

D.2 AIR QUALITY

This section addresses the Proposed Project and alternatives as they would affect air quality. Section D.2.1 provides a description of the environmental setting, and the applicable air quality management plans, regulations, and requirements are introduced in Section D.2.2. An analysis of the Proposed Project impacts is in Section D.2.3, and the air quality impacts related to the Project alternatives are in Sections D.2.4 through D.2.6.

D.2.1 Environmental Setting for the Proposed Project

D.2.1.1 Meteorological Conditions

The climate of Northwestern Riverside County and Southern San Bernardino County is characterized by hot, dry summers and mild to cold winters with precipitation that occurs primarily during the winter months. Summer typically has clear skies, high temperatures, and low humidity. A monthly climate summary for Banning, California was selected to characterize the climate of the study area. As described in Table D.2-1, average summer (June-August) high and low temperatures in the study area range from 97°F to 54°F, respectively. Average winter (December-March) high and low temperatures in the study area range from 68°F to 39°F. The average annual precipitation is roughly 19 inches with over 70 percent occurring between December and March. Little precipitation occurs during summer because a high-pressure cell blocks migrating storm systems over the eastern Pacific.

| | Temperature, °F | | Precipitation (Inches) |
|-----------|-----------------|---------|------------------------|
| | Maximum | Minimum | |
| January | 64 | 40 | 4.18 |
| February | 66 | 40 | 4.07 |
| March | 68 | 41 | 3.72 |
| April | 74 | 44 | 1.10 |
| May | 80 | 49 | 0.73 |
| June | 90 | 54 | 0.21 |
| July | 96 | 59 | 0.27 |
| August | 97 | 60 | 0.23 |
| September | 91 | 57 | 0.63 |
| October | 82 | 50 | 0.72 |
| November | 72 | 43 | 1.44 |
| December | 65 | 39 | 2.00 |

Source: The Weather Channel 2007.

The main Project area extends from the City of Banning in the east to a proposed new substation site located approximately 4 miles southwest of the City of Calimesa within Riverside County. The fiber optic line extends further north and west from this new substation in Riverside County to northwest of the City of Redlands and just southeast of San Bernardino International Airport in San Bernardino County. Additionally, the Mill Creek communications site is located northeast of the City of Yucaipa on privately owned land within the San Bernardino National Forest. The Project is wholly located within the South Coast Air Basin. Figures A-1, B-1, B-2, C-1, C-3, and C-4 show the proposed and alternative Project routes. The Project site is located within a valley between the San Bernardino Mountains to the north and The Badlands and San Jacinto Mountains to the south. Predominant wind

directions trend with the valley direction as it winds from west to east from San Bernardino toward the San Gorgonio Pass. The average wind speed increases with proximity to the San Gorgonio Pass.

D.2.1.2 Ambient Air Quality Conditions

Criteria Pollutants. Air quality is determined by measuring ambient concentrations of criteria pollutants, which are air pollutants for which acceptable levels of exposure can be determined and for which standards have been set. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Unique meteorological conditions in California and differences of opinion by medical panels established by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (USEPA) result in considerable diversity between State and federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The standards currently in effect in California are shown in Table D.2-2.

Table D.2-2: National and California Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards | National Standards |
|--|----------------|----------------------|-----------------------|
| Ozone | 1-hour | 0.09 ppm | --- |
| | 8-hour | 0.07 ppm | 0.08 ppm |
| Respirable Particulate Matter (PM10) | 24-hour | 50 µg/m ³ | 150 µg/m ³ |
| | Annual Mean | 20 µg/m ³ | --- |
| Fine Particulate Matter (PM2.5) | 24-hour | --- | 35 µg/m ³ |
| | Annual Mean | 12 µg/m ³ | 15 µg/m ³ |
| Carbon Monoxide (CO) | 1-hour | 20 ppm | 35 ppm |
| | 8-hour | 9.0 ppm | 9.0 ppm |
| Nitrogen Dioxide (NO ₂) ^a | 1-hour | 0.25 ppm | --- |
| | Annual Mean | --- | 0.053 ppm |
| Sulfur Dioxide (SO ₂) | 1-hour | 0.25 ppm | --- |
| | 3-hour | --- | 0.5 ppm |
| | 24-hour | 0.04 ppm | 0.14 ppm |
| | Annual Mean | --- | 0.03 ppm |

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; “---“ =no standard
Source: CARB, 2007a.

