5.3 Air Quality

5.3.1 Environmental Setting

5.3.1.1 Air Basin

The proposed project would be located in the San Diego Air Basin (SDAB). The boundary of the SDAB is coterminous with the boundary of San Diego County and covers an area of approximately 4,200 square miles. The San Diego Air Pollution Control District (SDAPCD) regulates air quality in the SDAB.

5.3.1.2 Climate and Meteorology

Climatological data are recorded at a monitoring station at San Diego Lindbergh Field, located approximately 12 miles south of the project area (WRCC 2016). The overall climate in the SDAB is generally warm, with low annual rainfall occurring primarily during the winter months. According to the WRCC Climate Data Summary, the average maximum temperature is 76.3 degrees Fahrenheit (°F) in August, and the average minimum temperature is 48.1°F in January (WRCC 2016). Average annual precipitation is 10.13 inches, occurring primarily from November through March. Climatological data recorded in San Diego Lindbergh Field are summarized in Table 5.3-1.

Table 5.3-1 Climatological Data Summary, San Diego Lindbergh Field

Month	Temperature (°F)		Average Monthly Precipitation (inches)
	Average Maximum	Average Minimum	
January	64.8	48.1	2.00
February	65.2	49.7	1.98
March	65.9	51.9	1.63
April	67.4	54.7	0.78
May	68.6	58.1	0.21
June	70.9	60.8	0.05
July	74.8	64.4	0.02
August	76.3	65.7	0.06
September	75.7	63.9	0.17
October	72.9	59.3	0.51
November	69.9	52.9	0.97
December	65.8	48.7	1.77
Annual	69.9	56.5	10.13

Source: WRCC 2016

Climate plays an important role in the air quality of the SDAB. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. However, meteorological factors can occasionally create conditions for the temperature to increase with altitude. The height at which the temperature stops decreasing with altitude and starts increasing is called inversion height, or "mixing height." Pollutants mix vertically up to the mixing height, above which vertical dispersion is inhibited. Therefore, a temperature inversion causes air pollutants to be trapped below the inversion height, resulting in higher ambient concentrations. Within the SDAB, inversion occurs when cool, moist air from the coast travels towards higher elevations. Most air quality exceedances are recorded on the lower mountain slopes, which experience an inversion layer.

Local meteorological conditions in the project vicinity conform to a typical regional diurnal (twice daily) wind pattern of strong onshore winds by day (especially in 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 warm interior topography. In the summer, moderate breezes between 8 and 12 miles per hour blow onshore. Light onshore breezes may continue overnight 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.

5.3.1.3 Ambient Air Quality

Air Pollutant Standards and Definitions

The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for several pollutants based on their adverse health effects. The EPA has set National Ambient Air Quality Standards (NAAQS) for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}), fine particulate matter less than 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). These pollutants are commonly referred to as "criteria pollutants." Primary standards were set to protect public health; secondary standards were set to protect welfare against visibility impairment, damage to animals, crops, vegetation, and buildings. Furthermore, CARB has established California Ambient Air Quality Standards (CAAQS) for these pollutants, as well as for sulfate (SO_4), visibility reducing particles, hydrogen sulfide (H_2S), and vinyl chloride. California standards are generally stricter than national standards (CARB 2015).

The "attainment" level refers to the status of a given airshed with regard to NAAQS or CAAQS requirements. The following three air quality attainment designations are given to an airshed for a particular pollutant:

- Nonattainment: Air quality standards have not been consistently achieved.
- Attainment: Air quality standards have been achieved.
- Unclassified: Insufficient monitoring data exist to determine a nonattainment or attainment designation.

Table 5.3-2 summarizes the federal and state attainment status for the SDAPCD, as of 2017, based on the NAAQS and CAAQS, respectively.

Table 5.3-2 Attainment Status for San Diego County Air Pollution Control District

Pollutant	Designation/Classification	
	Federal	State
Ozone (O_3)	Nonattainment	Nonattainment
Particulate Matter (PM_{10})	Unclassified	Nonattainment
Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment
Carbon monoxide (CO)	Attainment	Attainment

Table 5.3-2 Attainment Status for San Diego County Air Pollution Control District

Pollutant	Designation/Classification	
	Federal	State
Nitrogen dioxide (NO_2)	Attainment	Attainment
Sulfur dioxide (SO_2)	Attainment	Attainment
Hydrogen sulfide (H_2S)	No Federal Standard[a]	Unclassified
Sulfates (SO_4)	No Federal Standard[a]	Attainment
Visibility reducing particulate	No Federal Standard[a]	Unclassified

Source: SDAPCD 2017
Note:
[a] There are no federal standards for sulfates, hydrogen sulfide, or visibility-reducing particles.
Key:
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 10 microns in diameter

Ozone

Both the upper atmosphere (ozone layer) and ground level contain O_3. O_3 is considered a pollutant at ground level. It forms when precursors (i.e., reactive organic gases, CO, nitrogen oxides [NO_X], volatile organic compounds [VOCs]) react with sunlight in the atmosphere. In general, sources for these precursors include fuel combustion in vehicles and industrial processes, gasoline vapors, and chemical solvents. O_3 can cause respiratory complications (i.e., chest pain, coughing, and throat irritation) or exacerbate existing respiratory problems, such as asthma and bronchitis. Temperature inversions and atmosphere oscillation increase O_3 levels in the SDAB. Pollutants trapped by temperature inversions undergo photochemical reactions that produce O_3. Atmospheric oscillations that result in transport of air pollutants from the Los Angeles region to San Diego County contribute to O_3 concentrations in the SDAB. O_3 is currently the only pollutant not in attainment of NAAQS in the SDAB. (SDAPCD 2017)

