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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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.3.1 Introduction

This section of the PEA describes the existing air quality in the Proposed Project area and potential impacts relating to air quality and greenhouse gases (GHG) associated with construction and operation of the Proposed Project. Construction may result in temporary, short-

term impacts to air quality conditions in the immediate Proposed Project area, primarily from fugitive dust and nitrogen oxide. However, the Proposed Project would not expose sensitive receptors to increased pollutant concentrations, conflict with air quality plans or standards, or otherwise significantly affect air quality. Operation and maintenance of the Proposed Project would have a less than significant impact on air quality.

4.3.2 Methodology

The existing air quality in the Proposed Project area was researched using data obtained from the South Coast Air Quality Management District (SCAQMD)’s network of air quality monitoring stations. Recent regulations and guidance from the USEPA, California Air Resources Board (CARB), CPUC, and SCAQMD were also reviewed.

Federal, state, and regional regulations and policies were consulted to determine the Proposed Project’s level of compliance with and impact, if any, to applicable air quality plans and/or standards. To address construction emissions and impacts, the SCAQMD’s *CEQA Air Quality Handbook* and the SCAQMD’s *Localized Significance Threshold Methodology* were used. Standard methodologies to calculate construction equipment emissions were based on CARB’s OFFROAD model, which provides emission factors for off-road equipment. Emissions of fugitive dust were calculated based on methodologies presented in the USEPA’s *Compilation of Air Pollutant Emission Factors* references and the SCAQMD *CEQA Air Quality Handbook*.

4.3.3 Existing Conditions

4.3.3.1 Air Quality Regulatory Setting

Federal

Ambient Air Quality Standards

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act of 1970 and its 1977 and 1990 Amendments. The Clean Air Act required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for six pollutants (called “criteria” pollutants): carbon monoxide (CO), ozone, particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere.

The 1977 Clean Air Act Amendments required each state to develop and maintain a State Implementation Plan for each criteria pollutant that exceeds the NAAQS. The State Implementation Plan serves as a tool to develop strategies to reduce emissions of pollutants that cause exceedances of the NAAQS, and to achieve compliance with the NAAQS. The State Implementation Plan outlines federally enforceable rules, regulations, and programs designed to reduce emissions and bring the area into attainment of the NAAQS. In 1990, the Clean Air Act was amended to strengthen regulation of both stationary and mobile

sources of criteria pollutants, and also to implement regulations to control emissions of hazardous air pollutants and ozone-depleting substances.

In September 1997, the USEPA promulgated 8-hour ozone and 24-hour and annual national standards for particulate matter less than 2.5 microns in diameter (PM_{2.5}). The USEPA has issued attainment designations for these pollutants and, as of July 15, 2005, rescinded the 1-hour ozone NAAQS.

The Clean Air Act allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards.

NAAQS and California Ambient Air Quality Standards (CAAQS) for each of these pollutants are shown in Table 4.3-1, Ambient Air Quality Standards. The South Coast Air Basin (Basin) is currently considered a nonattainment area for the CAAQS and NAAQS for ozone, PM₁₀, PM_{2.5}, and carbon monoxide. A brief description of the criteria pollutants follows.

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when reactive organic compounds and nitrogen oxides, both byproducts of combustion, react in the presence of ultraviolet light. Ozone is present in relatively high concentrations in the Basin. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Carbon monoxide. Carbon monoxide is a product of combustion, and the main source of carbon monoxide in the Basin is from motor vehicle exhaust. Carbon monoxide is an odorless, colorless gas. Carbon monoxide affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. Carbon monoxide can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen dioxide. Nitrogen dioxide is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxides with oxygen. Nitrogen dioxide is a respiratory irritant and may affect those with existing respiratory illness, including asthma. Nitrogen dioxide can also increase the risk of respiratory illness.

Fine particulate matter. Fine particulate matter, or PM₁₀, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM₁₀ arises from a variety of sources, including road dust, diesel exhaust, combustion, tire and break wear, construction operations, and windblown dust. PM₁₀ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. In 1997, the USEPA proposed a new standard for PM_{2.5}, which is particulate matter with an aerodynamic diameter of 2.5 microns or less. These finer particulates are considered to have the potential to lodge deeper in the lungs.

Table 4.3-1: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards ^a	
			Primary ^{b,c}	Secondary ^{b,d}
O ₃	8-hour	0.070 ppm (137 µg/m ³)	0.075 ppm(147 µg/m ³)	Same as primary
	1-hour	0.09 ppm (180 µg/m ³)	—	—
CO	8-hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	—
NO ₂	Annual	0.030 ppm (56 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary
	1-hour	0.18 ppm (338 µg/m ³)	0.100 ppm (188 µg/m ³) ^(e)	—
SO ₂	24-hour	0.04 ppm (105 µg/m ³)	—	—
	3-hour	—	—	0.5 ppm (1,300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³) ^(f)	—
PM ₁₀	Annual	20 µg/m ³	—	—
	24-hour	50 µg/m ³	150 µg/m ³	Same as primary
PM _{2.5}	Annual	12 µg/m ³	15.0 µg/m ³	
	24-hour	—	35 µg/m ³	
Pb	Rolling 3-month period	—	0.15 µg/m ³	Same as primary
	Calendar Quarter	—	1.5 µg/m ³	Same as primary
	30-day average	1.5 µg/m ³	—	—
H ₂ S	1-hour	0.03 ppm (42 µg/m ³)	—	—

Notes:

- (a) Standards other than the 1-hour ozone, 24-hour PM₁₀, 24-hour PM_{2.5}, and those based on annual averages are not to be exceeded more than once a year. The 8-hour ozone national standard has replaced the 1-hour ozone national standard.
- (b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis. Note that µg/m³ is equivalent to micrograms per cubic meter.
- (c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that State’s Implementation Plan is approved by the USEPA.
- (d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- (e) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
- (f) On June 2, 2010, USEPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

Source: CARB, 2012

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

Lead. Lead in the atmosphere occurs as particulate matter. Lead has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts 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.

State

Air Quality Plans and Regulations

The California Clean Air Act of 1988 established the CARB as the state agency responsible for the maintenance of air quality within the State of California. The CARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H₂S), vinyl chloride, and visibility-reducing particles (refer to Table 4.3-1). Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant.

The CARB is the state regulatory agency with authority to enforce regulations to achieve and maintain both the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the State's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations.

Health-based air quality standards have been established by California for the criteria air pollutants regulated by the NAAQS (ozone, carbon monoxide, nitrogen dioxide, PM₁₀, PM_{2.5}, sulfur dioxide, and lead), and additionally for sulfates, hydrogen sulfide, and vinyl chloride. These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution. Hydrogen sulfide and vinyl chloride are currently not monitored in the Basin because these contaminants are not seen as a significant air quality problem.

The CARB enforces the CAAQS and works with the state's Office of Environmental Health Hazard Assessment in identifying toxic air contaminants (TACs) and establishing and enforcing rules governing TAC sources, including the Air Toxics Hot Spots Information and Assessment Act of 1987. Under the Act, sources of TACs are required to report their emissions, and facilities that are identified as having the potential to expose individuals to an elevated risk must

prepare a health risk assessment and provide information to the public regarding their exposure to TAC emissions.

The CARB also regulates mobile sources in the State of California, including off-road construction equipment, marine vessels, and agricultural equipment; and on-road motor vehicles. Programs governing mobile sources include enactment of motor vehicle emission standards; programs to reduce emissions from diesel-powered off-road and on-road sources; the Portable Equipment Registration Program, and the Airborne Toxic Control Measures that apply to a variety of source categories within the state.

Attainment Status

The CARB designates portions of the State where federal or State ambient air quality standards are not met as nonattainment areas. Table 4.3-2, South Coast Air Basin Attainment Classification for Criteria Pollutants, summarizes the air quality attainment status for the Basin. Where a pollutant exceeds standards, the federal and State Clean Air Acts require air quality management plans that demonstrate how the standards will be achieved. These plans provide the basis for the implementing agencies to develop regulations governing air quality and to develop mobile and stationary source standards.

