4.3 Air Quality

This section evaluates the potential for the Proposed Project and alternatives to impact regional and local air quality from stationary and mobile sources of air emissions from construction activities, operational sources and maintenance activities. This section is based on a review of existing documentation of air quality conditions in the region, air quality regulations from the U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD).

4.3.1 Setting

Air quality is a function of both the rate and location of pollutant emissions under meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects air quality.

Regional Topography, Meteorology, and Climate

The potential for high pollutant concentrations developing at a given location depends upon the quantity of pollutants emitted into the atmosphere in the surrounding area or upwind, and the ability of the atmosphere to disperse the air pollutants. The atmospheric pollution potential, as the term is used in this EIR, is independent of the location of emission sources and is instead a function of factors such as topography and meteorology.

The study area, which includes the Proposed Project and alternatives, is located in the San Joaquin Valley, primarily in Tulare County, California. The study area also includes the Big Creek 3 Substation, which is located in northern Fresno County, in California. The study area is located at the base of the Sierra Nevada in the San Joaquin Valley Air Basin (SJVAB). The San Joaquin Valley is shaped like a bowl, bound by the Sierra Nevada to the east, the Coastal Ranges to the west, and the Tehachapi mountains to the south. Air movement is generally restricted by the region's topographic features, thereby making the region highly susceptible to accumulation of air pollutants (SJVAPCD, 2002a).

Warm winters, cool summers, small daily and seasonal temperature ranges, and high relative humidity are characteristic of the area nearest the Pacific Ocean. With increasing distance east of the Coast Range, the maritime influence decreases. Areas that are well protected from the ocean, such as the study area, experience a more continental climate type with warmer summers, colder winters, greater daily and seasonal temperature ranges, and generally lower relative humidity.

The study area typically has average maximum and minimum winter (i.e., January) temperatures of 55.9 and 36.8 ºF, respectively, while average summer (i.e., July) maximum and minimum temperatures are 97.7 and 63.3 ºF, respectively. Precipitation in the City of Visalia averages approximately 10 inches of rainfall per year, with no snowfall (WRCC, 2008).

Existing Air Quality

SJVAPCD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing levels of air quality in the study area can generally be inferred from ambient air quality measurements conducted by SJVAPCD at its closest stations, the Visalia – North Church monitoring station located approximately three miles northeast of the Rector Substation.

Background ambient concentrations of pollutants are determined by pollutant emissions in a given area as well as wind patterns and meteorological conditions for that area. As a result, background concentrations can vary among different locations within an area. However, areas located close together and exposed to similar wind conditions can be expected to have similar background pollutant concentrations. Table 4.3-1 shows a five-year (2003 – 2007) summary of monitoring data collected at the Visalia monitoring station. The data are compared with the California Ambient Air Quality Standards (CAAQS) and the federal National Ambient Air Quality Standards (NAAQS).

Sensitive Receptors

Some sensitive receptors are people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Regulatory Context

Air quality within the SJVAB is addressed through the efforts of various federal, State, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The air pollutants of concern and agencies primarily responsible for improving the air quality within the SJVAB and the pertinent regulations are discussed below.

Criteria Air Pollutants

Regulation of air pollution is achieved through both federal and State ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act, the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for ozone (O_3), carbon

TABLE 4.3-1
AIR QUALITY DATA SUMMARY (2003–2007) FOR THE STUDY AREA

Pollutant	Standard	Monitoring Data by Year				
		2003	2004	2005	2006	2007
Ozone						
Highest One-Hour Average (ppm)		0.124	0.133	0.117	0.116	0.107
Days over State Standard	0.09	43	17	27	30	11
Highest Eight-Hour Average (ppm)		0.103	0.100	0.099	0.096	0.100
Days over State Standard	0.07	89	73	62	72	56
Days over Federal Standard	0.075	65	40	46	51	31
Nitrogen Dioxide						
Highest One-Hour Average (ppm)		0.087	0.078	0.069	0.063	0.071
Days over State Standard	0.18	0	0	0	0	0
Annual Average (ppm)		0.018	0.016	0.016	0.014	0.015
Carbon Monoxide						
Highest One-Hour Average (ppm)		4.7	3.7	3.8	NA	NA
Days over State Standard	20.0	0	0	0	NA	NA
Days over Federal Standard	35.0	0	0	0	NA	NA
Highest Eight-Hour Average (ppm)		3.03	2.24	2.61	NA	NA
Days over State Standard	9.0	0	0	0	NA	NA
Particulate Matter (PM10)						
Highest 24-Hour Average ($\mu g/m^3$)[a]		99.0	82.0	124.0	151.0	99.0
Days over State Standard[b]	50	107.9	90.7	146.3	156.3	91.5
Days over Federal Standard[b]	150	0	0	0	0	0
Annual Average ($\mu g/m^3$)[a]	20	43.0	41.4	44.5	47.4	42.4
Particulate Matter (PM2.5)						
Highest 24-Hour Average ($\mu g/m^3$)[a]		58.9	68.6	95.5	78.0	73.3
Days over Federal Standard[b]	35	30.9	NA	34.9	29.8	60.4

NOTES: NA = Data not available. ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[a] Concentrations and averages represent State statistics. State and federal statistics may differ because of different sampling methods.
[b] Measurements are usually collected every six days. Days over the standard represent the estimated number of days that the standard would have been exceeded if sampling was conducted every day.

SOURCE: CARB, 2008a and USEPA, 2008.

monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM10 and PM2.5), and lead (Pb). These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set "primary" and "secondary" maximum ambient thresholds for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary

standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants. Table 4.3-2 presents both sets of ambient air quality standards (i.e., federal and State) and provides a brief discussion of the related health effects and principal sources for each pollutant. California has also established State ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected under the project and thus, there is no further mention of these pollutants in this EIR. The SJVAB is currently classified as severe non-attainment for the one-hour State ozone standard as well as non-attainment for the federal and State eight-hour ozone standards. Additionally, the SJVAB is classified as non-attainment for federal and State 24-hour PM10 and PM2.5 standards (SJVAPCD, 2008a). The SJVAB is currently in attainment and/or unclassified status for CO, SO_2, and lead.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide

Carbon monoxide is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

TABLE 4.3-2
STATE AND FEDERAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	Federal Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 Hour 8 Hour	0.09 ppm 0.07 ppm	– 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROGs) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide	1 Hour Annual	0.18 ppm 0.030 ppm	– 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	– 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM10)	24 Hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 50 µg/m^3	May irritate eyes and respiratory tract, cause decreases in lung capacity, increase cancer risk and increase mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM2.5)	24 Hour Annual	– 12 µg/m^3	35 µg/m^3 15 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also, formed from photochemical reactions of other pollutants, including NOx, SO_2, and organics.
Lead	Monthly Quarterly	1.5 µg/m^3 –	– 1.5 µg/m^3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

ppm = parts per million
µg/m^3 = micrograms per cubic meter

SOURCE: CARB 2008b.

Particulate Matter

PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility.

Other Criteria Pollutants

Sulfur dioxide is a combustion product of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM10 and PM2.5) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead.

Greenhouse Gas Emissions and Climate Change

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, most agree that there is a direct link between increased emissions of GHGs and long term global temperature increases. What GHGs have in common is that they allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation which warms the air. The process is similar to the effect greenhouses have in raising the internal temperature, hence the name GHGs. Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as electricity production and the use of motor vehicles have elevated the concentration of GHGs in the atmosphere. This accumulation of GHGs has contributed to an increase in the temperature of the earth's atmosphere and has contributed to global climate change.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H_2O). CO_2 is the most common reference gas for climate change. To account for the warming potential of greenhouse gases, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). Large emission sources are reported in million metric tons of CO_2e ($MMTCO_2e$).