Respirable Particulate Matter (PM_{10})

Particulate matter is a combination of liquid or solid particles suspended in the air. PM_{10} particles are smaller than 10 micrometers in diameter and typically include dust, pollen, and mold. These particles are a threat to human health because they can enter the lungs and exacerbate asthma and bronchitis and potentially contribute to premature death. PM_{10} is a concern in the SDAB due to noncompliance with the state standard. (SDAPCD 2017)

Fine particulate Matter ($PM_{2.5}$)

$PM_{2.5}$ particles are smaller than 2.5 micrometers in diameter and typically include combustion particles, organic compounds, and metal particles. $PM_{2.5}$ particles are more hazardous to human health than PM_{10} because they contain a larger variety of dangerous components than PM_{10} and can travel farther into the lungs, thus potentially causing scarring of lung tissue and reduced lung capacity. $PM_{2.5}$ particles are one of the pollutants of greatest concern in the SDAB due to noncompliance with the state standard. (SDAPCD 2017)

Carbon Monoxide

CO is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest in the winter morning, when surface-based inversions trap the pollutant at ground level. CO is emitted directly from internal combustion engines. The primary source of CO in urban areas is motor vehicles. Exposure to CO results in reduced oxygen-carrying capacity of the blood. High CO concentrations can result in health risks, particularly for individuals with compromised cardiovascular systems. CO is not usually a concern in the SDAB because the federal and state standards have only been violated once since 1990, and that violation occurred during a firestorm.

Nitrogen Dioxide

NO_2 forms during combustion of fossil fuels from vehicles and industrial processes. NO_2 is an O_3 precursor, which can also cause acid rain and acid snow. Health effects of NO_2 include airway inflammation and exacerbation of preexisting asthma. NO_2 is one of the pollutants of greatest concern in San Diego County.

Sulfur Dioxide

SO_2 is a colorless, acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oils, coals, and diesel. SO_2 has the potential to damage building materials and can cause health effects at high concentrations. Health effects of SO_2 exposure include respiratory effects such as exacerbation of asthma and bronchitis. SO_2 is a precursor to the formation of atmospheric sulfate and particulate matter and contributes to potential acid rain. SO_2 is not a pollutant of concern in the SDAB because low sulfur fuels are used, and there has not been a violation of federal or state standards for this pollutant (SDAPCD 2017).

Lead

Lead air emissions were initially problematic when leaded gasoline was common. Today, leaded gasoline is uncommon, and the main sources of lead emissions are lead smelters and aircrafts that use leaded gasoline. Lead causes health effects to the nervous system, kidneys, immune system, reproductive system, and cardiovascular system. Lead air emissions have decreased significantly, since leaded gasoline is no longer used in vehicles. There have been no violations of federal or state standard since 1980 and 1987, respectively.

Hydrogen Sulfide

H_2S is generally released during natural gas purification, oil refinement, and geothermal energy production. Health effects of H_2S exposure include respiratory irritation, headaches, and, at higher levels, adverse effects to organs.

Sulfates

A sulfate is a form of sulfur. Most sulfate emissions come from burning fossil fuels. Health effects of sulfate exposure include exacerbation of asthma, increased risk of cardio-pulmonary disease, and lung irritation. Most sulfates in air form through oxidation of SO_2 from fuel combustion. SO_2 is not a pollutant of concern in the SDAB because low-sulfur fuels are used, and there has never been a violation of federal or state standards.

Local Air Quality

The SDAPCD maintains ambient air quality monitoring stations in San Diego County. Each monitoring station collects data on a variety of criteria pollutant concentrations. The nearest San Diego monitoring station is approximately 9 miles east of the project area and provides the most representative data for O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$. No SO_2 monitoring stations are located near the project area. Table 5.3-3 presents local ambient air quality monitoring data for the two-year period of 2014 to 2016 and compares measured pollutant concentrations against the most stringent applicable NAAQS or CAAQS standards.

Table 5.3-3 Local Ambient Air Quality Concentration at Nearby Monitoring Stations

Pollutant[a]	Most Stringent Applicable Standard[c]	Maximum Concentration [b]		
		2014	2015	2016
O_3				
Number of days 1-hour standard exceeded	0.09 ppm	0	0	0
Maximum 1-hour (ppm)		0.099	0.077	0.087
Number of days 8-hour standards exceeded	0.07 ppm	4	0	3
Maximum 8-hour (ppm)		0.081	0.07	0.075
NO_2				
Number of days 1-hour standard exceeded		-	-	-
Maximum 1 hour (ppm)	0.18 ppm	0.051	0.051	0.053
CO [b]				
Number of days 1-hour standard exceeded	20 ppm	0	0	0
Maximum 1-hour (ppm)		2.7	2.4	2
Number of days 8-hour standards exceeded	9 ppm	0	0	0
Maximum 8-hour (ppm)		1.9	1.4	1.2
SO_2				
Number of days 1-hour standard exceeded	0.25 ppm	-	-	-
Maximum 1 hour (ppm)		-	-	-
PM_{10}				
Maximum 24-hour ($\mu g^3/m^3$)		39	39	36
Estimated days 24-hour standard exceeded	50 $\mu g^3/m^3$	0	0	0
Estimated days 24-hour standard exceeded	150 $\mu g^3/m^3$	0	0	0
$PM_{2.5}$				
Maximum 24-hour ($\mu g^3/m^3$)		20.2	25.7	20.3
Number of days 24-hour standard exceeded	35 $\mu g^3/m^3$ [d]	-	-	-
Annual average ($\mu g^3/m^3$)		8.2	7.2	7.8

Sources: EPA 2014, 2015, 2016.