^a California Air Resources Board has approved a revised one-hour standard for NO₂ (0.18 ppm or 338 ug/m³) and a new annual standard for NO₂ (0.030 ppm or 56 ug/m³); however, these standards have not completed the State’s official approval process at the time of the completion of this Draft EIR, and it is unknown if they will be officially approved prior to the completion of the Final EIR.

Attainment Status and Air Quality Plans. The USEPA, California Air Resource Board (CARB), and the local air district classify an area as attainment, unclassified, or nonattainment, depending on whether or not the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The Project site is located within Riverside and San Bernardino Counties and within the South Coast Air Basin (SCAB) under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Table D.2-3 summarizes federal and State attainment status of criteria pollutants for the SCAB.

The Proposed Project site would extend from the city of Banning to a few miles southwest of Calimesa in northwestern Riverside County. Ozone, CO, NO₂, PM10, and PM2.5 concentrations are currently recorded at the Banning Airport and San Bernardino monitoring stations. These two monitoring stations were used to compile available data from 1997 to 2006 (10-year period). For ozone, PM10, and NO₂, the Banning Airport monitoring station was used. For PM2.5 and CO, the San Bernardino monitoring

Table D.2-3: Attainment Status for South Coast Air Quality Management District – South Coast Air Basin

| Pollutant | Federal Designation | State Designation |
|-----------------|-------------------------|-------------------------|
| Ozone | Severe Nonattainment | Extreme Nonattainment |
| PM10 | Serious Nonattainment | Nonattainment |
| PM2.5 | Nonattainment | Nonattainment |
| CO | Serious Nonattainment | Attainment |
| NO ₂ | Unclassified/Attainment | Unclassified/Attainment |
| SO ₂ | Attainment | Attainment |

Source: CARB, 2007b; USEPA, 2007a.

station was used. In Figure D.2-1, the short term normalized concentrations are provided from 1997 to 2006 for ozone and PM10. Normalized concentrations represent the ratio of the highest measured concentrations in a given year to the most stringent currently applicable national or State ambient air quality standard. Therefore, normalized concentrations lower than one indicate that the measured concentrations were lower than the most stringent ambient air quality standard.

As shown in Figure D.2-1, the Project area is above the State 1-hour and 8-hour ozone standards and the State 24-hour PM10 standard and very little reduction in these maximum concentrations has been made from 1997 to 2006. However, over a longer term than is shown in Figure D.2.1, there has been a downward trend for the maximum ozone and PM10 concentrations.

Ozone

In the presence of ultraviolet radiation, both NO_x and VOCs go through a number of complex chemical reactions to form ozone. Table D.2-4 summarizes the best representative ambient ozone data for the Project area collected over the past nine years from the monitoring station at the Banning Municipal Airport. The table includes the maximum hourly concentration and the number of days above the National and State standards. As indicated in this table, ozone formation is generally higher in spring and summer and lower in the winter. The SCAB is classified as an extreme nonattainment area for the ozone CAAQS and as a severe nonattainment area for the 8-hour ozone NAAQS.