Some of the potential resulting effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB, 2008d). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2001):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

The California Energy Commission (CEC) estimated that in 2004, California produced 492 million gross metric tons of CO_2e emissions (CEC, 2006). The CEC found that transportation is the source of 41 percent of the State's GHG emissions; followed by electricity generation at 22 percent and industrial sources at 21 percent.

Regulatory Setting

Federal

USEPA is responsible for implementing the myriad programs established under the federal Clean Air Act, such as establishing and reviewing the NAAQS and judging the adequacy of State Implementation Plans (SIPs), but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

As discussed previously, the federal Clean Air Act requires the USEPA to define NAAQS to protect public health and welfare. The federal Clean Air Act does not specifically regulate GHG emissions; however, the U.S. Supreme Court has determined that GHGs are pollutants that can be regulated under the federal Clean Air Act. At the time of this writing, no federal regulations establish ambient air quality emissions standards for GHGs.

State

CARB is responsible for establishing and reviewing the State standards, compiling the California SIP and securing approval of the SIP from the USEPA, conducting research and planning, and identifying toxic air contaminants. CARB also regulates mobile sources of emissions in

California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality management districts, which are organized at the county or regional level. County or regional air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas. These districts are also responsible for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 – California Global Warming Solutions Act

California Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, was enacted as legislation in 2006 and requires CARB to establish a statewide GHG emission cap for 2020 based on 1990 emission levels. AB 32 requires CARB to adopt regulations by January 1, 2008, that will identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program that will be developed. Under AB 32, CARB is also required to adopt, by January 1, 2008, a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which must be achieved by 2020. By January 1, 2011, CARB is required to adopt rules and regulations (which shall become operative January 1, 2012), to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 permits the use of market-based compliance mechanisms to achieve those reductions. AB 32 also requires CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

In June 2007, CARB directed staff to pursue 37 early actions for reducing GHG emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate GHG reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible (CARB, 2007a).

In addition to approving the 37 GHG reduction strategies, CARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to CARB within six months. The general sentiment of CARB suggested a desire to try to pursue greater GHG emissions reductions in California in the near-term. Following the June 2007 CARB hearing, CARB staff evaluated all 48 recommendations submitted by stakeholders and several internally-generated staff ideas and published the *Expanded List of Early Action Measures To Reduce*

Greenhouse Gas Emissions In California Recommended For Board Consideration in October 2007 (CARB, 2007b).

Climate Change Proposed Scoping Plan

In October of 2008, CARB released a Proposed Scoping Plan outlining the State's strategy to achieve the 2020 GHG emissions limit (CARB, 2008d). This Proposed Scoping Plan, developed by CARB in coordination with the Climate Action Team (CAT), proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It will be presented to the Board for approval at its meeting in December 2008. The measures in the Scoping Plan approved by the Board will be developed over the next two years and be in place by 2012.

The Scoping Plan expands the list of nine Early Action Measures into a list of 39 Recommended Actions contained in Appendices C and E of the Plan. These measures are presented in Table 4.3-3 below.

The following recommended actions are directly related to the Proposed Project:

> *(T-7) Heavy-Duty Vehicle GHG Emission Reduction (Aerodynamic Efficiency)—Discrete Early Action.* "This measure would require existing trucks/trailers to be retrofitted with the best available technology and/or CARB approved technology. This measure has been identified as a Discrete Early Action, which means it must be enforceable starting in 2010. Technologies that reduce GHG emissions and improve the fuel efficiency of trucks may include devices that reduce aerodynamic drag and rolling resistance. The requirements would apply to California and out-of-state registered trucks that travel to California. The cost of these retrofits would be recovered over the life of the vehicle through reduced fuel use. This measure would require in-use trucks and trailers to comply through a phase-in schedule starting in 2010 and achieve 100 percent compliance by 2014. Additionally, new 2011 and later tractors and trailers that are sold in or service California would need to be certified for aerodynamic efficiency requirements. The 2020 estimated GHG reductions could be up to 6.4 $MMTCO_2e$ nationwide, of which about 0.93 $MMTCO_2e$ or about 15 percent would occur within California. The Board will consider this regulation in December 2008."
>
> *(H-6) High GWP Reductions from Stationary Sources – SF_6 Leak Reduction and Recycling in Electrical Applications.* "This measure will reduce emissions of SF_6 within the electric utility sector and at particle accelerators by requiring the use of best achievable control technology for the detection and repair of leaks, and the recycling of SF_6… This measure would establish a regulation mandating a performance standard. Utilities and other affected entities would comply by using leak detection and repair (LDAR) abatement equipment to reduce system leakage. The proposed performance standard would mandate and enhance current voluntary federal SF_6 recycling standards. Voluntary industry practices have established an 80 percent SF_6 recovery rate, based on perceived economic efficiencies of recovery equipment. The proposed standard would increase recovery and recycling to 100 percent of the SF_6 contained in electrical and particle accelerator equipment without substantially increasing the industries' costs." (CARB, 2008d)

TABLE 4.3-3
RECOMMENDED ACTIONS OF CLIMATE CHANGE PROPOSED SCOPING PLAN

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	Low Carbon Fuel Standard (Discrete Earl Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle Greenhouse Has Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs ; More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000 GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of Methane Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill Methane Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill Methane – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High Global Warming Potential Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High Global Warming Potential Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High Global Warming Potential Gases	Reduction in Perflourocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High Global Warming Potential Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High Global Warming Potential Gases	High GWP Reductions from Mobile Sources
H-6	High Global Warming Potential Gases	High GWP Reductions from Stationary Sources
H-7	High Global Warming Potential Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	Methane Capture at Large Dairies

SOURCE: CARB, 2008d.

In addition, the Plan identifies challenges to meeting future demand, including Building Transmission for Renewables and Modernizing Electricity Infrastructure. The Plan states:

> "Population growth in hot areas and the need to reach remote renewable generation regions both require adding electricity transmission capability. Without new transmission lines, a 33 percent target for the Renewable Portfolio Standard (RPS) is unlikely to be met... Equally important to building transmission is modernizing the transmission and electricity distribution system. Advanced control, communications, and metering technologies, as well as improvements in control of both conventional and renewable generation, can create a more reliable, resilient grid." (CARB, 2008d)

CARB Preliminary Draft Staff Proposal, October 2008

In its Staff Proposal, CARB is taking the first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing these thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

CARB's staff has developed a preliminary interim threshold concept for industrial projects (CARB, 2008c). CARB staff's objective in this proposal is to develop a threshold of significance that will result in the vast majority (~90 percent statewide) of the GHG emissions from new industrial projects that are subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered less than significant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of CO_2e per year for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Local

San Joaquin Valley Air Pollution Control District

The Proposed Project and alternatives would be located within the jurisdiction of the SJVAPCD. The SJVAPCD regulates air pollutant emissions for all sources throughout the SJVAB other than motor vehicles. The SJVAPCD enforces regulations and administers permits governing stationary sources. The following rules and regulations would apply to the Proposed Project and alternatives:

> *Regulation VIII (Fugitive PM10 Prohibitions)*: Contains rules developed pursuant to USEPA guidance for Serious PM10 Nonattainment Areas. Rules included under this regulation limit fugitive PM10 emissions from the following sources: construction; demolition; excavation; extraction and other earth moving activities; bulk materials handling; carryout and track-out; open areas; paved and unpaved roads; unpaved vehicle/equipment traffic areas; and agricultural sources.

> *Rule 4102 (Nuisance):* Prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public.
>
> *Rule 9510 (Indirect Source Review):* Requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower to 20 percent below statewide average NO_x emissions and 45 percent below statewide average PM10 exhaust emissions. Also requires applicants to reduce baseline emissions of NO_x and PM10 emissions associated with operations by 33.3 percent and 50 percent respectively over a period of 10 years.