Table 4.3-2: South Coast Air Basin Attainment Classification for Criteria Pollutants

Pollutant	CAAQS Attainment Classification	NAAQS Attainment Classification
Ozone	Nonattainment	Extreme nonattainment
Carbon monoxide	Attainment	Maintenance
Nitrogen dioxide	Attainment	Maintenance
Sulfur dioxide	Attainment	Attainment
Particulate matter less than 10 microns in diameter	Nonattainment	Serious nonattainment
Particulate matter less than 2.5 microns in diameter	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment
Sulfates	Attainment	Not applicable
Hydrogen sulfide	Unclassified	Not applicable
Vinyl chloride	Unclassified	Not applicable
Source: CARB, Standards and Area Designations, http://www.arb.ca.gov/desig/desig.htm		

Local

The air districts in California are responsible for regulating stationary sources within their jurisdictions, and for preparing air quality plans required under the Clean Air Act and the California Clean Air Act. While a portion of the Proposed Project is located in San Diego

County within the San Diego Air Basin, the majority of the Proposed Project is located within the Basin. The portion within San Diego County is located adjacent to the boundary with Orange County where air quality is similar to that in the Basin. Because Basin standards are more stringent than San Diego Air Basin standards, Basin standards were used to evaluate the Proposed Project

The SCAQMD is the local agency responsible for planning, implementing, and enforcing state and federal ambient air quality standards within the Basin. The SCAQMD has developed its Air Quality Management Plan (AQMP), which summarizes the measures and regulations that have been or will be implemented to govern air quality in the Basin and meet the ambient air quality standards. The AQMP includes strategies for meeting the 8-hour ozone standard and the particulate standards and a maintenance plan for the carbon monoxide standard.

Emission limitations are imposed upon sources of air pollutants operating in the Basin by the SCAQMD's Rules and Regulations, and statewide by the CARB. Operation of emission sources in the construction of the Proposed Project would not interfere with progress toward attainment of the federal and State standards, provided they are compliant with applicable regulations. The following SCAQMD rules apply to the Proposed Project:

- SCAQMD Rule 401 – Visible Emissions: This rule prohibits any activity that will create air contaminant emissions darker than No. 1 on the Ringlemann Chart for more than an aggregate of three minutes in any consecutive 60-minute period.
- SCAQMD Rule 402 – Nuisance: This rule prohibits the discharge of such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or injury or damage to property.
- SCAQMD Rule 403 – Fugitive Dust: This rule sets forth the requirements to include fugitive dust control measures for all construction activities. Rule 403 also requires implementing a fugitive dust control plan and Best Available Control Measures to reduce emissions of fugitive dust.

4.3.3.2 Greenhouse Gases and Global Climate Change Regulatory Setting

Overview

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), which are known as GHGs. These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere.

Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions from human activities, such as burning fossil fuels for electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

The State of California has been at the forefront of developing solutions to address global climate change. 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/or human activities that change the composition of the atmosphere and alter the surface and features of land.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Intergovernmental Panel on Climate Change concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) carbon dioxide equivalent concentration is required to keep global mean temperature increases below 3.6° Fahrenheit (2° Celsius), which is assumed to be necessary to avoid dangerous climate change.

California Health and Safety Code Section 38505(g) defines GHGs as any of the following compounds: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Carbon dioxide, followed by methane and nitrous oxide, are the most common GHGs that result from human activity.

The State of California GHG Inventory performed by the CARB, compiled statewide anthropogenic GHG emissions and sinks, which include processes that uptake GHG emissions (Table 4.3-3, State of California Greenhouse Gas Emissions by Sector). It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The current inventory covers the years 1990 to 2008, and is summarized in Table 4.3-3. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the Intergovernmental Panel on Climate Change. The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation.

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

Sector	Total 1990 Emissions (MMTCO ₂ e) ¹	Percent of Total 1990 Emissions	Total 2008 Emissions (MMTCO ₂ e)	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)	

¹ MMTCO₂e refers to million metric tons of carbon dioxide equivalent emissions.

Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.

When accounting for GHGs, all types of GHG emissions are expressed in terms of carbon dioxide equivalents (CO₂e) and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. According to the 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; therefore, carbon dioxide has a global warming potential of 1. The other main GHGs that have been attributed to human activity include methane, which has a global warming potential of 21, and nitrous oxide, which has a global warming potential of 310. Table 4.3-4, Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases, presents the global warming potential and atmospheric lifetimes of common GHGs.

Table 4.3-4: 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 ₂ O	310	120
Sulfur Hexafluoride	SF ₆	23,900	3,200

Source: California Climate Action Registry General Reporting Protocol, Version 3.1. 2009. January.

Human-caused sources of carbon dioxide include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that carbon dioxide concentrations

remained steady prior to the current period for approximately 10,000 years. Concentrations of carbon dioxide have increased in the atmosphere since the industrial revolution.

Methane is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure and cattle farming. Human-caused sources of nitrous oxide include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

All levels of government have some responsibility for the protection of air quality, and each level (Federal, State, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs are a relatively new component of air quality.

Global climate change is being addressed at both the international and federal levels. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports from the Intergovernmental Panel on Climate Change have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

Federal

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change. Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of global climate change. Recently, the United States Supreme Court declared in the court case of Massachusetts et al. vs. the Environmental Protection Agency et al., 549 C.S. 497 that the USEPA does have the ability to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

Endangerment Finding

On April 17, 2009, USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHG 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 the 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 Gasses, 40 C.F.R. Part 98

The USEPA's rule titled Mandatory Reporting of Greenhouse Gases (40 C.F.R. Part 98) requires mandatory reporting of GHGs for certain facilities. Subpart DD of the rule, titled Electrical Transmission and Distribution Equipment Use, applies to sulfur hexafluoride 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 [kg]) of sulfur hexafluoride and/or perfluorocarbon must report emissions of hexafluoride and/or perfluorocarbon 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 hexafluoride and perfluorocarbon 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 hexafluoride or perfluorocarbon;
- Gas containers such as pressurized cylinders;
- Gas carts;
- Electric power transformers; and
- Other containers of hexafluoride or perfluorocarbon.

Facilities subject to subpart DD must begin monitoring GHG emissions on January 1, 2011 in accordance with the methods specified in subpart DD. For 2012 only, the GHG report must be submitted to USEPA by September 28, 2012. In future years, the deadline for reporting is March 31, unless that date falls on a weekend, in which case the report is due the next business day.

State

The following subsections describe regulations and standards that have been adopted by the State of 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 bill, into law. AB 32 directs the CARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that CARB finds necessary to achieve the statewide GHG emissions limit.
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

AB 32 required that by January 1, 2008, CARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB adopted its Scoping Plan in December 2008, which provided estimates of the 1990 GHG emissions level and identified sectors for the reduction of GHG emissions. The CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO₂-equivalent. The CARB estimates that a reduction of 173 MMT net CO₂-equivalent emissions below business-as-usual would be required by 2020 to meet the 1990 levels. This amounts to a 15-percent reduction from today’s levels, and a 30-percent reduction from projected business-as-usual levels in 2020.

The CPUC and California Energy Commission (CEC) concluded a lengthy proceeding in October 2008 to provide electricity and natural gas-specific recommendations to the CARB for inclusion in its Scoping Plan and AB 32 regulations and programs. The CARB adopted a comprehensive AB 32 Scoping Plan in December 2008 that outlined programs designed to achieve the 2020 GHG reduction goal of 174 million metric tons of carbon dioxide equivalent emissions through regulations, market mechanisms, and other actions.

For the electricity sector, the scoping plan adopted the fundamental recommendations of the CPUC 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 the adoption of a cap and trade system to ensure an overall reduction of emissions from electric generation.