**Table D.2-4. Ozone Air Quality Summary 1997-2006
Recorded at Banning Municipal Airport – Riverside County**

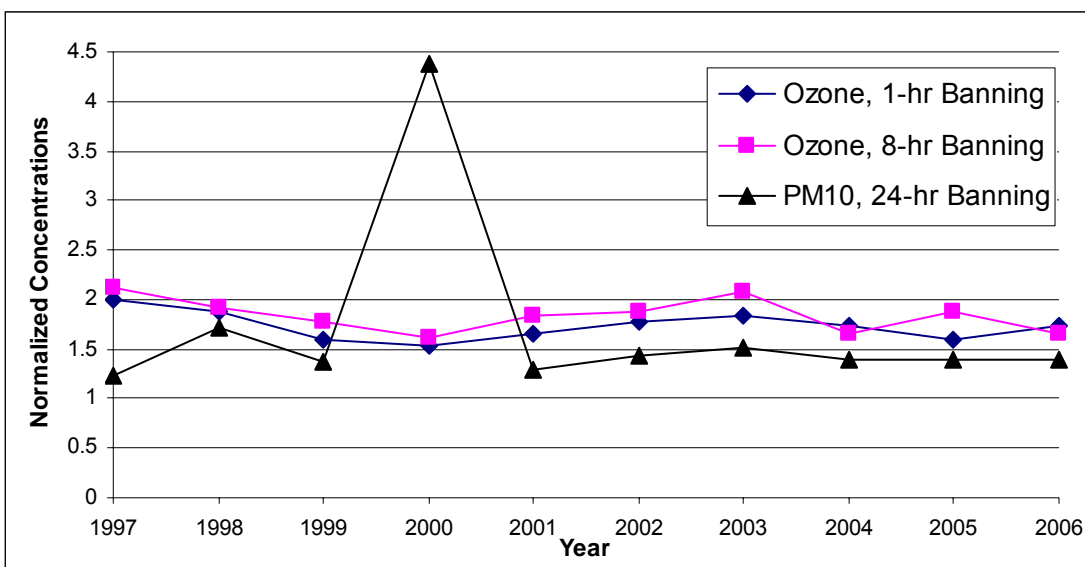
| Year | Days Above CAAQS 1-Hr | Month of Max. 1-Hr Avg. | Max. 1-Hr Avg. (ppm) | Days Above NAAQS 8-Hr | Month of Max. 8-Hr Avg. | Max. 8-hr Avg. (ppm) |
|------|-----------------------|-------------------------|----------------------|-----------------------|-------------------------|----------------------|
| 1997 | 100 | JUN | 0.180 | 140 | JUN | 0.149 |
| 1998 | 53 | AUG | 0.168 | 90 | AUG | 0.134 |
| 1999 | 55 | JUN | 0.144 | 90 | JUN | 0.124 |
| 2000 | 53 | SEP | 0.138 | 85 | JUN | 0.113 |
| 2001 | 63 | JUN | 0.149 | 97 | JUN | 0.129 |
| 2002 | 64 | AUG | 0.160 | 102 | AUG | 0.131 |
| 2003 | 75 | JUL | 0.166 | 107 | JUL | 0.146 |
| 2004 | 49 | AUG | 0.156 | 92 | JUL | 0.116 |
| 2005 | 47 | JUL | 0.144 | 91 | JUL | 0.132 |
| 2006 | 57 | AUG | 0.156 | 99 | JUN | 0.116 |

Source: CARB, 2007c.

California Ambient Air Quality Standard (CAAQS): 1-hr, 0.09 ppm, 8-hr, 0.07 ppm

National Ambient Air Quality Standard (NAAQS): 1-hr, 0.12 ppm; 8-hr, 0.08 ppm

Figure D.2-1. Normalized Maximum Short-term Historical Air Pollutant Concentrations



Source: CARB, 2006; CARB, 2007c

a. A Normalized concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard.

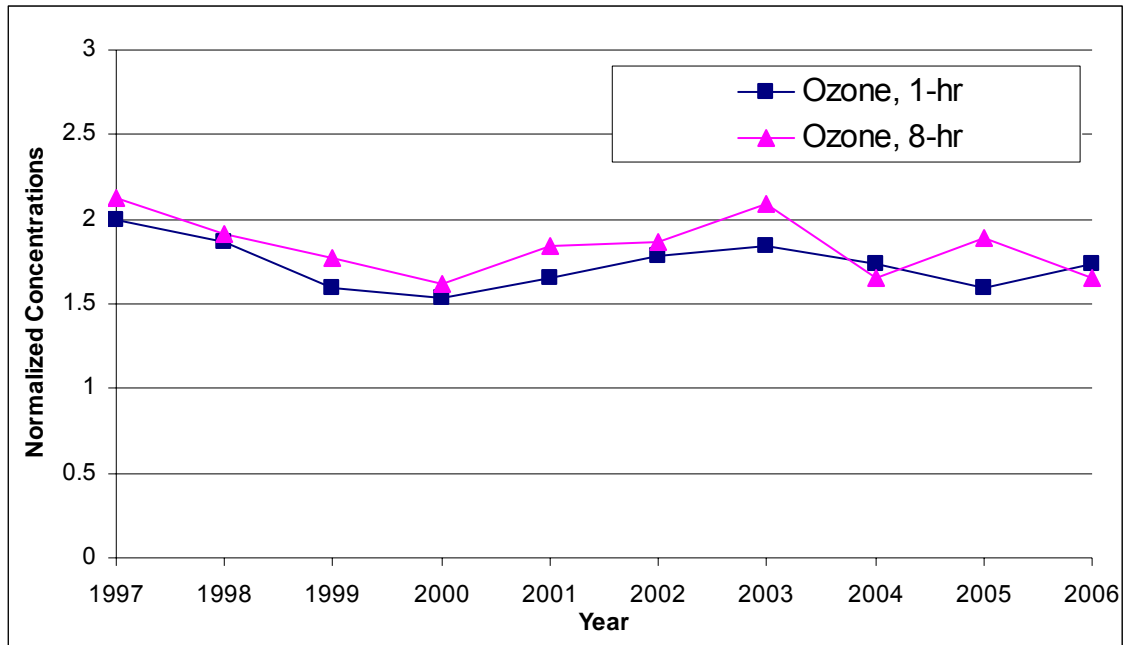
The year 1997 to 2006 trends for the maximum 1-hour and 8-hour ozone concentrations, referenced to the most stringent standard, and the number of days exceeding the California 1-hour standard and the Federal 8-hour standard for the Banning Airport monitoring station are shown in Figures D.2-2 and D.2-3, respectively.