As required by the federal Clean Air Act and the California Clean Air Act, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the standards have been achieved. Jurisdictions of nonattainment areas are also required to prepare an air quality management plan (AQMP) that includes strategies for achieving attainment. The SJVAPCD's most recent AQMP for ozone attainment is the *1-hour Extreme Ozone Attainment Demonstration Plan* which was adopted in October 2004 and amended in October 2005. The purpose of this plan is to set forth emission reduction goals and a timeline for attaining the federal one-hour ozone ambient air quality standards in the SJVAB by November 15, 2010.

In June 2007, the SJVAPCD published the *2007 PM10 Maintenance Plan and Request for Redesignation.* This plan demonstrates how PM10 attainment in the SJVAB will be maintained in the future.

In April 2008, The SJVAPCD Board adopted the *2008 PM2.5 Plan*. This plan was designed to attain the federal and State PM2.5 standards in the SJVAB as soon as possible.

Tulare County General Plan (Proposed Project and Alternatives 2, 3 and 6)

Air quality issues are addressed in the Environmental Resources Management Element of the Tulare County General Plan. However, none of the policies outlined in this element would be applicable to the Proposed Project or alternatives (County of Tulare, 2001).

City of Visalia General Plan (Proposed Project and Alternatives 2, 3 and 6)

Portions of the Proposed Project and alternatives would be located within the City of Visalia. The City of Visalia General Plan includes policies addressing air quality issues in its Conservation, Open Space, Recreation and Parks Element. The following policy would be applicable to the Proposed Project and alternatives:

> *Implementing Policy 1.3.4:* Continue to mitigate short-term construction impacts and long-term stationary source impacts on a case-by-case basis as directed by the County Air Quality Attainment Plan.
> (City of Visalia, 1989).

City of Farmersville General Plan (Proposed Project)

A portion of the Proposed Project would cross through the northern border of the City of Farmersville. While the Conservation, Open Space, Parks and Recreation Element of the City's General Plan includes a number of objectives and action plans to minimize air pollution, none of these plans would be applicable to the Proposed Project (City of Farmersville, 2002).

Fresno County General Plan (Proposed Project and Alternatives 2, 3 and 6)

The Big Creek 3 Substation portion of the Proposed Project and alternatives would be located in unincorporated Fresno County. The Fresno County General Plan includes policies addressing air quality issues in its Open Space and Conservation Element. The following goal and policy would be applicable to the Proposed Project and alternatives:

> *Goal OS-G*: To improve air quality and minimize the adverse effects of air pollution in Fresno County.
>
> *Policy OS-G.2:* The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.
>
> *Policy OS-G.13:* The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. (County of Fresno, 2000).

4.3.2 Significance Criteria

According to Appendix G of the CEQA Guidelines and the CPUC's interim approach to assessing GHG impacts, a project would result in a significant impact if it would:

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.

f) Conflict with the State goal of reducing GHG emissions in California to 1990 levels by 2020, as set forth by AB 32, California Global Warming Solutions Act of 2006.[1]

[1] Appendix G of the CEQA Guidelines does not currently include a significance criterion for GHGs. Criterion f), above, was included here to provide a basis for evaluating the significance of the GHG emissions from the Proposed Project.

4.3.3 Applicant Proposed Measures

No Applicant Proposed Measures have been identified by SCE for reducing air quality impacts.

4.3.4 Impacts and Mitigation Measures

Approach to Analysis

This section presents an analysis of the potential air quality impacts associated with the construction, operation and maintenance of the Proposed Project. Emissions from construction equipment exhaust and generation of particulate matter (fugitive dust) are the primary concerns in evaluating short-term air quality impacts.

Proposed Project construction would employ a variety of construction and earth moving equipment. Motor-driven construction equipment, construction vehicles, and workers' vehicles would emit criteria pollutants from fuel combustion. Ground disturbing activities and heavy truck travel on paved roads would generate fugitive dust emissions. Construction of the Proposed Project, which would take up to one year to complete, has been estimated to generate the following quantity of uncontrolled criteria pollutant emissions:

- ROG: 1.2 tons
- CO: 5.1 tons
- NO_x: 12.2 tons
- SO_2: 0.02 tons
- PM10: 51.1 tons
- PM2.5: 11.1 tons

Projected construction emissions, detailed by activity, are presented in Table 4.3-4. Emission factors for construction equipment were derived using CARB's OFFROAD2007 emissions factor model. CARB's EMFAC2007 model was used to develop emission factors for on-road vehicles such as worker commuter vehicles, pickup trucks, and diesel semi-trucks. Onsite fugitive dust emissions were developed based on methods presented in the USEPA's AP-42 document as well as emission factors developed by CARB. Calculation sheets are provided in Appendix E, Air Quality.

Blasting may also be required during construction activities if rock is present. Areas where blasting would be utilized have not been determined; therefore, it is difficult to assess emissions that would result from blasting activities. Carbon monoxide is the primary pollutant emitted during blasting operations. Other pollutants emitted include particulates, NO_x, as well as small amounts of unburned hydrocarbons (USEPA, 1980). Given the expected limited use of blasting, the air pollutant emissions from that activity would not be likely to contribute materially to the construction emission totals shown above.

Long-term air pollutant emissions from the Proposed Project would be negligible since emission-related activities associated with Proposed Project operations and maintenance would be limited to periodic maintenance and inspection trips. It was estimated that annual emissions of all criteria pollutants during operations and maintenance would each be much less than one ton per year.

TABLE 4.3-4
ESTIMATED PROPOSED PROJECT CONSTRUCTION EMISSIONS

Activity	Emissions (pounds per activity)					
	ROG	CO	NO_x	SO_x	PM10	PM2.5
Survey						
Exhaust Emissions	1.0	30.3	4.1	0.0	0.4	0.4
Fugitive Dust Emissions	-	-	-	-	564.5	119.5
Material Staging Yard						
Exhaust Emissions	203.8	803.4	2050.0	2.9	70.8	65.1
Fugitive Dust Emissions	-	-	-	-	6237.5	1320.2
ROW Clearing						
Exhaust Emissions	34.0	131.6	319.5	0.5	11.9	10.9
Fugitive Dust Emissions	-	-	-	-	1411.6	295.7
Roads and Landing Work						
Exhaust Emissions	53.7	200.1	516.3	0.7	18.9	17.4
Fugitive Dust Emissions	-	-	-	-	2401.7	502.2
Guard Structure Installation						
Exhaust Emissions	35.1	135.1	324.6	0.5	12.7	11.7
Fugitive Dust Emissions	-	-	-	-	511.4	107.9
Remove Existing Conductor and OHGW						
Exhaust Emissions	37.2	151.7	404.0	0.6	13.4	12.3
Fugitive Dust Emissions	-	-	-	-	709.8	150.2
Remove Existing Towers						
Exhaust Emissions	58.2	225.5	454.6	0.5	26.3	24.2
Fugitive Dust Emissions	-	-	-	-	1167.3	245.3
Remove Existing Foundations						
Exhaust Emissions	32.3	115.4	302.8	0.5	10.5	9.7
Fugitive Dust Emissions	-	-	-	-	1135.0	238.4
Install Tower Foundations						
Exhaust Emissions	41.9	182.3	438.8	0.8	15.4	14.1
Fugitive Dust Emissions	-	-	-	-	1651.2	348.6
Tower Steel Haul						
Exhaust Emissions	8.9	35.4	96.7	0.1	3.1	2.9
Fugitive Dust Emissions	-	-	-	-	748.0	157.4
Tower Steel Assembly						
Exhaust Emissions	171.5	714.2	1229.3	1.5	83.2	76.6
Fugitive Dust Emissions	-	-	-	-	3768.2	794.9
Tower Erection						
Exhaust Emissions	31.2	130.7	229.8	0.3	14.9	13.7
Fugitive Dust Emissions	-	-	-	-	917.4	193.3
Install Tubular Pole Foundations						
Exhaust Emissions	148.6	650.9	1657.4	3.1	59.1	54.4
Fugitive Dust Emissions	-	-	-	-	8827.9	1860.6
Tubular Pole Haul						
Exhaust Emissions	30.3	126.8	308.1	0.4	10.8	10.0
Fugitive Dust Emissions	-	-	-	-	2604.1	547.2
Tubular Pole Assembly						
Exhaust Emissions	81.5	367.4	678.9	0.9	34.3	31.6
Fugitive Dust Emissions	-	-	-	-	7368.2	1543.7
Tubular Pole Erection						
Exhaust Emissions	81.5	367.4	678.9	0.9	34.3	31.6
Fugitive Dust Emissions	-	-	-	-	7368.2	1543.7