Notes:

[a] Information attained from monitoring station that records this pollutant nearest project component.

[b] **Bold** values indicate an exceedance of an applicable standard

[c] State standard, not to be exceeded

[d] Federal standard, not to be exceeded

Key:

$\mu g^3/m^3$ = micrograms per cubic meter

- = No data are available

NO_2 = nitrogen dioxide

O_3 = ozone

PM_{10} = particulate matter less than 10 microns

$PM_{2.5}$ = particulate matter less than 2.5 microns

ppm = parts per million

SO_2 = sulfur dioxide

5.3.1.4 Sensitive Receptors

Sensitive receptors are defined as people or other organisms that are more susceptible or substantially more sensitive to the adverse effects of exposure to air pollutants. The most common sensitive receptors are residences, apartments, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. Individuals at these receptors may have an increased sensitivity to contaminants by virtue of their age and health. Receptors may also be sensitive due to their proximity and increased exposure to a contamination source. For the purposes of this analysis, sensitive receptors in the project area consist of residential uses (single- and multi-family housing), schools, educational learning centers, and parks and recreational areas.

Project-related air quality impacts fall into two categories: short-term impacts related to emissions during construction activities, and long-term impacts related to project operation. The proposed project's potential air quality impacts would occur in the short term and would be related to the use of motorized tools and equipment, as shown in Tables 4.6-1 and 4.6-2 of ~~Section~~ Chapter 4.0, "Project Description" during an anticipated 12-month construction period.

Implementation of the proposed project would result in reconfiguration of the local electrical network in which high-wire overland distribution lines would be replaced with circuitry underground, and ancillary substation equipment (circuit breaker) would be removed and replaced to ensure proper network functionality. The physical changes to the network resulting from the proposed project address system reliability and would not alter or increase the network's current capacity or electrical throughput. ~~As such, the proposed project's occasional maintenance and repair needs would constitute the operational phase with regard to assessing air quality impacts.~~ Similar to current conditions, operation and maintenance of the transmission and distribution lines would have minimal air quality impacts, mainly associated with vehicle trips used to access lines for inspection and repair as needed. The proposed project would not represent a new stationary emissions source.

The following air quality analysis focuses on the nearest sensitive receptor exposure to the proposed project's construction activities and duration by construction phase. Several sensitive receptors (residences, schools and public open spaces) are within a range of approximately 1,000 feet from the proposed project alignment. Table 5.3-4 illustrates the sensitive receptors that would be located directly adjacent to or within the project area and highlights the type equipment and foreseeable activities that would be temporary sources of dust and machinery exhaust during construction.

Table 5.3-4 Proposed Project Nearest Sensitive Receptors

Project Component and Activity	Equipment and Vehicle Use During Construction	Approx. Duration (months)	Nearest Sensitive Receptor (feet approx.)	Receptor Type [a]
TL674A Reconfiguration				
Foundation Installation, Pole Installation, Reconfigure Tap, Duct Bank, Underground Cable Installation	Tractors, Loaders, Backhoes, Air Compressors, Cranes, Forklifts	1	115	Residence
			283	Solano Santa Fe Elementary School
TL666D Removal				
Conductor Removal, Pole Removal and Modification	Tractors, Loaders, Backhoes, Air Compressors, Aerial Lifts, Cranes, Bore and Drill Rigs	1.5	11	Residence
			27	Del Mar Hills Elementary School
C510 Conversion				
Conductor/Cable Installation and Removal, Foundation Installation, Pole Installation and Removal,	Tractors, Loaders, Backhoes, Air Compressors, Aerial Lifts, Cranes, Bore and Drill Rigs, Forklifts	1.5	42	Residence
C738 Conversion				
Conductor/Cable Installation and Removal, Pole Installation and Removal, Duct Bank	Tractors, Loaders, Backhoes, Air Compressors, Aerial Lifts, Cranes, Bore and Drill Rigs	1	445	Shaw Valley Open Space
Circuit Breaker Removal Replacement, Del Mar Substation				
Circuit breaker removal, potential foundation work, debris removal/ off-haul, replacement breaker installation	Loaders, trencher, forklifts, Jackhammer, Dump/Haul Truck	3.75	228	Therapeutic Learning Center
All				
Staging Yard/Fly Yard	Helicopters, Tractors Loaders, Backhoes, Air Compressors, Aerial Lifts, Cranes, Bores and Drill Rigs, Forklifts	12	361	Del Mar Heights School
			121	Fairbanks Ranch Country Club

Note:
[a] Nearest schools located directly adjacent to or within the project area are represented in **bold** text.