Throughout 2009, CARB staff drafted rules to implement the AB 32 Scoping Plan and held public workshops on each measure included in the AB 32 Scoping Plan. The CARB identified “Discrete Early Actions” that would be implemented to reduce GHG emissions from the years 2007 through 2012. On January 29, 2009, the CARB announced its regulatory schedule to adopt 74 separate regulations and other measures, including the enhanced energy efficiency programs and 33 percent Renewable Portfolio Standard. The early action measures identified within the AB 32 Scoping Plan took effect on January 2010.

The AB 32 Scoping Plan Measure H-6, which led to the CARB’s Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (CCR Title 17, § 95350-95359) applies directly to the Proposed Project due to the use of sulfur hexafluoride in substation equipment. This regulation sets the maximum emission rate for sulfur hexafluoride-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.

Senate Bill 97

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs Governor’s Office of Planning and Research (OPR) to develop draft CEQA guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions” by July 1, 2009 and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The OPR published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold, but stated that the OPR has asked CARB to, “recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state.” The OPR does recommend that CEQA analyses include the following components:

- Identify GHG emissions;
- Determine Significance; and
- Mitigate Impacts.

In April 2009, the OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other GHG reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the quantitative and qualitative models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing *CEQA Guidelines*, OPR

encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the *CEQA Guidelines*.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

On July 3, 2009, the California Natural Resources Agency published a proposed amendment of regulations based on OPR’s proposed revisions to CEQA to address GHG emissions. On that date, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code Section 21083.05. Having reviewed and considered all comments received, the Natural Resources Agency revised the CEQA regulation. The new regulations became effective on March 18, 2010.

Senate Bill 375

Senate Bill 375, enacted in 2009, requires the CARB to develop regional reduction targets for GHGs, and prompts the creation of regional plans to reduce emissions from vehicle use throughout the state. California’s 18 Metropolitan Planning Organizations (MPOs) have been tasked with creating “Sustainable Community Strategies” (SCS). The MPOs must develop the SCS through integrated land use and transportation planning and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.

As the MPO for the Proposed Project region, the Southern California Association of Governments (SCAG) is required to do the following:

- Prepare a SCS as part of the 2012 Regional Transportation Plan (RTP). The SCS will meet a State-determined regional GHG emission reduction target, if it is feasible to do so.
- Prepare an Alternative Planning Strategy (APS) that is not part of the RTP if the SCS is unable to meet the regional target.
- Integrate SCAG planning processes, in particular assuring that the Regional Housing Needs Assessment (RHNA) is consistent with the SCS, at the jurisdiction level.
- Specific to SCAG only, allow for subregional SCS/APS development.
- Develop a substantial public participation process involving all stakeholders.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order S-3-05 also calls for the California Environmental Protection Agency (CalEPA) to prepare biennial science reports on the potential impact of continued global climate change on certain sectors of the California economy. The first of these reports, “Our Changing Climate: Assessing Risks to California,” and its supporting document “Scenarios of Climate Change in California: An Overview” were published by the California Climate Change Center in 2006.

State Standards Addressing Vehicular Emissions

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. The CARB has adopted amendments to the “Pavley” regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments, approved by the CARB on September 24, 2009, are part of California’s commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. CARB’s September amendments cemented California’s enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility. The amendments also prepared California to harmonize its rules with the federal rules for passenger vehicles.

Executive Order S-21-09

Executive Order S-21-09 was enacted by the Governor on September 15, 2009. Executive Order S-21-09 requires that the CARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target as established in Executive Order S-14-08. Under Executive Order S-21-09, the CARB will work with the CPUC and CEC to encourage the creation and use of renewable energy sources, and will regulate all California utilities.

The CARB will also consult with the CAISO and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the CARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

Global Climate Scenarios Report

The Climate Scenarios Report uses a range of emissions scenarios developed by the Intergovernmental Panel on Climate Change 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 degrees Fahrenheit (°F)); medium warming range (5.5 to 8.0 °F); and higher warming range (8.0 to 10.5 °F). The Climate Scenarios 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 emissions of GHGs 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 PM_{2.5} could further compromise air quality. The Climate Scenarios 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 the State 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. The State'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 GHG 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. This effect of global climate change is not anticipated to affect the Proposed Project site directly because there are no agricultural uses present.

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. Continued global warming would also affect natural ecosystems and biological habitats throughout the State. This effect of global climate change could affect current ecosystems/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 the State. Should global climate change in the southern California region lead to increased risk of wildfires, this impact will not likely affect the Proposed Project area as it is in an urbanized area without a high level of adjacent wildlands and SDG&E implements safety and design standards to minimize the risk of fires (refer to Section 4.7, Hazards and Hazardous Materials).

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the State'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. Because the Proposed Project site is not located within the coastal zone, sea level risk would not affect the Proposed Project.

SDG&E Programs

SDG&E has been engaged in programs to increase energy efficiency for many years. It has also increased the portion of its electricity generation portfolio devoted to renewable resources of energy. SDG&E is required to submit long-term procurement plans (LTPP) to the CPUC that describe its strategy for meeting forecasted load during the coming 10 years. These plans must be consistent with the "loading order" prescribed in the Energy Action Plan to meet first growth 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. SDG&E's LTPP was approved by the CPUC in September 2008 and provides for all substantial forecasted additional reduction in GHG emissions by 2016 through the following programs:

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

Forecasted reductions from these programs are greater than 1.5 MMT CO₂-equivalent per year. Approval by the CPUC will be required for future expenditures to implement these programs. These efforts will result in a carbon intensity reduction of one-third while accommodating continued population growth, and will ensure consistency with the applicable plans, policies and regulations adopted by the State of California for the purpose of reducing the emissions of greenhouse gases.

4.3.3.3 Existing Air Quality and Climate Conditions

Southern California's climate is characterized by hot, dry summers and mild to cold winters with seasonally heavy precipitation that occurs primarily during the winter months. The meteorological conditions in the region are influenced by the Eastern Pacific High, a strong, persistent high-pressure system that blocks migrating storm systems over the eastern Pacific Ocean. The area is also influenced by the moderating effects of the Pacific Ocean and the presence in the Proposed Project area of mountain ranges that block air flow. Seasonal variations in the position and strength of the Eastern Pacific High are key factors in the weather changes in the area. The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when it is centered west of Northern California.

In this location, this high effectively shelters Southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the high produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally 1,000 to 2,500 feet above mean sea level during the summer. Vertical mixing is often limited to the base of the inversion and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the greater Los Angeles area constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region.

Average annual temperatures in the area as measured in Laguna Beach is 61.1 °F. The warmest month is August, with an average maximum temperature of 78.1 °F. The coldest month is January, with an average minimum temperature of 43.0 °F. The region receives an average of 12.53 inches of precipitation annually. The majority of the precipitation falls in the winter months.