TABLE 4.3-4 (Continued)
ESTIMATED PROPOSED PROJECT CONSTRUCTION EMISSIONS

Activity	Emissions (pounds per activity)					
	ROG	CO	NO_x	SO_x	PM10	PM2.5
Install Conductor and OPGW						
Exhaust Emissions	961.7	3967.5	10151.8	15.0	344.1	316.7
Fugitive Dust Emissions	-	-	-	-	36417.9	7677.9
Guard Structure Removal						
Exhaust Emissions	17.6	76.2	159.0	0.2	7.9	7.3
Fugitive Dust Emissions	-	-	-	-	723.0	152.7
Rector Substation Modifications						
Exhaust Emissions	305.1	1286.1	3337.0	5.0	115.8	106.5
Fugitive Dust Emissions	-	-	-	-	12461.6	2631.0
Big Creek 3 Substation Modifications						
Exhaust Emissions	6.3	28.2	64.7	0.1	2.4	2.2
Fugitive Dust Emissions	-	-	-	-	462.0	97.4
Springville Substation Modifications						
Exhaust Emissions	4.9	23.4	51.1	0.1	1.9	1.7
Fugitive Dust Emissions	-	-	-	-	404.1	85.2
Vestal Substation Modifications						
Exhaust Emissions	4.9	23.4	51.1	0.1	1.9	1.7
Fugitive Dust Emissions	-	-	-	-	404.1	85.2
Restoration						
Exhaust Emissions	96.7	350.9	921.0	1.3	33.5	30.9
Fugitive Dust Emissions	-	-	-	-	2945.5	616.1
Total Project Emissions (tons)	1.2	5.1	12.2	0.02	51.1	11.1

a) Conflict with or obstruct implementation of the applicable air quality plan.

Construction, operation, and maintenance of the Proposed Project would result in emissions of criteria pollutants including ozone precursors such as ROG and NO_x as well as particulate matter. The SJVAPCD's *1-hour Extreme Ozone Attainment Demonstration Plan, 2007 PM10 Maintenance Plan and Request for Redesignation*, and the *2008 PM2.5 Plan* outline a number of control strategies to help the SJVAPCD reach attainment for the federal one-hour ozone standard, the 24-hour PM10 standard, and the federal and State PM2.5 standards, respectively. The SJVAB is in attainment for CO, SO_2, and lead, so there are no attainment plans for those pollutants.

Control measures outlined in the ozone plan focus primarily on control of stationary sources and indirect sources such as housing and commercial developments that may generate substantial vehicle trips during operations. The primarily source of criteria pollutant emissions generated by the Proposed Project would be associated with construction activities; operation of the Proposed Project would generate a very small number of vehicle trips required to inspect and maintain the proposed transmission line. Therefore, the Proposed Project would not create a permanent substantial source of ozone precursor emissions, and would not obstruct implementation of the SJVAPCD's ozone attainment plan (No Impact).

The PM10 maintenance plan focuses on how the SJVAPCD will maintain attainment of the federal 24-hour PM10 standard, which includes continued implementation of the *Amended 2003 PM10 Plan*. The 2003 plan focuses on implementing rules that limit PM10 emissions from various industrial sources as well as fugitive dust emissions. It is required by regulation that construction of the Proposed Project would be conducted in compliance with SJVAPCD's Regulation VIII, Fugitive PM10 Prohibitions; therefore, the Proposed Project would not obstruct implementation of the PM10 maintenance plan. Inspection and maintenance activities associated with operation would generate PM10 emissions from travel on unpaved roads; however, these activities would also be subject to rules set forth in Regulation VIII. Therefore, the Proposed Project would be regulated by applicable SJVAPCD rules and would not obstruct implementation of the PM10 maintenance plan (No Impact).

The *2008 PM2.5 Plan* is the SJVAPCD's first plan to focus specifically on PM2.5, although the control strategies from previous PM10 plans (particularly those related to fugitive dust control) have already improved the SJVAB's ambient PM2.5 levels. Therefore, because fugitive dust controls continue to be addressed in the PM10 plan, the *2008 PM2.5 Plan* contains a comprehensive list of strict regulatory and incentive-based measures to reduce directly-emitted PM2.5 and precursor emissions. However, the Proposed Project would result in relatively negligible PM2.5 emissions from those types of sources (see Table 4.3-4, below), with the vast majority of PM2.5 emissions associated with the Proposed Project arising from the PM2.5 component of fugitive dust. Nevertheless, the Proposed Project would be regulated by applicable SJVAPCD rules which would ensure compliance with the *2008 PM2.5 Plan,* and therefore would not obstruct implementation of the PM2.5 plan (No Impact).

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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact 4.3-1: Construction activities could generate emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions. ***Less than significant with mitigation*** **(Class II)**

The SJVAPCD has identified PM10 as the pollutant of greatest concern for construction related emissions. In the *Guide for Assessing and Mitigating Air Quality Impacts*, the SJVAPCD recommends that construction PM10 impacts be evaluated based on implementation of effective and comprehensive dust control measures rather than detailed quantification (SJVAPCD, 2002b). SJVAPCD has not established a CEQA significance threshold for PM10 or PM2.5 emissions associated with construction activities.

The SJVAPCD has also not established quantitative CEQA thresholds for ozone precursors associated with construction activities. In lieu of CEQA significance thresholds for construction emissions of ozone precursors, projected emissions of the Proposed Project are compared to the SJVAPCD's operational CEQA threshold of 10 tons per year for both NO_x and ROG.

Construction of the Proposed Project would take approximately one year to complete; therefore, total estimated emissions for all construction activities were used to represent annual emissions. The total estimated emissions associated with construction of each component of the Proposed Project are presented in Table 4.3-4. Exhaust emissions include heavy duty equipment exhaust, on-road truck emissions, and worker vehicle emissions. Fugitive dust emissions include emissions associated with travel on paved and unpaved roads as well as emissions associated with grading and earth disturbing activities. Refer to Appendix E for detailed calculation sheets.

As shown in Table 4.3-4, estimated construction emissions of NO_x would exceed the annual SJVAPCD CEQA threshold of 10 tons per year. Therefore, construction emissions would have the potential to contribute substantially to existing violations of ozone standards and impacts would be potentially significant. These emission rates do not include emissions from blasting activities; however, blasting activities are not anticipated to generate substantial emissions of criteria pollutants in relation to the emissions from the other construction sources. In addition, Mitigation Measure 4.7 (see Section 4.7, *Hazards and Hazardous Materials*) requires implementation of a Blasting Safety Plan, which would require dust control measures, including matting or covering of the blast area.