1

5.3.2 Regulatory Setting

5.3.2.1 Federal

Clean Air Act

The Clean Air Act (CAA; United States Code Title 42, Chapter 85) defines the EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The last major changes to the law, the CAA Amendments of 1990, were enacted by Congress in 1990. Legislation passed since then has resulted in several minor changes. Under the CAA, the EPA oversees implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources. The sections of the CAA most applicable to the proposed project are Title I (Air Pollution Prevention and Control) and Title II (Emission Standards for Mobile Sources).

Title I of the CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a state implementation plan (SIP) to the EPA for areas in nonattainment with NAAQS. The SIP, which is reviewed and approved by the EPA, must demonstrate how state and local regulatory agencies will institute rules, regulations, and/or other programs to achieve attainment with NAAQS. NAAQS are presented in Table 5.3-5.

Table 5.3-5 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a], [b]	National Standards[b], [c]	
			Primary[d]	Secondary[e]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	---[f]	---
	8-Hour	0.07 ppm (137 µg/m^3)	0.07 ppm (137 µg/m^3)	0.07 ppm (137 µg/m^3)
Carbon monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	---
	8-Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	---
Nitrogen dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m^3)	0.1 ppm (188 µg/m^3)	---
	1-Year	0.03 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur dioxide (SO_2)[g]	1-Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	---
	3-Hour	---	---	0.5 ppm (1,300 µg/m^3)
	24-Hour	0.04 ppm (105 µg/m^3)	---	---
Respirable Particulate Matter (PM_{10})[h]	24-Hour	50 µg/m^3	150 µg/m^3	150 µg/m^3
	1-Year	20 µg/m^3	---	---
Fine Particulate Matter ($PM_{2.5}$)[h]	24-Hour	---	35 µg/m^3	35 µg/m^3
	1-Year	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
Lead (Pb)	30-Day	1.5 µg/m^3	---	---
	Rolling 3-Month	---	0.15 µg/m^3	0.15 µg/m^3

Table 5.3-5 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a], [b]	National Standards[b], [c]	
			Primary[d]	Secondary[e]
Hydrogen sulfide (H_2S)	1-Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Sulfates (SO_4)	24-Hour	25 µg/m^3		
Visibility reducing particles	8-Hour	See Note (i)		
Vinyl chloride[j]	24-Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2015

Notes:

[a] CAAQS for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] Concentration expressed first in units in which it was promulgated. Parts per million in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

[c] NAAQS (other than ozone, particulate matter, and standards based on annual averages or 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 in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is not to be exceeded more than once per year on average over 3 years. The 24-hour standard is attained when the 3-year average of the weighted annual mean at each monitor within an area does not exceed 150 µg/m^3. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, do not exceed 35 µg/m^3. The annual standard is attained when the 3-year average of the weighted annual mean at single or multiple community-oriented monitors does not exceed 12 µg/m^3.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse impacts of a pollutant.

[f] The federal 1-hour ozone standard was revoked for most areas of the United States, including all of California on June 15, 2005.

[g] Final rule signed June 2, 2010. The 1971 annual and 24-hour SO_2 standards were revoked in that same rulemaking.

[h] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. Existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^{3}also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[i] 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 standards, respectively.

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

Key:

CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
µg/m^3	micrograms per cubic meter

Title II of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, tailpipe emission standards for cars and trucks, and standards for heavy-duty vehicles that would be utilized during construction of the proposed project.

National Emission Standard for Hazardous Air Pollutants

The CAA defines as hazardous air pollutants (HAPs) a variety of substances that pose serious health risks. Direct exposure to HAPs has been shown to cause cancer, reproductive effects or birth defects, damage to brain and nervous system, and respiratory disorders. HAP emission sources are categorized

and controlled through separate standards under CAA Section 112: National Emission Standards for Hazardous Air Pollutants (NESHAP). These standards are designed to reduce the potency, persistence, or potential bioaccumulation of HAPs.

Asbestos is a HAP regulated under the EPA NESHAP. The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. Air toxics regulations under the CAA outline work practices for controlling asbestos during demolitions and renovations. The regulations require a thorough inspection of the work area, advance notification to CARB, and proper handling and disposal of all asbestos-containing materials.

5.3.2.2 State

California Clean Air Act

The California Clean Air Act (CCAA) outlines a statewide air pollution control program in California. CARB is the primary administrator of the CCAA at the state level, while local air quality districts administer air rules and regulations at the regional level. CARB is responsible for implementing the provisions of the CCAA, including establishing CAAQS, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, regulating emissions from consumer products, developing air emission inventories, collecting air quality and meteorological data, and preparing the SIP. CARB uses air quality management plans prepared by local air quality districts to inform the SIP and secure approval from the EPA.

Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350)

The Clean Energy and Pollution Reduction Act of 2015 establishes a new set of objectives in clean energy, clean air, and pollution reduction for 2030 and beyond. This act requires the amount of electricity generated and sold from renewable energy resources to be increased to 50 percent by December 31, 2030, which is an increase in the state's Renewables Portfolio Standard (RPS) goal of 33 percent by 2020, established by Senate Bill 2 in 2011. In addition, statewide energy efficiency savings in electricity and natural gas must be doubled through energy efficiency and conservation efforts. As with Senate Bill 2, the act requires the California Public Utilities Commission (CPUC) to establish efficiency targets for electric and gas companies that are consistent with the statewide targets. To track RPS compliance, the CPUC's Energy Division has developed an RPS Compliance Report spreadsheet for retail sellers to report their progress in reaching the established targets on an annual basis.