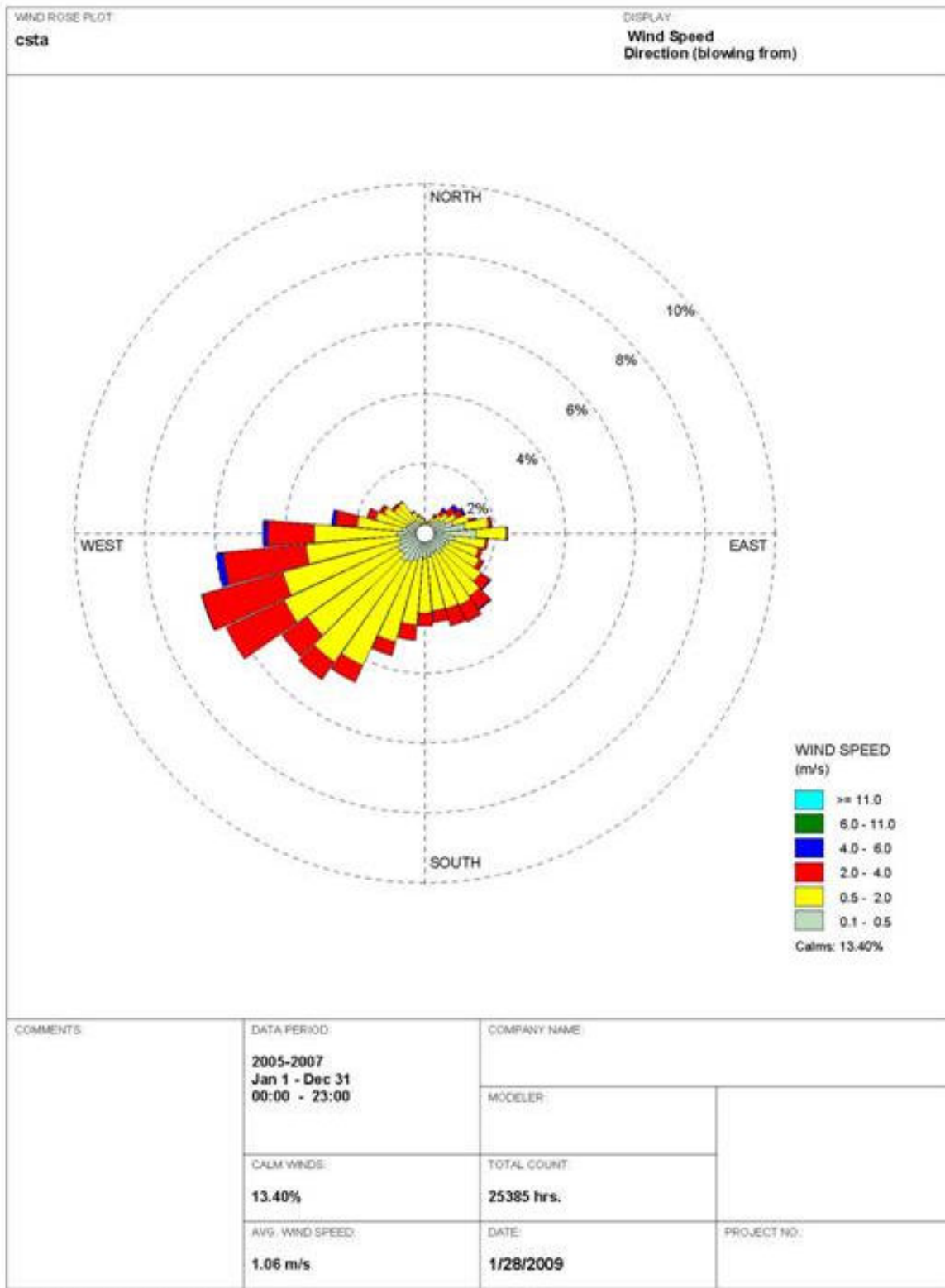
General elevation along the Proposed Project route varies between approximately 150 and 700 feet. The lower elevations are found near the existing Capistrano and Talega Substations and the highest elevations are found near Transmission Line Segment 2 (near Pole No. 14) and Segment 3 (near Pole Nos. 25 through 27).

Figure 4.3-1, South Orange County 138 kV Substation Wind Speed Diagram, provides a wind rose for Costa Mesa, which is the closest meteorological station where the SCAQMD collects meteorological data. The wind rose shows prevailing winds in the Proposed Project area.

The closest ambient air quality monitoring stations to the Proposed Project are the Mission Viejo monitoring station, which measures ozone, carbon monoxide, PM_{2.5}, and PM₁₀, and the Costa Mesa station, which measures nitrogen dioxide. Ambient concentrations of criteria pollutants measured at these monitoring stations during the period 2008 to 2010 are presented in Table 4.3-5, Background Air Quality Data (2008 to 2010). Ambient air concentrations were compared with the CAAQS and NAAQS. The data indicate that the area is in compliance with both CAAQS and NAAQS for carbon monoxide and nitrogen dioxide. The state 8-hour carbon monoxide standard was not exceeded during this three-year period. The maximum measured concentrations of nitrogen dioxide each year were less than the 0.18 parts per million 1-hour State standard and the national annual standard. It should be noted that the Los Angeles portion of the Basin has been designated as a nonattainment area for nitrogen dioxide.

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South Orange County Reliability Enhancement Project
 South Orange County 138kV Substation
 Wind Speed Diagram

Figure 4.3-1

Source: SDG&E



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Exceedances of the ozone standards and PM₁₀ and PM_{2.5} standards have been recorded at the Mission Viejo monitoring station. The 8-hour NAAQS for ozone was exceeded 15 times in 2008, 10 times in 2009, and twice in 2010. Data for 2008 through 2010 indicate that exceedances of the particulate standards were observed in the Proposed Project area.

Table 4.3-5: Background Air Quality Data (2008 to 2010)

Pollutant	Averaging Time	2008 ¹	2009 ¹	2010 ¹	NAAQS ¹	CAAQS ¹	Monitoring Station
Ozone	8 hour	0.104	0.095	0.082	0.075	0.070	Mission Viejo
	1 hour	0.118	0.121	0.117	-	0.08	Mission Viejo
PM ₁₀	Annual Arithmetic Mean	22.6	23.6	18.1	-	20 µg/m ³	Mission Viejo
	24 hour	42	56	34	150 µg/m ³	50 µg/m ³	Mission Viejo
PM _{2.5}	Annual Arithmetic Mean	10.3	9.4	7.9	15 µg/m ³	12 µg/m ³	Mission Viejo
	24 hour	32.6	39.2	19.9	35 µg/m ³	-	Mission Viejo
NO ₂	Annual	0.013	0.013	0.011	0.053	0.030	Costa Mesa
	1 hour	0.081	0.065	0.070	-	0.18	Costa Mesa
CO	8 hour	1.10	1.00	0.90	9	9.0	Mission Viejo
Notes:							
¹ Units are in parts per million unless otherwise indicated.							
Source: www.arb.ca.gov							

4.3.3.4 Sensitive Receptors

Some exposed population groups, including children, the elderly, and the ill, can be especially vulnerable to airborne chemicals and irritants and are termed “sensitive receptors.” Additionally, due to sustained exposure durations and frequencies, all persons located within residential areas are considered to be sensitive receptors.

Figure 4.9-1 shows an aerial map of the transmission line corridors and Proposed Project components. The Proposed Project transmission line corridors transit areas that include recreational (parks, golf courses) and residential receptors.

As shown on Figure 4.9-1, residential developments are located in the following areas:

- The Talega neighborhood, San Clemente, north of East Avenida Pico and west of Christianitos Road;
- San Juan Capistrano, east of I-5 on the north and south sides of SR-74; and

- San Juan Capistrano, west of I-5 near the Capistrano Substation site.

Recreational receptors near the transmission line corridor include the following:

- Bella Collina Towne & Golf Club, San Clemente;
- Junipero Serra Park, San Juan Capistrano;
- El Camino Real Park, San Juan Capistrano;
- Arroyo Park, San Juan Capistrano;
- Talega Golf Club, San Clemente;
- C Russell Cook Park, San Juan Capistrano; and
- Marbella Country Club, San Juan Capistrano.

In addition, the following schools are located within 0.25 miles of the existing and proposed transmission lines and/or substations included within the Proposed Project (See Sections 4.7, Hazards and Hazardous Materials and 4.9, Land Use and Planning for additional information on schools located within 0.25 mile of the Proposed Project):

- JSerra Catholic High School;
- Saddleback Valley Christian School;
- Capistrano Connections Academy;
- San Juan Hills High School;
- Marbella Montessori School;
- St. Margaret’s Episcopal School;
- Talega Preparatory Academy;
- Vista Del Mar Middle School; and
- Harold Ambuehl Elementary School.

These receptors would be considered sensitive receptors that could be affected by the Proposed Project.

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.