The Proposed Project would be subject to SJVAPCD's Rule 9510, Indirect Source Review (SJVAPCD, 2008b). This rule requires that project applicants reduce exhaust emissions from construction equipment greater than 50 horsepower by 20 percent below statewide average NO_x emissions and 45 percent below statewide average PM10 emissions. This may be achieved through on-site reductions such as utilizing add-on controls, cleaner fuels, newer low emitting equipment, or by purchasing off-site credits from the SJVAPCD (SJVAPCD, 2005). With implementation of this rule, construction emissions associated with the Proposed Project would be below the CEQA significance threshold for NO_x. Mitigation Measure 4.3-1a would require SCE to submit an Air Impact Assessment application to the SJVAPCD for review under Rule 9510, which would show how construction NO_x emissions would be reduced to less than 10 tons per year. With implementation of this measure, impacts to ozone attainment from emissions of ozone precursors during construction would be less than significant.

> **Mitigation Measure 4.3-1a:** SCE shall submit an Air Impact Assessment application to the SJVAPCD that demonstrates how exhaust emissions from construction equipment greater than 50 horsepower shall be reduced by at least 20 percent from the statewide average NO_x emissions rate and 45 percent from the statewide average PM10 exhaust emission rate. The Air Impact Assessment shall also demonstrate that construction NO_x emissions associated with the project would be reduced to less than 10 tons per year. These reductions shall be achieved through any combination of on-site reduction measures (e.g., utilizing add-on controls, cleaner fuels or newer lower emitting equipment) and off-site reduction fees paid directly to the SJVAPCD. SCE shall provide a copy of the approved application to the CPUC prior to commencement of construction activities.

As discussed previously, the SJVAPCD has not developed quantitative thresholds for evaluating impacts of PM10 or PM2.5 emissions, but instead emphasizes the implementation of effective dust control measures to mitigate PM10 impacts. Because most of the PM2.5 emissions that would be associated with the Proposed Project would be from fugitive dust, effective dust control

measures would also mitigate PM2.5 impacts. Implementation of Mitigation Measure 4.3-1b would require SCE to implement dust control measures recommended by SJVAPCD, and would reduce impacts from PM10 and PM2.5 emissions associated with construction to less than significant.

Regarding construction emissions of CO and SO_2, the SJVAPCD has not developed quantitative thresholds for these pollutants either. However, Proposed Project construction related emissions of these pollutants would not contribute substantially to a new violation because these the ambient levels for these pollutants in the study area are well below State and Federal ambient air quality standards, and the emission of CO and SO_2 from construction of the Proposed Project would be negligible and of short duration.

Mitigation Measure 4.3-1b: During construction, SCE and/or its contractors shall implement the following dust control measures.

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.)(Use of blower devices is expressly forbidden).*
- Following the addition of materials to, or removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Limit traffic speed on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Install windbreaks at windward side(s) of construction areas.

- Suspend excavation and grading activity when winds exceed 20 mph.
- Limit area subject to excavation, grading, and other construction activity at any one time.

Significance after Mitigation: Less than Significant.

Impact 4.3-2: Operation of the Proposed Project could generate exhaust emissions of criteria pollutants from routine inspection and maintenance of transmission facilities. *Less than significant* (Class III)

Emissions of criteria pollutants associated with operation of the Proposed Project would be generated as a result of maintenance and inspection activities. Normal maintenance and inspection activities would include annual aerial and/or ground inspections of transmission facilities as well as inspection of spur and access roads. Furthermore, access and spur roads would be maintained and repaired in a manner consistent with SCE's road maintenance and repair practices. Exhaust emissions from these activities would not be expected to exceed a rate of one ton per year of ROG and NO_x, and would therefore be well below the SJVAPCD CEQA significance threshold of 10 tons per year. Exhaust emissions of PM2.5, CO, and SO_2 would be negligible for ongoing operations of the Proposed Project. Therefore, impacts would be less than significant.

Mitigation: None required.

Impact 4.3-3: The Proposed Project could result in permanently disturbed land that would serve as a source of fugitive dust emissions. *Less than significant with mitigation* (Class II)

The Proposed Project would permanently disturb 42 acres of land and would require permanent removal of approximately 2,900 trees. This increase in open exposed land would lead to increased fugitive dust emissions. SJVAPCD Rule 8501 requires that property owners of any open area three acres or larger in size with at least 1,000 square feet of disturbed surface area implement appropriate control measures (SJVAPCD, 2004). Furthermore, unauthorized access on new access and spur roads could generate substantial quantities of fugitive PM10 and PM2.5. However, as stated in Chapter 2, *Project Description*, gates would be installed where required at fenced property lines to restrict unauthorized vehicular access. Mitigation Measure 4.3-3 includes measures recommended by the SJVAPCD to help mitigate fugitive PM10 and PM2.5 emissions from open areas. Implementation of this measure would reduce impacts to less than significant.

> **Mitigation Measure 4.3-3:** After construction, SCE shall, in perpetuity, utilize the following control measures to reduce fugitive PM10 and PM2.5 emissions from permanently disturbed land and new access and spur roads:

- Apply and maintain water or dust suppressants to all un-vegetated areas; or
- Establish native vegetation that is compliant with SCE line clearance requirements on all previously disturbed areas; or
- Apply and maintain gravel or apply and maintain chemical/organic stabilizers/suppressants to all open areas.

Significance after Mitigation: Less than Significant.

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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).

Impact 4.3-4: Construction emissions associated with the Proposed Project could result in emissions of ozone precursors that would be cumulatively considerable. ***Less than significant with mitigation*** **(Class II)**

The SJVAB is non-attainment of ozone standards because of cumulative emissions from numerous sources throughout the SJVAB as well as transport of pollutants from regions outside of the SJVAB. Most sources emit ROG and NO_x in quantities that are too small to have a measurable effect on ambient ozone concentrations by themselves; however, when they are considered in a cumulative sense these emissions result in severe problems to the ambient air quality throughout the SJVAB. In response to this issue, the SJVAPCD has developed an annual emissions threshold of 10 tons for both ROG and NO_x to limit the individual contribution of discrete projects, thereby reducing the cumulative impacts of many smaller scale projects. As discussed previously, unmitigated emissions during construction would be below the threshold of 10 tons per year for ROG but would exceed it for NO_x, and would therefore contribute to a cumulatively considerable net increase in ozone precursor emissions. However, Mitigation Measure 4.3-1a would reduce impacts associated with NO_x emissions to less than significant, thereby reducing the Proposed Project's contribution to cumulative ozone levels. Therefore, the Proposed Project would not be cumulatively considerable and cumulative impacts would be less than significant with mitigation.

Mitigation Measure 4.3-4: Implement Mitigation Measure 4.3-1a.

Significance after Mitigation: Less than Significant.

Impact 4.3-5: Construction emissions associated with the Proposed Project could result in emissions of particulate matter that would be cumulatively considerable. ***Less than significant with mitigation*** **(Class II)**

PM10 and PM2.5 have a similar cumulative regional emphasis because particles can be entrained into the atmosphere and contribute to unhealthful levels over time. However, at a local scale PM10 and PM2.5 also have the potential to cause significant impacts if several grading or earth moving projects are underway simultaneously at nearby sites. As discussed in Section 3.6, *Cumulative Projects*, there are a number of projects that are proposed within one mile of the Proposed Project. These projects include road widening and resurfacing projects as well as community development projects such as residential subdivisions. If grading and earth moving activities associated with these projects would overlap with activities associated with construction of the Proposed Project, cumulative local impacts to PM10 and PM2.5 levels would be potentially significant.

The SJVAPCD recommends that if it appears that the local cumulative PM10 impacts would be significant, the Lead Agency should require the project applicant to implement enhanced dust control measures. For the purposes of this review, this approach to defining the significance of cumulative PM10 impacts is also applicable for emissions of PM2.5. Enhanced dust control measures include limiting traffic speeds on unpaved roads to 15 miles per hour and installing sandbags and other erosion control measures to prevent silt runoff to public roadways from sites with slopes greater than one percent. These measures have been included as part of Mitigation Measure 4.3-1b; therefore, the Proposed Project's contribution to a cumulative impact would not be cumulatively considerable.