Sulfur Content in Fuel

Pursuant to Title 13, Section 2281 of the California Code of Regulations (CCR), the sulfur content of vehicular diesel fuel sold or supplied in California must not exceed 15 parts per million (ppm) by weight. As stipulated in 17 CCR 93114, non-vehicular diesel fuel is subject to the sulfur limits specified in Title 13, section 2281 of the CCR.

5.3.2.3 Regional and Local

San Diego County Air Pollution Control District

Regional air pollution control districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their jurisdictions and preparing the air quality plans

required under the CAA and CCAA. The SDAPCD is the primary agency responsible for planning, implementing, and enforcing federal and state ambient standards in San Diego County. The plans, rules, and regulations presented in the following subsections apply to all sources under the SDAPCD's jurisdiction.

Air Quality Plans

The SDAPCD's air quality plans collectively provide an overview of the region's air quality and air pollution sources and identify the pollution-control measures needed to attain and maintain AAQS. The SDAPCD's air quality plans include the San Diego Regional Air Quality Strategy (RAQS) and the San Diego portion of the California SIP, which address CAAQS and NAAQS, respectively.

Ozone Air Quality Management Plan

~~The SDAPCD SIP predicts that San Diego County will reach attainment status for the 0.08-ppm 8-hour O3 NAAQS (per the SIP submitted to the EPA in June 2007). However, t~~The EPA designated San Diego County as a nonattainment area for ~~new~~ the 0.075-ppm 8-hour O_3 NAAQS~~. Standard~~; thus, the SDAPCD submitted ~~an updated~~ a SIP with the 8-hour ozone Attainment Plan to address this more stringent standard using the RAQS. The RAQS outlines the measures and regulations that control and reduce O_3 precursors such as NO_X and VOCs. The RAQS control measures focus on stationary sources under the SDAPCD's jurisdiction, but also include emission sources and control measures under the jurisdiction of CARB and EPA.

Particulate Matter Air Quality Management Plan

The CCAA does not require local districts to establish air quality management plans for state PM_{10} nonattainment. However, the SDAPCD prepared a report, *Measures to Reduce Particulate Matter in San Diego County*, to control particulate matter (SDAPCD 2005). The SDAPCD is considering establishing control measures for PM emissions from residential wood combustion and has developed rules for controlling PM from fugitive dust generated at construction sites and unpaved roads.

Regulation IV – Prohibitions, Rule 50 – Visible Emissions

This rule prohibits any activity that will create air contaminant emissions darker than 20 percent opacity for more than an aggregate of three minutes in any single 60-minute time period.

Regulation IV – Prohibitions, Rule 51 – Nuisance

This rule prohibits discharging air contaminants that cause injury or nuisance to the public, endanger public comfort or health and safety, or have the potential to damage a business or property.

Regulation IV – Prohibitions, Rule 55 – Fugitive Dust Control

This rule regulates construction and demolition activities that could generate fugitive dust. It does not apply to permanent, unpaved roads unless undergoing construction or resurfacing. Rule 55 contains guidelines for airborne dust and trackout.

The proposed project is not subject to local discretionary regulations because the CPUC has exclusive jurisdiction over the siting, design, and construction of the proposed project.

City of San Diego General Plan

The City of San Diego General Plan does not outline air quality policies relevant to the proposed project.

City of Del Mar Community Plan

The City of Del Mar's 1976 Community Plan, 1985 amendments, and 2002 resolution do not outline air quality policies relevant to the proposed project.

5.3.3 Environmental Impacts and Assessment

5.3.3.1 Approach to Impact Assessment

Applicant-Proposed Measures

The applicant has not incorporated applicant-proposed measures (APMs) into the proposed project to specifically minimize or avoid impacts on air quality. Instead, SDG&E would implement the following air quality control measures from the Proposed Project Design Features and Ordinary Construction Restrictions described in Chapter 4.0, "Project Description" as a means of reducing air quality impacts relating to fugitive dust, materials transport, equipment emissions and use of volatile organic compounds (VOCs) to levels of insignificance.

- **Fugitive Dust Control.** All unpaved construction areas would be watered, as necessary, during construction to reduce dust emissions and to meet SDAPCD Rule 55 requirements. SDG&E or its contractor would keep the construction area sufficiently dampened to control dust caused by construction and hauling, and would provide at all times reasonable dust control in areas subject to windblown erosion.
- **Bulk Material Transport.** All loads would be secured by covering them or by sufficiently watering and using at least two feet of freeboard to avoid carry-over.
- **Equipment Emissions.** SDG&E or its contractor would maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off after 5 minutes when not in use. Construction activities would be phased and scheduled to avoid emission peaks, and equipment use would be curtailed during second-stage smog alerts.
- **VOC Reduction.** Low- and non-VOC-containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings would be used to reduce VOC emissions.

These control measures are incorporated into California Emissions Estimator Model (CalEEMod) modeling and are presented in Table 5.3-9, under the discussion of criterion (b), below.

Significance Criteria

Table 5.3-6 includes the significance criteria from Appendix G of the CEQA Guidelines' air quality section to evaluate the environmental impacts of the proposed project.

Table 5.3-6 Air Quality Checklist

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	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?	☐	☐	☒	☐

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

The SDAPCD has adopted several attainment plans that outline long-term strategies designed to achieve compliance with the NAAQS and CAAQS. The plans applicable to the proposed project are the RAQS and the 8-hour Ozone Attainment Plan described in Section 5.3.2, "Regulatory Setting."