The SCAQMD has adopted significance thresholds in its SCAQMD CEQA Air Quality Handbook for air quality that define whether a project could have a significant impact. These thresholds are arranged in three parts starting with the broadest and narrowing to the most specific. The general thresholds are derived from Appendix G of the state *CEQA Guidelines*, and indicate that a project could have potentially significant impacts if it could:

- 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 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 release emissions which exceed quantitative thresholds for ozone precursors); or
- d. Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates.

The second level of significance set forth in the SCAQMD's significance thresholds presents quantitative emissions thresholds by which to evaluate whether a project's impacts could have a significant impact on air quality. The quantitative emission thresholds are included in Table 4.3-6, Air Quality Significance Thresholds.

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Table 4.3-6: Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
NO _x	100 lbs/day	55 lbs/day
ROG	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden ≥ 0.5 (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO ₂ e for industrial facilities	
Ambient Air Quality for Criteria Pollutants		
NO ₂	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 (state) and 0.0534 (federal)	
PM ₁₀ 24-hour average annual average	10.4 µg/m ³ construction and 2.5 µg/m ³ operation 1.0 µg/m ³	
PM _{2.5} 24-hour average	10.4 µg/m ³ construction and 2.5 µg/m ³ operation	
SO ₂ 1-hour average 24-hour average	0.25 ppm (state) and 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 µg/m ³ (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 0.0 (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	1.5 µg/m ³ (state) 0.15 µg/m ³ (federal) 1.5 µg/m ³ (federal)	
Notes: µg/m ³ = microgram per cubic meter; pphm = parts per hundred million; mg/m ³ = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material		
Source: SCAQMD, http://www.aqmd.gov/ceqa/handbook/signthres.pdf		

To further evaluate the potential for significant impacts associated with the construction phase, the SCAQMD’s *Final Localized Significance Threshold Methodology* was used because the segments of the Proposed Project relevant for air quality analysis purposes are five acres or less in size. The Localized Significance Threshold (LST) Methodology provides a look-up table for construction and operational emissions based on the emission rate, location, and distance from receptors, and provides a methodology for air dispersion modeling to evaluate whether a

construction or operation could cause an exceedance of an ambient air quality standard. The SCAQMD recommends the use of the LST Methodology to address potential localized impacts from construction and operations. While the LST lookup tables are applicable only to sources that are five acres or less in size and the Proposed Project overall has a larger footprint than five acres, it is reasonable to assume that active construction activities at any given time would be conducted on five acres in a single localized area. It is therefore appropriate to use the LST Methodology for a five-acre site as a conservative means of evaluating potential impacts. The LST Methodology applies to on-site emissions and does not apply to emissions from on-road vehicles. The LST Methodology only applies to impacts to nitrogen dioxide, carbon monoxide, PM₁₀, and PM_{2.5} concentrations.

There are other limitations of the LST Methodology; for example, as discussed in the Methodology guidance document, the LST look-up tables for construction impacts were developed for a typical construction workday (8 a.m. to 4 p.m.), and activities may occur outside these work hours assumed in the derivation of the tables. The LST look-up tables were derived using the USEPA's ISC3 model, which has since been superseded by the AERMOD model. As stated in the LST Methodology: "Screening procedures are by design conservative, that is, the predicted impacts tend to overestimate the actual impacts." The LST values therefore provide a means of conducting a screening analysis to assess whether a significant impact could occur due to project construction activities.

According to the LST Methodology, the Proposed Project is located in Source Receptor Area Zone 21, the Capistrano Valley Zone. The Capistrano Valley (Zone 21) encompasses the region from San Juan Capistrano south to the Orange County/San Diego County border, and extends east to the Orange County/Riverside County border, encompassing the entire region of the Proposed Project, including the cities of San Juan Capistrano and San Clemente. The LSTs for the Capistrano Valley are shown in Table 4.3-7, Localized Significance Thresholds, based on the distance to the nearest receptor.

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Table 4.3-7: Localized Significance Thresholds

Distance to Nearest Receptor, meters ¹	Pollutant (pounds per day)					
	NOx	CO	PM ₁₀ - Construction	PM ₁₀ - Operation	PM _{2.5} - Construction	PM _{2.5} - Operation
1 acre						
25	158	515	3	1	3	1
50	163	751	11	3	4	1
100	188	1,212	69	17	8	2
200	244	2,335	127	30	19	5
500	380	7,648	185	44	68	17
2 acres						
25	224	700	6	1	4	1
50	224	1,108	18	4	6	2
100	243	1,653	76	18	10	3
200	289	2,899	134	32	22	6
500	407	8,338	192	46	74	18
5 acres						
25	334	1,343	11	3	8	2
50	334	1,762	36	9	11	3
100	351	2,665	95	23	16	4
200	388	4,255	154	37	30	8
500	484	10,320	213	51	90	22
Notes:						
¹ 25 meters = 82 feet 50 meters = 164 feet 100 meters = 328 feet 200 meters = 656 feet 500 meters = 1,640 feet						
Source: South Coast Air Quality Management District Final Localized Significance Threshold Methodology (SCAQMD 2003) and South Coast Air Quality Management District Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 CEQA Significance Thresholds (SCAQMD 2006).						

For the purpose of evaluating impacts using the LSTs, it was assumed that construction would be occurring on five acres at a time, and that the nearest receptor would be located 25 meters from the site. The impacts associated with the Proposed Project were evaluated for significance based on these significance criteria.

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

Construction – Less than Significant Impact

The Proposed Project is within the SCAQMD’s jurisdiction. The Proposed Project would comply with applicable federal, State, and local laws. The most recent air quality management plan adopted by the SCAQMD for the Basin is the 2007 AQMP.

The control strategies proposed in the 2007 AQMP focus on emissions of PM_{2.5} and ozone precursors, and identify precursor emissions as the key source of PM_{2.5} in the atmosphere, as opposed to directly emitted PM_{2.5}. The Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, as it will be in compliance with applicable rules and regulations adopted by the SCAQMD for the purpose of attaining and maintaining the air quality standards. The 2007 AQMP anticipates construction activities in its emissions budget and assumes that projects would comply with requirements for construction equipment and control of fugitive dust emissions, thereby reducing emissions of PM_{2.5} and ozone precursors to the extent feasible. Through its compliance with applicable rules and regulations, the Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, and impacts will be less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The rebuilt substation would comply with the 2007 AQMP, however. SDG&E would also comply with ensure that all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, and impacts will be less than significant.

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

Construction – Significant Short Term Impact

The Proposed Project's air quality impacts are mainly attributable to the construction of the substations and transmission lines. Construction activities include the following:

Capistrano Substation

- Relocate, rebuild, and expand existing 138kV facilities with a new gas insulated substation on the lower yard of the site.
- Relocate, rebuild, and expand existing 12kV facilities on the lower yard.
- Build a new 230kV gas insulated substation at the existing 138/12kV location on the upper yard of the site.

Transmission Lines

- Extend existing 230kV transmission lines TL23007 and TL23030 from the Talega Substation area to the proposed San Juan Capistrano Substation Site, approximately 8.2 miles, by replacing existing 138kV transmission line.
- Remove and relocate 12kV distribution lines from within SDG&E's existing Talega to Capistrano utility corridor to accommodate the new 230kV double-circuit line.

- Relocated existing 69kV and 138kV transmission lines near the Talega Substation in order to make room for the new 230kV transmission lines.
- Reconnector a small segment of existing 138kV transmission line near the Pico Substation.
- Upgrade remote ends of 138kV and 230kV transmission lines affected as required.

Talega Substation

- Reconfigure Talega Substation to accommodate the new transmission line connections.

The proposed construction schedule for the Proposed Project is presented in Section 3, Proposed Project Description. The overall construction is anticipated to commence in November 2013 and be completed by November 2017.