Mitigation Measure 4.3-5: Implement Mitigation Measure 4.3-1b.

Significance after Mitigation: Less than Significant.

Impact 4.3-6: Operation and maintenance of the Proposed Project could generate emissions of criteria pollutants that would be cumulatively considerable. ***Less than significant*** **(Class III)**

As discussed previously, operation of the Proposed Project would generate much less than one ton of exhaust emissions per year for each criteria pollutant. These emissions would not exceed the annual threshold for ozone precursors set by the SJVAPCD for individual projects. Since the thresholds of 10 tons per year of ROG and NO_x were set by the SJVAPCD to reduce each project's individual contribution to cumulative air quality impacts, if a project does not exceed these thresholds its individual contribution would be less than significant. Therefore, when added to impacts from operation and maintenance of other projects in the SJVAB, the Proposed Project's incremental contribution to ozone precursor emissions would be less than cumulatively considerable. Operational exhaust emissions of PM2.5, CO, and SO_2 would be negligible and would also be less than cumulatively considerable.

As discussed previously, the SJVAPCD recommends that a project's cumulative contribution to PM10 emissions be evaluated based on the potential for earth disturbing activities associated with the project to overlap with earth disturbing activities associated with other nearby projects. If it appears that the level of activity may cause an adverse impact, then appropriate dust control measures should be implemented. The only earth disturbing activity associated with operation of the Proposed Project would result from travel on unpaved roads during inspection activities and occasional re-grading of roads during routine maintenance activities. Since these activities would occur along a line and would not remain in the same location for an extended period of time, it is unlikely that they would cause an adverse impact when considered with other earth disturbing activities in the area. Therefore, implementation of the Proposed Project would not result in a cumulative considerable impact to PM10 levels. Furthermore, implementation of Mitigation Measure 4.3-3 would reduce fugitive PM10 emissions from operation and maintenance activities, thereby further decreasing the Proposed Project's individual contribution to PM10 levels.

Mitigation: None required.

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d) Expose sensitive receptors to substantial pollutant concentrations.

Impact 4.3-7: Construction activities could generate emissions of criteria pollutants, potentially exposing sensitive receptors to harmful pollutant concentrations. ***Less than significant with mitigation*** **(Class II)**

There are several homes located along the first 1.1 miles of the Proposed Project alignment near SCE's existing ROW. Additionally, new ROW that would be acquired for the Proposed Project would also pass within close proximity to a few rural residential receptors and schools. As discussed previously, construction activities would generate emissions of criteria pollutants, including suspended and inhalable particulate matter as well as equipment exhaust emissions. However, due to the linear nature of transmission facilities, construction activities would not remain in the same place for longer than a few days at a time, thereby reducing the amount of time that any one receptor would be exposed to elevated concentrations of air pollutants. Furthermore, Mitigation Measure 4.3-1a would reduce impacts from construction exhaust emissions while Mitigation Measure 4.3-1b would reduce impacts from construction-related dust. With implementation of these measures, impacts to sensitive receptors would be less than significant.

Mitigation Measure 4.3-7: Implement Mitigation Measures 4.3-1a and 4.3-1b.

Significance after Mitigation: Less than Significant.

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

Construction and operations of the Proposed Project would not create odorous emissions that would affect a substantial number of people; therefore, no impact would occur (No Impact).

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f) Conflict with the State goal of reducing GHG emissions in California to 1990 levels by 2020, as set forth by AB 32, California Global Warming Solutions Act of 2006.

Impact 4.3-8: The Proposed Project would generate short-term and long-term emissions of GHGs. ***Less than significant with mitigation*** **(Class II)**

As with other individual small projects (e.g., projects that are not cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, or hydrogen plants or other stationary combustion sources that emit more than 25,000 metric tons of CO_2e per year), the emissions increases that would result under the Proposed Project would not be expected to individually have a significant impact on global climate change (CAPCOA, 2008) and the primary concerns would be whether implementation of the Proposed Project would conflict with the State goals for reducing GHG emissions and whether it would have a cumulatively considerable impact on global climate change.

Based on a review of recent publications and actions from CARB and the Governor's Office of Planning and Research (OPR) technical advisory regarding analysis of GHGs in CEQA documents (CARB 2007a, and 2007c; OPR, 2008) two considerations were used to evaluate whether the Proposed Project's emissions could conflict with the State goals for reducing GHG emissions. Each is discussed in the analysis below. The considerations include:

1. The potential for the project to conflict with the 39 Recommended Actions identified by CARB in its Climate Change Proposed Scoping Plan which includes nine Early Action Measures; and

2. The relative size of the project's GHG emissions in comparison to CARB's proposed operational significance threshold of 7,000 metric tons per year.

The Proposed Project would generate GHG emissions from a variety of sources. Mobile sources such as trucks, tractors, and passenger vehicles would emit CO_2, CH_4 and N_2O, and circuit breakers may leak SF_6.

Table 4.3-3 presents the 39 Recommended Actions identified to date by CARB in its Climate Change Proposed Scoping Plan. Of the 39 measures identified, those that would be considered to be applicable to the Proposed Project would primarily be those actions related to transportation and SF_6 leakage. Consistency of the Proposed Project with these measures is evaluated by each source-type measure below:

(T-7) Heavy-Duty Vehicle GHG Emission Reduction (Aerodynamic Efficiency)—Discrete Early Action. By the year 2014, 100 percent of California trucks and trailers, such as the ones that would be used to haul equipment and materials to construction sites associated with the Proposed Project, would be required to be retrofitted with the best available aerodynamic efficiency technology and/or CARB approved aerodynamic efficiency technology to reduce GHG emissions and improve fuel efficiency. The 100 percent compliance target date would occur after construction of the Proposed Project would be completed. Therefore, there would be no potential for the Proposed Project to conflict with this recommended action.

(*H-6) High GWP Reductions from Stationary Sources – SF6 Leak Reduction and Recycling in Electrical Application.* SCE is a member of the SF_6 Reduction Partnership for Electric Power Systems. This partnership is a collaborative effort that was formed between the USEPA and the electric power industry to help identify and reduce fugitive emissions of SF_6. Utilities that have joined the partnership have agreed to: estimate current annual SF_6 emissions and annually inventory emissions of SF_6 using an emissions inventory protocol; establish a strategy for replacing older, leakier pieces of equipment; implement SF_6 recycling; ensure that only knowledgeable personnel handle SF_6; and submit annual progress reports to the USEPA. In 2006, the USEPA recognized SCE for its accomplishments in reducing SF_6 emissions. Since SCE joined the SF_6 Reduction Partnership for Electrical Power Systems in 2001, the company has reduced its SF_6 emissions by 41 percent. Consequently, SCE operations would be considered consistent with the goals of Action H-6.

In addition to assessing the Proposed Project's potential to conflict with the Recommended Actions, the Proposed Project should also be compared to CARB's proposed draft operational threshold of 7,000 metric tons per year. Construction of the Proposed Project would result in emissions of GHGs from onsite construction equipment exhaust as well as from off-site worker and delivery truck trip exhaust. The most common GHGs associated with fuel combustion include carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4). Over the entire construction phase of the Proposed Project, approximately 1,633 metric tons of CO_2e would be emitted from on- and off-road combustion sources. This represents a short-term increase in SCE's baseline GHG emissions inventory. Refer to Appendix E for detailed calculation sheets.

Operation of the Proposed Project would generate GHG emissions from vehicle travel during inspection and maintenance of the new transmission lines. Annual GHG emissions from operations would be approximately 2.7 metric tons of CO_2e.