RAQS

The RAQS emission inventories and projections include all sources of VOCs and NO_X. Projections in the RAQS include current control measures and projected population growth. The RAQS is based on San Diego Association of Governments (SANDAG) growth forecasts for the region, and incorporates measures to meet state and federal requirements. Thus, significance of air quality impacts is based, in part, on the degree to which a project does not conflict with SANDAG's growth forecasts. Since construction of the proposed project would not induce population growth, it would not conflict with the implementation of the RAQS.

Further, the proposed project would also involve implementation of the applicable current control measures in the RAQS. A new control measure related to VOCs was adopted and implemented under the RAQS. Non-adherence to the control measure would be a significant impact. The SDAPCD control measure incorporates tighter VOC limits for architectural coatings and would further reduce VOC emissions in San Diego County. Per SDG&E's Proposed Project Design Features and Ordinary Construction Restrictions, low- and non-VOC-containing architectural coatings would be used and adhere to SDAPCD's coating standard in the RAQS.

Therefore, with incorporation of SDG&E's Proposed Project Design Features and Ordinary Construction Restrictions, the project not conflict with RAQS and this impact would be less than significant.

Eight-Hour Ozone Attainment Plan

The 8-hour Ozone Attainment Plan considers that sources of O_3 are regulated at the federal, state, and local levels. Projections in the 8-hour Ozone Attainment Plan are based on "socio-economic projections, industrial and travel activity levels, emission factors, and mission speciation profiles" (SDAPCD 2007). Since the proposed project would not include development of new homes or businesses, it would not induce population growth in the SDAB.

However, construction of the proposed project could conflict with the reasonably available control measures to restrict vehicle idling, which would constitute a significant impact. SDG&E or its contractor(s) would maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off after 5 minutes when not in use. Construction activities will be phased and scheduled to avoid emission peaks, and equipment use will be curtailed during second-stage smog alerts.

Furthermore, the types and quantities of construction equipment that would be used for the proposed project would be typical of the industry and would not be of sufficient quantity and intensity to exceed those assumptions used for the analysis of construction equipment emissions in the 8-hour Ozone Attainment Plan. Construction of the proposed project would therefore not conflict with the projections or the emissions control measure in the 8-hour Ozone Attainment Plan. There would be no impact.

Operation of a project could obstruct implementation of RAQS if it resulted in population or employment growth beyond what is allowed for in the plan, neither of which would occur as a result of the proposed project. The proposed project therefore would not conflict with or obstruct implementation of any of the SDAPCD's air quality plans. There would be no impact.

Implementation of the proposed project would not include development of new homes or businesses; therefore, it would not induce population growth in the SDAB. Inspections and routine maintenance of the proposed project are expected to occur with intensity, frequency, and duration similar to existing inspection and maintenance activities. Most vehicles used during operation and maintenance would be crew trucks and would not produce sufficient emissions to exceed those assumptions used in the analysis of equipment emissions in the 8-hour Ozone Attainment Plan. The 8-hour Ozone Attainment Plan has accounted for emissions related to operation and maintenance through consideration of industrial and travel activity levels, and vehicle use would be typical of the industry. Therefore, operation and maintenance would not conflict with the 8-hour Ozone Attainment Plan, and impacts would be less than significant.

Significance: Less than Significant

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

The air quality standards most applicable to the proposed project would be the SDAPCD significance thresholds for stationary sources (pursuant to Rule 20.1, et seq.) (Table 5.3-7). If construction emissions were to exceed stationary source thresholds, construction activities would have the potential to violate air quality standards or contribute substantially to existing violations.

Table 5.3-7 San Diego Air Pollution Control District Significance Thresholds

Pollutants	Construction Threshold (pounds per day)
$PM_{2.5}$	55
PM_{10}	100
NO_x	250
SO_x	250
CO	550
VOC	75

Source: SDAPCD 2016
Key:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns
$PM_{2.5}$ = particulate matter less than 2.5 microns
SO_X = sulfur oxides
VOC = volatile organic compounds

NO_X and particulate matter are the primary air pollutants resulting from construction activities. The two greatest sources of these emissions are fugitive dust, vehicles and equipment, and helicopter use. Fugitive dust (i.e., PM_{10}) emissions have the potential to temporarily affect local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with excavation, trenching, and truck travel on unpaved roadways. Fugitive dust emissions can vary from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from construction is expected to be short term and would cease upon completion of construction. In addition, to reduce fugitive dust impacts to the greatest extent possible, the proposed project would incorporate the following air quality control measures from the Proposed Project Design Features and Ordinary Construction Restrictions:

SDAPCD Rule 55 Fugitive Dust Control Requirements. All unpaved construction areas would be watered, as necessary, during construction to reduce dust emissions and to meet SDAPCD Rule 55 requirements. SDG&E or its contractor would keep the construction area sufficiently dampened to control dust caused by construction and hauling, and would provide at all times reasonable dust control in areas subject to windblown erosion.