Construction emissions would be generated from heavy construction equipment, vehicles, and fugitive dust. Emissions were estimated based on the construction schedule and equipment requirements for the Proposed Project provided by SDG&E. Heavy construction emissions were estimated using OFFROAD emission factors as provided by the SCAQMD, which represent the SCAQMD construction fleet. As such, the emission factors account for the implementation of requirements to meet Tier 2, Tier 3, and Tier 4 emission standards, and include equipment that meets these standards in the emission factors. The OFFROAD emission factors for the applicable year of construction (2013 through 2017) were used for each phase of construction based on the construction schedule. Based on information from the SCAQMD, use of equipment that meets at least Tier 2 standards would reduce nitrogen oxide by a minimum of 35 percent, reactive organic gases by a minimum of 70 percent, and particulate matter by a minimum of 20 percent from uncontrolled equipment. Emissions from worker vehicles and truck traffic were calculated using the EMFAC2011 emission factors on the CARB's website.

Emissions were calculated assuming fugitive dust and equipment BMPs would be employed to reduce emissions to the extent possible. These practices include fugitive dust control measures as required under SCAQMD Rule 403, and would include the following measures, listed with their anticipated emission reduction potential per SCAQMD Table XI-A, Fugitive Dust Mitigation Measures, Construction and Demolition:

- All unpaved demolition and construction areas shall be wetted at least three times daily during construction, and temporary dust covers shall be used to reduce dust emissions and meet SCAQMD District Rule 403 requirements (36-61).
- The owner or contractor shall keep the construction area sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion (36 to 61 percent).
- All loads shall be secured by covering or use of at least two feet of freeboard to avoid carry-over (91 percent).
- All materials transported offsite shall be either sufficiently watered or securely covered (91 percent).

- All earthmoving or excavation activities shall be discontinued during period of high winds (i.e., greater than 25 mph) to prevent excessive amounts of fugitive dust generation (98 percent).
- All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.
- General contractors shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after five 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.
- To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on site.
- Low- and non-volatile organic compound (VOC) containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings shall be used to reduce VOC emissions.
- All areas where construction vehicles are 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 will be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day.

Fugitive dust emissions would be controlled by a minimum of 61 percent; therefore, without use of best management practices to reduce dust, particulate emissions would be approximately 1.6 times higher.

Table 4.3-8a, Estimated Construction Emissions for Substation Construction, presents a summary of the daily construction emissions for the substation construction, for each phase of construction, in comparison with the SCAQMD significance thresholds. Table 4.3-8b, Estimated Construction Emissions for Transmission Line Construction, presents a summary of the daily construction emissions associated with construction of the transmission lines. Table 4.3-9, Estimated Maximum Simultaneous Construction Emissions, presents the maximum simultaneous daily emissions associated with Proposed Project construction.

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Table 4.3-8a: Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
<i>Total Construction Emissions, lbs/day</i>						
Talega Substation Site Development						
Heavy Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05
Construction Truck Trips	0.05	0.20	1.38	0.00	0.07	0.05
Fugitive Dust					61.93	18.22
TOTAL	0.31	5.24	1.85	0.01	62.14	18.31
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	0.00	0.00	0.00	0.00	61.93	18.22
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Talega Substation Below Grade						
Heavy Construction Equipment	4.27	17.37	35.27	0.05	1.67	1.49
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05
Construction Truck Trips	0.52	1.97	13.81	0.02	0.73	0.48
Fugitive Dust					26.36	8.29
TOTAL	5.05	24.39	49.54	0.08	28.90	10.31
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	4.27	17.37	35.27	0.05	28.03	9.78
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

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Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Talega Substation Construction						
Heavy Construction Equipment	2.45	8.25	18.09	0.03	0.78	0.69
Worker Vehicles	0.17	3.44	0.32	0.00	0.10	0.03
Construction Truck Trips	0.02	0.11	0.24	0.00	0.05	0.03
TOTAL	2.64	11.79	18.65	0.03	0.93	0.75
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	2.45	8.25	18.09	0.03	0.78	0.69
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation – Building Removal						
Heavy Construction Equipment	3.76	11.90	32.00	0.05	1.22	1.09
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Dust					39.00	8.19
TOTAL	4.19	20.49	32.80	0.06	40.48	9.36
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	3.76	11.90	32.00	0.05	40.22	9.28
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Capistrano Substation 138kV Site Development						
Heavy Construction Equipment	40.76	128.91	360.93	0.50	12.82	11.41
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	1.57	5.92	41.42	0.06	2.18	1.45
Fugitive Dust					61.93	18.22
TOTAL	42.76	143.42	403.14	0.56	77.19	31.17
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Total On-site Emissions	40.76	128.91	360.93	0.50	74.75	29.63
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Capistrano Substation 138kV –Below Grade						
Heavy Construction Equipment	12.55	42.66	103.07	0.17	3.95	3.52
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	3.22	12.10	129.93	0.19	5.51	3.24
Fugitive Dust					26.36	8.29
TOTAL	16.21	63.35	233.79	0.37	36.08	15.13
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	12.55	42.66	103.07	0.17	30.31	11.81
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Capistrano Substation 138kV– Substation Construction						
Heavy Construction Equipment	12.74	40.28	102.40	0.19	3.65	3.25
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	12.97	44.56	103.09	0.20	3.85	3.32
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	12.74	40.28	102.40	0.19	3.65	3.25
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 138kV– Relay Testing						
Heavy Construction Equipment	0.24	0.73	1.74	0.00	0.06	0.05
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	0.45	4.95	2.27	0.01	0.23	0.11

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	0.24	0.73	1.74	0.00	0.06	0.05
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 138kV– Energization						
Heavy Construction Equipment	0.47	1.46	3.47	0.01	0.12	0.10
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	0.69	5.68	4.01	0.01	0.29	0.16
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	0.47	1.46	3.47	0.01	0.12	0.10
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 138kV– Energize Temporary Lines						
Heavy Construction Equipment	1.13	5.23	8.31	0.01	0.47	0.42
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	1.35	9.45	8.84	0.02	0.64	0.48
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	1.13	5.23	8.31	0.01	0.47	0.42
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV – Remove Existing Equipment						
Heavy Construction Equipment	3.91	13.67	29.56	0.06	1.15	1.03
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Construction Truck Trips	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	4.12	17.83	29.95	0.06	1.29	1.07
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	3.91	13.67	29.56	0.06	1.15	1.03
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV – Site Development						
Heavy Construction Equipment	15.55	58.48	123.87	0.19	4.76	4.24
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08
Construction Truck Trips	0.42	1.58	11.05	0.02	0.58	0.39
Fugitive Dust					61.93	18.22
TOTAL	16.32	67.17	135.57	0.22	67.53	22.93
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	15.55	58.48	123.87	0.19	66.74	22.46
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV – Below Grade						
Heavy Construction Equipment	11.63	43.74	86.53	0.18	3.18	2.83
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08
Construction Truck Trips	2.42	9.08	97.45	0.14	4.13	2.43
Fugitive Dust					32.68	10.27
TOTAL	14.39	59.92	184.64	0.34	40.25	15.62
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	11.63	43.74	86.53	0.18	35.86	13.10
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Capistrano Substation 230kV – Substation Construction						
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	12.16	46.82	84.54	0.21	3.22	2.76
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	11.95	42.90	83.88	0.20	3.02	2.69
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV– Relay Testing						
Heavy Construction Equipment	0.22	0.72	1.53	0.00	0.05	0.05
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	0.42	4.58	2.03	0.01	0.22	0.11
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	0.22	0.72	1.53	0.00	0.05	0.05
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV– De-Energize Temporary Lines						
Heavy Construction Equipment	2.77	9.02	19.06	0.05	0.64	0.57
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	2.97	12.88	19.57	0.05	0.81	0.63
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	2.77	9.02	19.06	0.05	0.64	0.57
Localized Significance Threshold	N/A	1,343	334	N/A	11	8

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Capistrano Substation 230kV– Energization						
Heavy Construction Equipment	0.44	1.44	3.05	0.01	0.10	0.09
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	0.64	5.30	3.56	0.01	0.27	0.15
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	0.44	1.44	3.05	0.01	0.10	0.09
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

As shown in Table 4.3-8a, emissions for individual substation construction phases would be below the SCAQMD’s regional significance thresholds for all pollutants for each phase of construction, except nitrogen oxide during certain phases of substation construction. Emissions of PM₁₀ and PM_{2.5} will be below the SCAQMD’s regional significance thresholds, but above the LSTs during activities involving earthmoving at both substations. Nitrogen oxide emissions would also exceed the LSTs during certain phases of substation construction. These emissions would cause a temporary significant impact on air quality during construction.