In addition to vehicle emissions, SF_6 could unintentionally leak from transformers, circuit breakers, and other equipment within the substations during operations of the Proposed Project. New sources of SF_6 included as part of the Proposed Project are four new circuit breakers that would be installed at the Rector Substation, each of which would contain approximately 242 pounds of SF_6. These new circuit breakers would replace two existing circuit breakers at the Rector Substation, each of which contains approximately 270 pounds of SF_6. The USEPA estimates that among leaking circuit breakers, those manufactured prior to 1999 leak, on average, 2.5 percent of the nameplate capacity, while leaking circuit breakers manufactured in 1999 and later emit less than one percent of nameplate capacity (USEPA, 2006).

SCE (SCE, 2009) reports that the two existing circuit breakers were manufactured in 1994 and, if not for this Proposed Project, they would likely not be replaced for another five to ten years. In order to determine the net change in SF_6 emissions as a result of the Proposed Project, this analysis makes the following assumptions:

- both old and new circuit breakers would leak, and would leak at the rates estimated by the USEPA; and
- without the Proposed Project, the old circuit breakers would be replaced in five years.

Given these assumptions, the anticipated annual emissions from the two old circuit breakers would be 13.5 pounds of SF_6 (139.6 metric tons of CO_2e), and the anticipated total annual emissions from the four new circuit breakers would be 9.68 pounds of SF_6 (101.1 metric tons of CO_2e). Consequently, by replacing older circuit breakers with more efficient models, the Proposed Project would result in a net decrease of approximately 3.82 pounds of SF_6 (38.5 metric tons CO_2e) per year. However, this net reduction would occur for only the first five years, after which it is assumed that the old breakers would need to be replaced anyway. So from year six through the life of the Proposed Project, there would be zero net reduction in SF_6. Total operational CO_2e emissions from the Proposed Project for the first five years would therefore be a net reduction of 35.8 metric tons (i.e., 2.7 metric tons from operations minus 38.5 metric tons from SF_6 leak reduction). From year six through the life of the project, total operational CO_2e emissions would be an increase of 2.7 metric tons.

To date, CARB has not given explicit instructions regarding thresholds for construction emissions. However, in December 2008, the South Coast Air Quality Management District (SCAQMD) adopted a methodology for determining whether or not GHG emissions from a project would be significant, which includes more guidance related to construction emissions (SCAQMD, 2008). Under this methodology, construction emissions are amortized over the life of a project (estimated to be 30 years), added to the operational emissions, and compared to the interim GHG significance threshold. In the absence of clear guidance from CARB regarding significance thresholds for construction emissions, the CPUC has determined that the SCAQMD's method is the best available method to determine GHG significance associated with the Proposed Project. Thus, the amortized annual emissions (i.e., 1/30 of the total construction emissions plus net operational emissions) would be as follows:

Years 1 through 5:	2.7	Operational emissions (metric tons CO_2e)
	54.4	Amortized construction emissions (metric tons CO_2e)
	-38.5	Net decrease for circuit breakers (metric tons CO_2e)
	18.6	metric tons CO_2e
Years 6 through 30:	2.7	Operational emissions (metric tons CO_2e)
	54.4	Amortized construction emissions (metric tons CO_2e)
	0.0	Net decrease for circuit breakers (metric tons CO_2e)
	57.1	metric tons CO_2e

While the annualized greenhouse gas emissions associated with the Proposed Project would be substantially less than CARB's preliminary draft threshold amount of 7,000 metric tons CO_2e, significance for this project is also based on whether the Proposed Project would be consistent with the State's greenhouse gas reduction goal under AB 32, which would require a minimum 30 percent reduction of greenhouse gases by 2020 compared to business as usual conditions. Early replacement of the older circuit breakers would make the Proposed Project consistent with the State's goal for years one through five, as the GHG reduction so achieved would be greater than 30 percent compared to business as usual (i.e., leaving the old breakers in place until they fail). However, from year 6 through the life of the project, the annualized GHG emissions of 57.1 metric tons CO2e, while small, would not be less than business as usual. In order for the Proposed Project to be consistent with the State's GHG reduction goal beginning in year six, the following mitigation measure is required.

> **Mitigation Measure 4.3-8a:** Within 60 days of completion of project construction, SCE shall enter into a binding agreement to purchase carbon offset credits from the California Climate Action Registry (CCAR), or any source that is approved by the CPUC and that is consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), to offset a minimum of 30 percent of the net annualized increase of greenhouse gas emissions from the Proposed Project for year 6 through the life of the project. The offsets identified in the binding agreement shall be implemented no later than 60 calendar months from completion of construction. The estimated amount of offsets required is 17.1 metric tons CO_2e per year (i.e., 30 percent of 57.1 metric tons CO_2e). However, the exact amount of greenhouse gas emissions to be offset may vary depending on whether any of the construction plans are modified. Within 60 days of completion of the Proposed Project, SCE shall submit a report for the CPUC's review and approval, which shall identify all construction- and operations-related emissions and the offset amounts that will be purchased from approved programs to result in a minimum 30 percent net reduction in annualized GHG emissions.

In addition, the proposed removal of approximately 4,900 to 6,400 trees from orchards during construction could result in the generation of greenhouse gas emissions from tree disposal, depending on disposal methods. Disposing of orchard debris by incineration would release nearly all the sequestered carbon to the atmosphere as CO_2. Disposing of orchard debris via landfill would result in the formation and release of methane, a more potent GHG. Mitigation Measure 4.3-8b would reduce emissions from tree disposal by ensuring that 100 percent of wood waste would be diverted from landfills, and that the majority of wood waste is composted (Tulare County RMA, 2009; Akins, 2009). Implementation of Mitigation Measure 4.3-8b would reduce these impacts to less than significant.

Of the approximately 4,900 to 6,400 orchard trees that would be removed during project construction, approximately 2,000 to 3,500 would be replaced but approximately 2,900 trees would need to remain permanently removed. The proposed permanent removal of 2,900 trees may affect carbon sequestration in the project area. Trees extract CO_2 from the air and use the carbon to create biomass such as foliage, stems, branches, and roots. Concurrently, trees release carbon to the atmosphere from natural decay, vegetative respiration, consumption of biomass for food, and when set on fire. A tree's contribution to the carbon cycle is the net difference between

sequestration and release of carbon. Tree growth in orchards is generally well controlled by pruning, and after about ten years the amount of carbon sequestered annually by a tree may change very little (Kerckhoffs, 2007). There are currently no studies available which document the carbon sequestration rate for specific orchard tree species, so the reduction in sequestration caused by the permanent removal of 2,900 trees, and its significance with regard to the State's goal of reducing GHG emissions in California to 1990 levels by 2020, cannot be known. However, implementation of Mitigation Measure 4.3-8c would require that the permanent loss of orchard trees as a result of the Proposed Project would be fully offset thereby ensuring that the reduction in carbon sequestration would be less than significant.

Mitigation Measure 4.3-8b: During construction, SCE shall dispose of all removed trees and other green waste via the Tulare County's Wood and Green Waste Program. To ensure compliance with this program, SCE shall:

- collect all wood and green waste generated from the removal of orchard trees separately from other construction and demolition waste, and place wood and green waste in a separate recovery area;
- keep wood and green waste free of contaminants such as dirt, rock concrete, plastic, metal and other contaminants which can damage wood waste processing equipment, and reduce the quality of the compost; and
- prohibit the inclusion of yucca leaves, palm fronds or bamboo (which cannot be included in the salvage program) from the wood and green waste recovery area.