Exhaust emissions from construction activities include emissions associated with vehicles transporting machinery and supplies to and from the proposed project area, those produced onsite during use of equipment, those resulting from trucks transporting import and export materials, and those resulting from helicopter use. Emitted pollutants would include CO, VOCs, NOx, PM_{10}, and $PM_{2.5}$. CalEEMod is used to evaluate constructions emissions based on the activities described in Table 4-6 of ~~Section~~ Chapter 4.0, "Project Description." The model calculates the maximum daily emissions for a range of pollutants. The CalEEMod inputs and outputs are provided in an air quality emissions report that was prepared for the

proposed project, as revised to reflect overall emissions, including outputs from anticipated circuit breaker removal and replacement activities at the existing Del Mar Substation (Appendix A).

SDG&E indicates the potential for the use of two types of helicopters, the Kaman K-Max and/or Hughes 500, to facilitate conductor and pole removal in wetland and other sensitive areas where access limitations would preclude the use of ground-based crews, such as within the San Dieguito and Peñasquitos Lagoons. The analysis of construction-period helicopter emissions is based on a conservative assumption that both the Kaman K-Max and the Hughes 500 helicopters would be used in tandem for up to 8 hours per day for 10 days throughout the 12-month construction period. Helicopter emissions are evaluated using an approximation formula for fuel flow and emission factors as cited in the Federal Office of Civil Aviation, *Guidance on the Determination of Helicopter Emissions* (FOCA 2015). Duration of helicopter use (number of days used) and engine types (power mode) associated with both helicopter models factor into the emission profile estimates based on flight hours, included in Tables 5.3-8 and 5.3-9, below. The Air Quality Emissions Report (Appendix A), contains the detailed computation of helicopter emissions estimates.

The CalEEMod modeling outputs indicate that peak unmitigated emissions (without inclusion of those air quality control measures presented in the Proposed Project Design Features and Ordinary Construction Restrictions; see "Approach to Impact Assessment") would not exceed SDAPCD pollutant thresholds for any of the pollutants evaluated in Table 5.3-8.

Table 5.3-8 Peak Daily Uncontrolled Construction Emissions

Year: 2019						
	Emissions (pounds per day)					
Emission Source	$PM_{2.5}$	PM_{10}	NO_X	SO_X	CO	VOCs
Construction Equipment and Vehicles	12.39	58.20	137.44	0.30	116.56	13.67
Helicopter Use[(a)]	1.89	1.89	67.80	31.38	31.92	25.81
Substation Modifications	0.61	0.66	11.45	0.02	8.59	1.13
TOTAL	~~14.28~~ 14.89	~~60.09~~ 60.75	~~205.24~~ 216.69	~~31.68~~ 31.70	~~148.48~~ 157.07	~~39.48~~ 40.61
Threshold	55	100	250	250	550	75
Threshold Exceeded?	No	No	No	No	No	No

Note:
[(a)] See Appendix A, "Air Quality Emissions Report" for factors and assumptions contributing to helicopter air quality emission estimates during construction.

Key:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns
$PM_{2.5}$ = particulate matter less than 2.5 microns
SO_X = sulfur oxides
VOC = volatile organic compounds

As discussed under "Applicant-Proposed Measures," above, air quality control measures and Project Design Features and Ordinary Construction Restrictions are incorporated into CalEEMod modeling with the resulting controlled outputs presented in Table 5.3-9.

Table 5.3-9 Peak Daily Controlled Construction Emissions

Year: 2019						
	Emissions (pounds per day)					
Emission Source	$PM_{2.5}$	PM_{10}	NO_X	SO_X	CO	VOCs
Construction Equipment and Vehicles	9.20	26.23	137.44	0.30	116.56	13.67
Helicopter Use[(a)]	1.89	1.89	67.80	31.38	31.92	25.81
Substation Modifications	0.61	0.66	11.45	0.02	8.59	1.13
TOTAL	~~11.09~~ 11.70	~~28.12~~ 28.78	~~205.24~~ 216.69	~~31.68~~ 31.70	~~148.48~~ 157.07	~~39.48~~ 40.61
Threshold	55	100	250	250	550	75
Threshold Exceeded?	No	No	No	No	No	No

Note:
[(a)] Appendix A, "Air Quality Emissions Report" for factors and assumptions contributing to helicopter air quality emission estimates during construction.

Key:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns
$PM_{2.5}$ = particulate matter less than 2.5 microns
SO_X = sulfur oxides
VOC = volatile organic compounds

As shown in Table 5.3-9, implementation of air quality APMs would affect the $PM_{2.5}$ and PM_{10} emissions. Incorporation of APMs would result in an approximate ~~28~~ 21 percent decrease in $PM_{2.5}$ with control measures incorporated into construction; APMs would reduce an approximate additional ~~46~~ 53 percent of projected PM_{10} emissions over an uncontrolled scenario. Neither uncontrolled nor controlled emission rates from project construction would exceed applicable SDAPCD thresholds, and therefore, the project would not violate any air quality standard or contribute substantially to existing or projected air quality violations.

The vehicle trips and maintenance activities associated with the proposed project would be similar to the level of vehicle trips and maintenance activities prior to construction of the proposed project. Further, ~~it~~ maintenance activities would not involve the use of helicopters. Therefore, there would be no increase in CO, VOCs, NOx, PM_{10}, or $PM_{2.5}$ compared to existing conditions. In addition, removal of TL666D would reduce future operation and maintenance activities in the area compared to existing conditions. Therefore, project construction and operation would not violate applicable air quality standards, and the impact would be less than significant.

Significance: 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)?