For the purpose of estimating emissions associated with transmission line construction, it was assumed that the transmission line construction activities could occur simultaneously due to the ability to construct the transmission line in a linear fashion, starting from one end of the line and proceeding to the other end. This assumption is consistent with the construction schedule. Table 4.3-8b, Estimated Construction Emissions for Transmission Line Construction, presents the maximum daily emissions associated with transmission line construction for each transmission line segment.

Table 4.3-8b: Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
<i>Total Construction Emissions, lbs/day</i>						
Transmission Segment 4: Talega Hub to Talega Substation (138/69kV)						
Heavy Construction Equipment	34.90	129.10	289.54	0.42	12.13	10.79
Worker Vehicles	1.15	22.69	2.09	0.03	0.62	0.27
Construction Truck Trips	0.78	3.02	19.89	0.03	1.14	0.74
Fugitive Dust					89.77	26.79
TOTAL	36.83	154.81	311.53	0.48	103.65	38.58
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions						
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Transmission Segment 1: Capistrano Substation Getaways 138kV						
Heavy Construction Equipment	21.55	80.05	168.16	0.26	7.49	6.67
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12
Construction Truck Trips	0.52	2.03	12.99	0.02	0.77	0.50
Fugitive Dust					89.77	26.79
TOTAL	22.58	92.16	182.08	0.29	98.31	34.07
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	21.55	80.05	168.16	0.26	97.26	33.46
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Transmission Segment 3: Talega to Rancho San Juan 230kV						
Heavy Construction Equipment	26.35	99.44	209.98	0.34	8.78	7.81
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19
Construction Truck Trips	0.71	2.71	18.27	0.03	1.01	0.66
Fugitive Dust					89.77	26.79
TOTAL	27.89	118.54	229.76	0.38	100.01	35.45

Table 4.3-8b (cont.): Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	26.35	99.44	209.98	0.34	98.55	34.60
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Transmission Segment 2: Rancho San Juan 230kV						
Heavy Construction Equipment	18.03	70.67	132.99	0.24	5.96	5.30
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust					89.77	26.79
TOTAL	19.22	85.39	148.28	0.28	96.86	32.76
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	18.03	70.67	132.99	0.24	95.73	32.09
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230kV						
Heavy Construction Equipment	22.89	87.28	181.25	0.30	7.44	6.62
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21
Construction Truck Trips	0.54	2.08	14.05	0.02	0.78	0.51
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11
Fugitive Dust					89.77	26.79
TOTAL	37.16	173.90	263.81	12.65	120.57	56.23
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	22.89	87.28	181.25	0.30	97.21	33.41
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

Table 4.3-8b (cont.): Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}
Transmission Segment 4: Talega Hub to Talega Substation 230kV						
Heavy Construction Equipment	19.07	74.56	147.96	0.25	6.18	5.50
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust					89.77	26.79
TOTAL	20.38	91.81	163.48	0.29	97.16	38.49
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	19.07	74.56	147.96	0.25	95.95	32.29
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Transmission Segment 2: Rancho San Juan 138/230kV North Runs						
Heavy Construction Equipment	19.03	74.39	132.92	0.28	5.65	5.03
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.50	1.92	12.75	0.02	0.72	0.47
Fugitive Dust					89.77	26.79
TOTAL	20.17	88.92	146.83	0.32	96.49	32.44
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Total On-site Emissions	19.03	74.39	132.92	0.28	95.42	31.82
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
<i>Above Localized Significance Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

As shown in Table 4.3-8b, emissions for individual transmission line construction phases would be below the SCAQMD's regional significance thresholds for all pollutants for each phase of construction except nitrogen oxide emissions. Emissions would also be above the LSTs for PM₁₀, PM_{2.5}, and nitrogen oxide during portions of transmission line construction. These emissions would cause a temporary significant impact on air quality during construction.

To identify the maximum daily emissions that would occur due to the simultaneous construction of various segments and the substation construction, the schedule was reviewed to identify the month during which maximum emissions will occur.

That time period occurs in December 2015, when the following construction activities occur simultaneously:

- San Juan Capistrano Substation – Lower Yard
 - Below Grade Construction
 - Above Grade Construction
- Transmission Segment 1 – 138/230kV
 - Steel Pole Installations
 - Cable/Conductor Pulling and Tensioning
 - Removal of Wood Pole Structures
- Transmission Segment 2 – 230kV
 - Site Grading
 - Foundation Installations
- Transmission Segment 1 – 230kV
 - Steel Pole Installations
 - Removal of Wood Structures
- Transmission Segment 4 – 230kV
 - Foundation Installations
 - Steel Pole Installations

Table 4.3-9, presents a summary of the maximum simultaneous emissions in comparison with the significance thresholds.

Table 4.3-9: Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
<i>Total Construction Emissions, lbs/day</i>						
San Juan Capistrano Substation Construction						
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	12.16	46.82	84.54	0.21	3.22	2.76

Table 4.3-9 (cont.): Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Transmission Segment 1: Capistrano Substation Getaways 138kV						
Heavy Construction Equipment	7.82	29.73	53.24	0.09	2.68	2.38
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12
Construction Truck Trips	0.52	2.03	12.99	0.02	0.77	0.50
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	22.58	92.16	182.08	0.29	98.31	34.07
Transmission Segment 3: Talega to Rancho San Juan 230kV						
Heavy Construction Equipment	9.09	35.79	61.90	0.10	3.15	2.80
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19
Construction Truck Trips	0.71	2.71	18.27	0.03	1.01	0.66
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	27.89	118.54	229.76	0.38	100.01	35.45
Transmission Segment 2: Rancho San Juan 230kV						
Heavy Construction Equipment	5.54	19.73	45.41	0.07	1.69	1.51
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	19.22	85.39	148.28	0.28	96.86	32.76
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230kV						
Heavy Construction Equipment	5.09	19.21	31.57	0.05	1.60	1.43
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21

Table 4.3-9 (cont.): Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Construction Truck Trips	0.54	2.08	14.05	0.02	0.78	0.51
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	37.16	173.90	263.81	12.65	120.57	56.23
Transmission Segment 4: Talega Hub to Talega Substation 230kV						
Heavy Construction Equipment	4.97	21.27	30.51	0.05	1.61	1.43
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	20.38	91.81	163.48	0.29	97.16	28.92
Maximum Simultaneous Emissions						
TOTAL	139.39	608.62	1071.95	14.09	516.14	194.26
Significance Thresholds	75	550	100	150	150	55
<i>Above Significance Thresholds?</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

As shown in Table 4.3-9, maximum daily construction emissions would exceed the regional significance thresholds for all criteria pollutants except sulfur dioxide. Because the simultaneous emissions include construction at different locations, it is not appropriate to use the LSTs, which address localized impacts, to assess significance for multiple construction activities occurring at different sites. Implementation of BMPs to control fugitive dust emissions and reduce emissions from vehicles and heavy equipment would reduce emissions to the extent possible, however, they would not reduce maximum daily emissions to a level that is less than the SCAQMD’s significance thresholds. Although the daily reactive organic gases, carbon monoxide, nitrogen oxide and particulate emissions exceed the regional significance thresholds, SDG&E will implement the most practicable and feasible measures to lower emissions from diesel construction equipment/vehicles (including enforcement of the 5-minute idling limit, use of Tier 2 or cleaner engines, and implementation of a fugitive dust plan). Thus emissions are reduced to the extent possible. Construction emissions will therefore result in a significant, but temporary, impact on the ambient air quality during construction activities.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not result violate any air quality standard or contribute substantially to an existing or projected air quality violation.