Mitigation Measure 4.3-8c: Prior to the conclusion of construction, SCE shall establish, fund, and implement a tree replacement program with the Urban Tree Foundation of Visalia, CA (or other comparable organization in Tulare County) for the replacement of all permanently removed orchard trees on a 1.5 to 1 basis. The tree replacement program shall provide for the Urban Tree Foundation to select the tree species and suitable locations for the plantings, and shall also provide for the maintenance of the plantings for a minimum of one full year to maximize survival rate. SCE shall provide the CPUC with documentation of the tree replacement program, including the types and quantities of each tree species to be planted, the planting locations, the planting schedule, and the methodology for maintaining the plantings. (Note: it is the intent of this mitigation measure to offset the loss of carbon sequestration from the permanent loss of trees, not to replace the loss of a particular crop; therefore, it is not required that the replacement trees be orchard species.)

Significance after Mitigation: Less than Significant.

4.3.5 Cumulative Impacts

Cumulative impacts from emissions of criteria pollutants are discussed under c) above. As discussed under this item, emissions of ozone precursors, PM10, and PM2.5 during construction activities could result in a significant cumulative impact when considered with other projects being constructed in the SJVAB. However, implementation of Mitigation Measures 4.3-1a and 4.3-1b

would reduce the Proposed Project's individual contribution to cumulative air quality impacts from construction activities to a less than cumulatively considerable level (Class II). Because the SJVAB is designated as either attainment or unclassified related to the other criteria pollutants, Proposed Project construction emissions of these pollutants would not be cumulatively considerable and the associated cumulative impacts would be less than significant (Class III).

As also discussed under item c) above, ozone precursor, PM10, PM2.5, CO, and SO_2 emissions from operation and maintenance activities would be unlikely to contribute substantially to a cumulatively considerable impact. Therefore cumulative impacts associated with operation of the Proposed Project would be less than significant (Class III). Additionally, implementation of Mitigation Measure 4.3-3 would help ensure that impacts from operation and maintenance activities would be less than significant.

As discussed under item f) above, significance of GHG emissions are determined based on whether they would have a cumulatively considerable impact on global climate change. The Proposed Project would generate considerably less than 7,000 metric tons CO_2e per year, and, with mitigation, would not conflict with the State's GHG reduction goals. Indirect impacts to global climate change from tree removal and disposal could be cumulatively considerable when considered with tree removal from other reasonably foreseeable projects. However, with implementation of mitigation requiring SCE to dispose of trees via Tulare County's Wood and Green Waste Program and to fund and implement a tree replacement program, the Proposed Project's contribution to global climate change would not be cumulatively considerable (Class II).

4.2.6 Alternatives

No Project Alternative

Under the No Project Alternative, the Proposed Project would not be implemented; therefore, no air quality impacts would occur.

Alternative 2

Construction activities associated with Alternative 2 are anticipated to take approximately eight months longer than the Proposed Project due to the fact that Alternative 2 would require removal of 158 more single circuit lattice towers than the Proposed Project and would require installation of three more double circuit lattice towers and 47 more double circuit tubular poles. Construction of these additional structures would result in a greater amount of criteria pollutant emissions and GHG emissions. However, since construction activities associated with Alternative 2 would be spread over a longer time period, emissions in any one 12-month period would be approximately the same as those anticipated from the Proposed Project.

As with the Proposed Project, operation and maintenance of Alternative 2 would result in emissions of criteria pollutants and GHGs. Similarly to the Proposed Project, new transmission

lines constructed as part of Alternative 2 would have to be inspected and maintained on an annual basis. Alternative 2 would replace a greater length of existing line than the Proposed Project, and would require acquisition of less new ROW. Assuming that existing facilities are currently inspected and maintained annually and therefore constitute an existing source of criteria pollutant and GHG emissions, it can be assumed that operation and maintenance of Alternative 2 would result in a smaller net increase in emissions than the Proposed Project. Furthermore, with respect to GHG emissions, Alternative 2 would involve the same modifications to existing substations and would therefore replace older leakier circuit breakers with newer more efficient circuit breakers. Tree removal, resulting in a loss of carbon sequestration, would be generally the same as for the Proposed Project.

Criteria pollutant and GHG emissions from construction and operation of Alternative 2 would be generally comparable to those associated with the Proposed Project. Therefore, it can be concluded that impacts from Alternative 2 would be less than significant with implementation of Mitigation Measures 4.3-1a, 4.3-1b, 4.3-3, 4.3-4, 4.3-5, 4.3-7, 4.3-8a, 4.3-8b, and 4.3-8c (Class II).

Alternative 3

Construction activities associated with Alternative 3 are anticipated to take approximately 12 months longer than the Proposed Project due to the fact that Alternative 3 would require removal of 216 more single circuit lattice towers than the Proposed Project and installation of 45 more double circuit lattice towers and 40 more double circuit tubular poles. Construction of these additional structures would result in a greater amount of criteria pollutant emissions and GHG emissions. However, since construction activities associated with Alternative 3 would be spread over a longer time period, emissions in any one 12-month period would be approximately the same as those anticipated from the Proposed Project.

As with the Proposed Project, operation and maintenance of Alternative 3 would result in emissions of criteria pollutants and GHGs. Similarly to the Proposed Project, new transmission lines constructed as part of Alternative 3 would have to be inspected and maintained on an annual basis. Alternative 3 would replace a greater length of existing line than the Proposed Project, and would require acquisition of less new ROW. Assuming that existing facilities are currently inspected and maintained annually and therefore constitute an existing source of criteria pollutants and GHGs, it can be assumed that operation and maintenance of Alternative 3 would result in a smaller net increase in emissions than the Proposed Project. Furthermore, with respect to GHG emissions, Alternative 3 would involve the same modifications to existing substations and would therefore replace older leakier circuit breakers with newer more efficient circuit breakers. Tree removal, resulting in a loss of carbon sequestration, would be generally the same as for the Proposed Project.

Criteria pollutant and GHG emissions from construction and operation of Alternative 3 would be generally comparable to those associated with the Proposed Project. Therefore, it can be concluded

that impacts from Alternative 3 would be less than significant with implementation of Mitigation Measures 4.3-1a, 4.3-1b, 4.3-3, 4.3-4, 4.3-5, 4.3-7, 4.3-8a, 4.3-8b, and 4.3-8c (Class II).

Alternative 6

Construction activities associated with Alternative 6 are anticipated to take approximately four months longer than the Proposed Project due to the fact that Alternative 6 would require removal of more structures and would include installation of a greater number of new structures. Construction of these additional structures would result in a greater amount of criteria pollutant emissions and GHG emissions. However, since construction activities associated with Alternative 6 would be spread over a longer time period, emissions in any one 12-month period would be approximately the same as those anticipated from the Proposed Project.

As with the Proposed Project, operation and maintenance of Alternative 6 would result in emissions of criteria pollutants and GHGs. Similarly to the Proposed Project, new transmission lines constructed as part of Alternative 6 would have to be inspected and maintained on an annual basis. Alternative 6 would replace a greater length of existing line than the Proposed Project, and would require acquisition of less new ROW. Assuming that existing facilities are currently inspected and maintained annually and therefore constitute an existing source of criteria pollutants and GHGs, it can be assumed that operation and maintenance of Alternative 6 would result in a smaller net increase in emissions than the Proposed Project. Furthermore, with respect to GHG emissions, Alternative 6 would involve the same modifications to existing substations and would therefore replace older leakier circuit breakers with newer more efficient circuit breakers. Tree removal, resulting in a loss of carbon sequestration, would be generally the same as for the Proposed Project.

Criteria pollutant and GHG emissions from construction and operation of Alternative 6 would be generally comparable to those associated with the Proposed Project. Therefore, it can be concluded that impacts from Alternative 6 would be less than significant with implementation of Mitigation Measures 4.3-1a, 4.3-1b, 4.3-3, 4.3-4, 4.3-5, 4.3-7, 4.3-8a, 4.3-8b, and 4.3-8c (Class II).

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