As shown in Figures D.2-2 and D.2-3, long-term trends in reduced emissions of ozone precursors have led to reduced ozone formation in the Project area through 2000. After 2000, the trends for the ozone concentrations and number of days exceeding the standards have remained flat, with a minor peak in 2003 in the Project area.

Carbon Monoxide (CO)

CO is generally found in high concentrations only near a significant source of emissions (i.e., freeway, busy intersection, etc.). The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the wintertime late in the afternoon, persist during the night, and may extend one or two hours after sunrise. Since mobile sources (motor vehicles) are the main cause of CO, ambient concentrations of CO are highly dependent on motor vehicle activity. In fact, the peak CO concentrations occur during the rush hour traffic in the morning and afternoon. Carbon monoxide concentrations in the SCAB and the rest of the State have declined significantly due to two Statewide programs: (1) the 1992 wintertime oxygenated gasoline program, and (2) Phases I and II of the reformulated gasoline program. Additionally, overall vehicle fleet turnover from higher-emitting older engines to lower-emitting new engines is a significant factor in the declining CO levels.

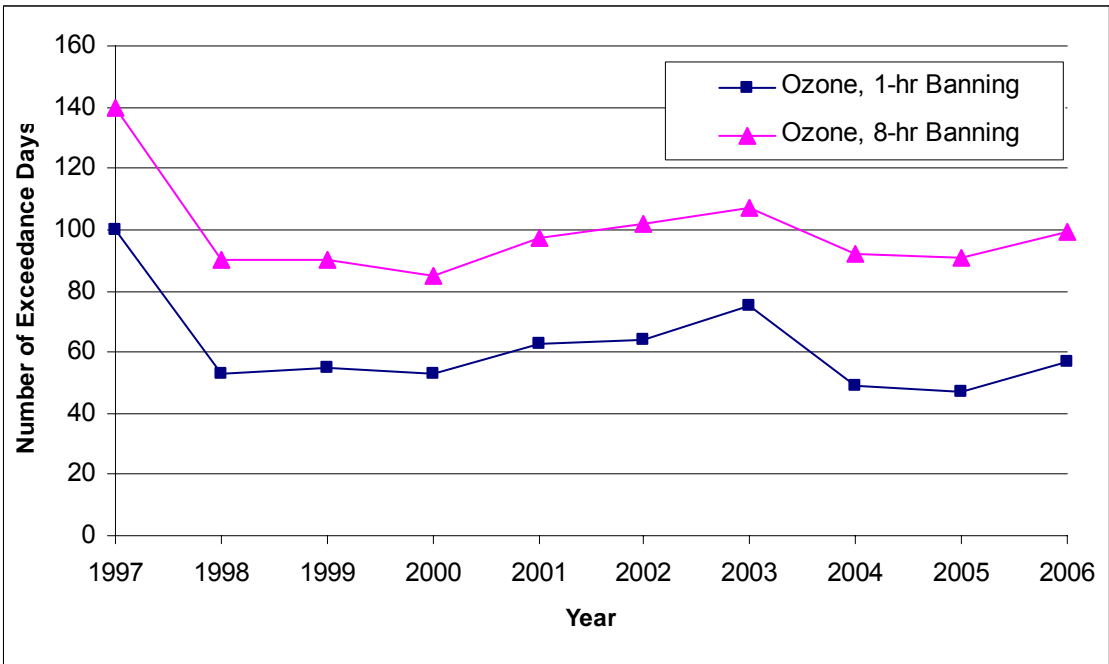
Figure D.2-2. Normalized Ozone Air Quality Maximum Concentrations (1997-2006)



Source: CARB, 2006; CARB, 2007c.

