Discussion of Significant Impacts

Based on the above analyses, no significant impacts have been identified for the Proposed Project.

4.3.8 References

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