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 – Significant Impact

As discussed under Question 4.3b and shown previously in Table 4.3-9, maximum daily construction emissions would exceed the regional significance thresholds for all criteria pollutants except sulfur dioxide, and maximum daily emissions for localized construction projects will also exceed the LSTs for PM₁₀ and PM_{2.5}. These emissions would therefore result in a cumulatively significant, but temporary, impact on the ambient air quality during construction activities.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP, however. SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment.

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

Construction – Less than Significant Impact

Sensitive receptors in the Proposed Project vicinity could be exposed to emissions of TACs as a result of construction activities. The main TAC that would be released during construction would be diesel particulate matter from construction equipment and heavy-duty vehicles traveling to construction areas. Minor amounts of other TACs would be emitted from such sources as gasoline-powered worker vehicles and construction equipment.

The CARB and Office of Environmental Health Hazard Assessment have identified diesel particulate matter as a carcinogenic substance, and has also defined a reference exposure level (REL) based on chronic exposure. According to the Office of Environmental Health Hazard Assessment, human exposures greater than eight years are considered chronic exposures. Under the Office of Environmental Health Hazard Assessment guidelines for carcinogenic exposure, cancer risk should be evaluated over a 70-year lifetime.

Given that the construction of the Proposed Project is short-term relative to the exposure periods for carcinogenic and chronic risks, and given that the transmission line construction activities would move along the transmission corridors and individual substation construction activities would be shorter in duration, impacts to sensitive receptors would not result in substantial exposure to diesel particulate matter. Impacts are less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, operational and maintenance impacts on sensitive receptors would be less than significant.

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

Construction – Less than Significant Impact

Due to the nature of the Proposed Project, odor impacts are unlikely. Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. No substantial sources of these pollutant will exist during construction. Construction equipment and construction operations would emit trace pollutants that could be considered to have objectionable odors, such as diesel exhaust. These odors would be temporary in nature. Because of the temporary nature of the construction of the transmission lines and substations, odor impacts would be less than significant.

Operation & Maintenance – No Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. However, the substation would comply with the 2007 AQMP and SDG&E would ensure that all rules and regulations regarding gas insulated substations are closely followed. Moreover, SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project is not

considered a source of objectionable odors. No odor impacts would result from operation and maintenance activities.

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 – No Impact

As described previously under compliance with an applicable air quality plan, the Proposed Project would comply with applicable air quality rules and regulations. Construction is temporary, and would not diminish an existing air quality rule or future compliance requirement that would result in a significant increase in air pollutants. There would be no impact.

Operation & Maintenance – No Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations regarding gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would comply with applicable air quality rules and regulations. Operation and maintenance activities would not diminish an existing air quality rule or future compliance requirement that would result in a significant increase in air pollutants. Thus, there would be no impact.

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

Construction – Less than Significant Impact

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

Table 4.3-10: Greenhouse Gas Construction Emissions

Construction Activity	GHG Emissions (metric tons)		
	CO ₂	CH ₄	N ₂ O
Substation Construction	8,513	0.64	4.47
Transmission Line Construction	5,774	0.45	3.44
TOTAL	14,287	1.09	7.91
Global Warming Potential	1	21	310
CO₂ Equivalent	14,287	22	2,452
CO₂ Equivalent Total	16,761		
Amortized Construction Emissions (amortized over 30 years)	559		

The total annualized construction CO₂-equivalent emissions of 559 metric tons are below the SCAQMD’s significance threshold of 10,000 metric tons of CO₂-equivalent annually for industrial projects. This level of GHG emissions would not result in a significant impact on global climate. The Proposed Project is therefore consistent with the goals of AB 32.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP, however. SDG&E would also comply with all rules and regulations regarding gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. By virtue of its 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 Business as Usual levels for operations and maintenance, and no net increase of GHG emissions would result.

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 – Less than Significant Impact

As discussed under Question 3g, construction of the Proposed Project would be temporary. GHG emissions are below the SCAQMD’s significance threshold when amortized over a 30-year period as recommended by the SCAQMD. Construction equipment and vehicles supporting the construction of the Proposed Project would comply with the requirements implemented by the CARB to reduce GHG emissions. Construction impacts are less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. Sulfur hexafluoride is the gas employed for insulation in the gas insulated substation technology, is considered non-toxic and inert from a hazardous materials perspective and is

currently used by SDG&E in circuit breakers, switching gear and an existing gas insulated substation. However, sulfur hexafluoride is a GHG that exhibits potent global-warming properties when released to the atmosphere. New sulfur hexafluoride equipment is described as having a low leak rate of approximately 0.1 percent annually per industry standards. The proposed gas insulated substation would require the use of approximately 200,000 lbs of sulfur hexafluoride. This number is approximate and may vary depending upon the final manufacturer design.

The substation would comply with the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (CCR Title 17, § 95350-95359), which applies directly to the Proposed Project. This regulation sets the maximum emission rate for sulfur hexafluoride-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. Under Business as Usual conditions, the leak rate of sulfur hexafluoride could be as much as 20,000 lbs of sulfur hexafluoride annually. With a global warming potential of 23,900, 20,000 lbs of sulfur hexafluoride annually would equate to 217,000 metric tons of CO₂-equivalent emissions. SDG&E reported in 2011, however, that the overall emission rate for all its substations was 0.29 percent, which is less than the maximum emission rate set for 2020.

The San Juan Capistrano Substation would include equipment and operational improvements that would decrease the emissions rate to the one percent threshold before that threshold applies. The associated emissions with new equipment with a leak rate of 0.1 percent annually would be 200 lbs of sulfur hexafluoride, for a total of 2,168 metric tons of CO₂-equivalent emissions. This falls below the 217,000 metric tons of CO₂-equivalent emissions associated with Business as Usual conditions.

Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not conflict with or any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions, and impacts would be less than significant.

SDG&E has proposed AIR-1 as part of the Proposed Project to ensure that sulfur hexafluoride is properly managed. SDG&E will implement its existing sulfur hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-containing equipment installed as part of the Proposed Project. These strategies include:

- Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to comply with the USEPA's rule on Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 C.F.R. Part 98, Subpart DD) and the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Code Regs. tit. 17, § 95350-95359)
- Continuing to participate in the USEPA Sulfur Hexafluoride Partnership
- Implementing a recycling program
- Training employees on safe and proper handling of sulfur hexafluoride
- Continuing to report GHG emissions with the The Climate Registry

- Implementing SDG&E’s sulfur hexafluoride leak detection and repair program. This program includes monthly visual inspections of each gas circuit breaker (GCB), which includes checking pressure levels within the breaker and recording these readings in SDG&E’s Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E’s Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E’s Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E’s leak detection practice includes the following three methodologies:
 - Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings
 - Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas
 - Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak

These sulfur hexafluoride control policies are consistent with the AB 32 Scoping Plan and reduce emissions of sulfur hexafluoride to the one percent threshold that is the most stringent proposed to be required. The Proposed Project would therefore have less than significant impacts.

4.3.5 Applicant Proposed Measures

To reduce impacts to the extent possible, APM AIR-1 will be implemented as follows:

AIR-1 Operations Emissions Controls. SDG&E has developed APM AIR-1 as part of the Proposed Project to ensure that sulfur hexafluoride is properly managed. SDG&E will implement its existing sulfur hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-containing equipment installed as part of the Proposed Project. These strategies include:

- Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to comply with the USEPA’s requirements for Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 C.F.R. Part 98, Subpart DD) and the CARB’s Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Code Regs. tit. 17, § 95350-95359)
- Implementing a sulfur hexafluoride recycling program
- Training employees on the safety and proper handling of sulfur hexafluoride
- Continuing to report GHG emissions with the The Climate Registry.

- Implementing SDG&E's sulfur hexafluoride leak detection and repair program. This program includes monthly visual inspections of each GCB, which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies:
 - Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings.
 - Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas.
 - Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak.

4.3.6 References

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