Note: A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. The standard used for 1-hour ozone is the State standard of 0.09 ppm, and for 8-hr ozone is the State standard of 0.07 ppm.

Figure D.2-3. Ozone – Number of Days Exceeding the 1-Hr CAAQS and 8-hr NAAQS (1997-2006)



Source: CARB, 2006; CARB, 2007c.

Table D.2-5 summarizes the best representative ambient carbon monoxide data for the Project area collected over the past ten years from the San Bernardino monitoring station. The table includes the maximum 1-hour and 8-hour concentrations.

| Table D.2-5. Carbon Monoxide Air Quality Summary 1997-2006 Recorded at San Bernardino – 4th Street | | | |
|--|----------------------------|----------------------------|----------------------------|
| Year | Maximum 1-Hr Avg. (ppm) | Month of Max. 8-Hr Avg. | Maximum 8-Hr Avg. (ppm) |
| 1997 | 7.6 | NOV | 5.9 |
| 1998 | 6.3 | NOV | 4.7 |
| 1999 | 5.5 | JAN | 4.1 |
| 2000 | 4.8 | DEC | 4.1 |
| 2001 | 4.1 | NOV | 3.3 |
| 2002 | 4.5 | DEC | 3.2 |
| 2003 | 5.1 | OCT | 4.4 |
| 2004 | 4.1 | JAN | 3.2 |
| 2005 | 3.8 | DEC | 2.5 |
| 2006 | --- | NOV | 2.2 |

Source: CARB, 2006; CARB, 2007c.

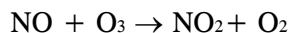
California Ambient Air Quality Standard (CAAQS): 1-hr, 20; 8-hr, 9.0 ppm

National Ambient Air Quality Standard (NAAQS): 1-hr, 35 ppm; 8-hr, 9 ppm

As indicated in Table D.2-5, there have been no exceedances of CAAQS or NAAQS within the past ten years in San Bernardino.

Nitrogen Dioxide (NO₂)

The majority of the NO_x emitted from combustion sources is in the form of NO, while the balance is mainly NO₂. NO is oxidized by O₂ (oxygen) in the atmosphere to NO₂, but some level of photochemical activity is needed for this conversion. This is why the highest concentrations of NO₂ generally occur during the fall and not in the winter, when atmospheric conditions favor the trapping of ground level releases of NO but lack significant radiation intensity (less sunlight) to oxidize NO to NO₂. In the summer, the conversion rates of NO to NO₂ are high, but the relatively high temperatures and windy conditions (atmospheric unstable conditions) disperse pollutants, preventing the accumulation of NO₂ to levels approaching the 1-hour ambient air quality standard. NO is also oxidized by O₃ to form NO₂. The formation of NO₂ in the summer with the help of ozone occurs according to the following reaction:



In urban areas, the ozone concentration level is typically high. That level will drop substantially at night as the above reaction takes place between ozone and NO. This reaction explains why, in urban areas, ozone concentrations at ground level drop, while aloft and in downwind rural areas (without sources of fresh NO_x emissions) ozone concentrations can remain relatively high.

Table D.2-6 summarizes the ambient nitrogen dioxide data for the past ten years from the Banning Airport monitoring station. As indicated in Table D.2-6, there have been no exceedances of California Ambient Air Quality Standards or National Ambient Air Quality Standards since 1999.

Inhalable Particulate Matter (PM₁₀)

PM₁₀ can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NO_x, SO_x,

VOC, and ammonia, given the right meteorological conditions, can form particulate matter in the form of nitrates (NO₃), sulfates (SO₄), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted, but are formed through complex chemical reactions in the atmosphere.