The project area is in nonattainment for O_3 under both NAAQS and CAAQS, and in nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under CAAQS. Construction of the proposed project would result in emissions of O_3 precursors (CO, VOC, and NO_X) and fugitive dust, as shown in Table 5.3-9. However, the proposed project would not exceed the significance thresholds for O_3 precursors, $PM_{10,}$ or $PM_{2.5}$, and thus would not

contribute considerably to a significant cumulative impact to O_3, PM_{10}, or $PM_{2.5}$. The cumulative impact from project emissions of CO, VOC, and NO_X would not be considerable.

In addition, all off-road diesel equipment, on-road heavy-duty diesel trucks, and portable diesel equipment used for the proposed project would meet the state's applicable airborne toxic control measures for control of DPM or NO_X exhaust emissions (e.g., applicable airborne toxic control measures for portable diesel engines, off-road vehicles, and heavy-duty on-road diesel trucks, and five-minute diesel engine idling limits). This would further reduce both O_3 precursor and PM emissions. While less than significant, conformance to SDAPCD Rule 55 requirements by watering all unpaved construction areas, as necessary, during construction to control dust caused by construction and hauling emissions would further reduce fugitive dust emissions that likely contribute to PM_{10} and $PM_{2.5}$ discharge. Therefore, construction of the proposed project would not contribute to cumulatively considerable increases of any criteria pollutant for which the region is in nonattainment. The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. Operation and maintenance activities would be similar to current emissions, and thus impacts would be less than significant.

Significance: Less than Significant

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

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The proximity of sensitive receptors to any single work area would range from approximately 35 to 355 feet. Furthermore, construction equipment would continuously move throughout the corridor work areas so that no single sensitive receptor would experience persistent exposure to pollutants.

Diesel exhaust would be emitted from heavy equipment during Pole 2 and Pole 3 installation (i.e., grading, work pads, construction foundation) and transport of equipment and personnel, as part of the TL674A Reconfiguration. Jet fuel (a type of aviation fuel designed for use in aircraft powered by gas-turbine engines, generally kerosene-based fuels) exhaust would be emitted from light- and heavy-duty helicopters during the conductor and pole removal process, and the modification process in areas where access limitations would prevent the use of ground-based crews (e.g., San Dieguito and Peñasquitos Lagoons). Residential uses are located as near as 34 feet and schools about 27 feet from the closest project work area. Regarding helicopter use and the potential for exposure to up to 10 days of helicopter use would occur throughout the 12-month construction period. Conservatively, Table 5.3-9, above, illustrates that pollutant concentration emitted from helicopter use during construction would be below applicable SDAPCD thresholds and therefore not anticipated to expose sensitive receptors with considerable pollutant concentrations.

Similarly, diesel exhaust particulate matter would be emitted from heavy equipment during trenching and underground duct bank construction. Residential uses are located as close as 91 feet from underground work areas. However, most residential uses would be located further away from the proposed project's components than that.

The limited duration and limited quantities of equipment at any single work area would ensure that pollutant exposure to any individual receptor would be limited. The use of construction equipment and occasional and limited use of helicopters would not result in excessive emissions concentrations at any one location because the project's specific activities could vary throughout the day, and it is assumed highly unlikely that power tools would remain operational for an entire day. It is assumed that tools would be made operational when needed and turned when not in use. Additionally, the temporal nature of the construction schedule over the 12 month construction period means that work would be conducted in multiple areas simultaneously, with equipment and helicopters would be dispersed throughout the project work area. Equipment and helicopters would continuously move throughout utility corridors depending on the particular activity. Because most pole removal work involving helicopter use at sites in and over open space areas, hundreds or more feet from receptors in residential adjacent residential neighborhoods hoovering above where the helicopters' exhaust would disperse and dissipate by the force prevailing wind currents. As such, no single sensitive receptor would experience persistent exposure to pollutants and impacts would be less than significant.

Earthmoving activities and helicopter work associated with pole removal and installation along TL674A and TL666D work areas could produce fugitive dust emissions in sufficient concentrations to be a nuisance for sensitive receptors nearby and result in a significant impact if measures were not implemented to suppress the amount of dust released into the local atmosphere. SDG&E's conformance to SDAPCD Rule 55 requirements by watering construction areas with loose soil and restricting construction activities during high winds would ensure fugitive dust emissions would not be substantial and adverse.

The project's operation and maintenance activities would not expose receptors in the vicinity of project to substantial pollutant concentrations. The utility lines are not stationary pollution sources and any air quality emissions associated with routine maintenance would be from nominal equipment use and mobile sources associated with automobile trips that would transport maintenance crews to the job site. These emissions are expected to be equal to or lesser than the frequency, intensity and duration of those that currently occur. As a result, this impact is considered less than significant.

Significance: Less than Significant

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

Construction of the proposed project would generate odors from diesel exhaust emissions that could be a nuisance for residents living directly adjacent to construction work areas. These emissions would be temporary in nature and would be limited by the small number of vehicles at any given site and the distance from any sensitive receptor. In addition, trucks and vehicles in loading and unloading queues would have engines turned off after five minutes when not in use, which would further minimize the generation of odors from diesel exhaust emissions. Therefore, impacts would be less than significant.

Operation and maintenance activities would not generate any significant sources of odor causing pollutants beyond baseline conditions, and there would be no operational odor impacts associated with the proposed project.

Significance: Less than Significant

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