| Year | Month of Max. 1-Hr Avg. | Maximum 1-Hr Avg. (ppm) | Maximum Annual Avg. (ppm) |
|------|-------------------------|-------------------------|---------------------------|
| 1998 | OCT | 0.255 | 0.020 |
| 1999 | JUL | 0.307 | 0.023 |
| 2000 | MAR | 0.214 | 0.022 |
| 2001 | MAR | 0.237 | 0.020 |
| 2002 | JUL | 0.149 | 0.020 |
| 2003 | SEP | 0.086 | 0.018 |
| 2004 | OCT | 0.089 | 0.017 |
| 2005 | MAY | 0.073 | 0.016 |
| 2006 | SEP | 0.107 | 0.016 |

Source: CARB, 2006; CARB, 2007c.
California Ambient Air Quality Standard (CAAQS): 1-hr, 0.25 ppm
National Ambient Air Quality Standard (NAAQS): Annual, 0.053 ppm

Table D.2-7 summarizes the ambient particulate matter data collected from the Banning Airport monitoring station for the past nine years. The table includes the maximum 24-hour and annual arithmetic average concentrations.

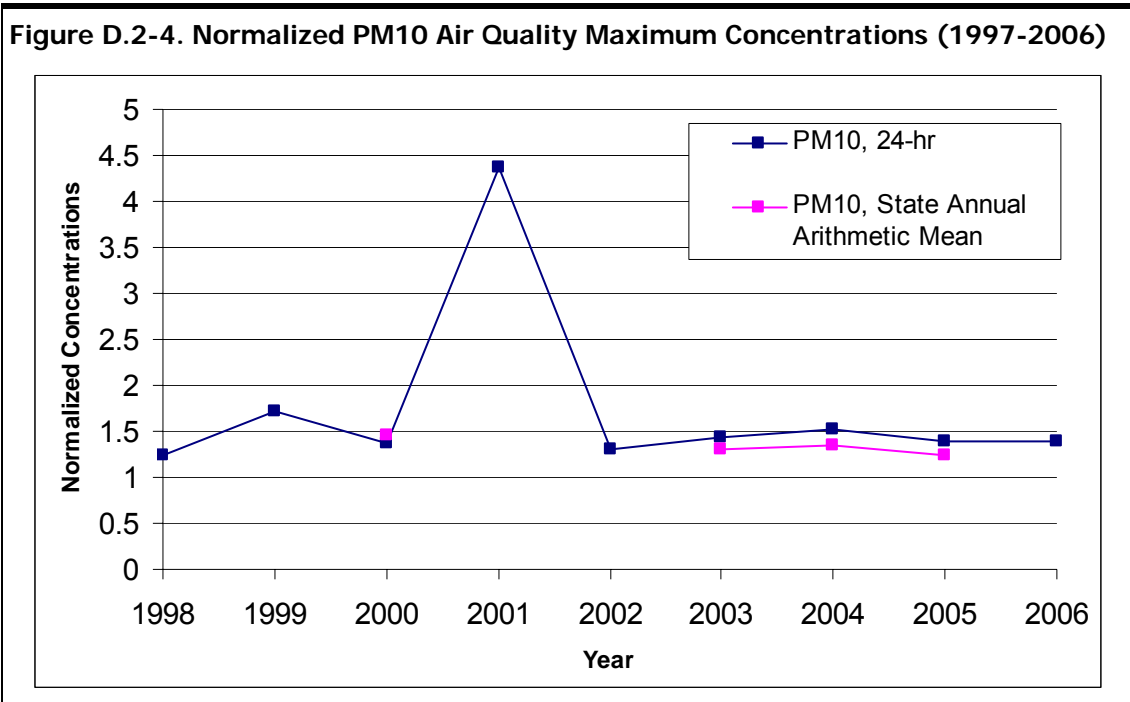
| Year | Days * Above Daily NAAQS | Days * Above Daily CAAQS | Month of Max. Daily Avg. | Max. Daily Avg. (µg/m ³) | State Annual Arithmetic Mean (µg/m ³) |
|------|--------------------------|--------------------------|--------------------------|--------------------------------------|---|
| 1998 | 0 | 2 | OCT | 62 | --- |
| 1999 | 0 | 4 | AUG | 86 | --- |
| 2000 | 0 | 5 | SEP | 69 | 29.1 |
| 2001 | 1 | 7 | AUG | 219 | --- |
| 2002 | 0 | 4 | APR | 65 | --- |
| 2003 | 0 | 1 | AUG | 72 | 26.2 |
| 2004 | 0 | 3 | JUL | 76 | 27.1 |
| 2005 | 0 | 1 | AUG | 70 | 24.6 |
| 2006 | 0 | 5 | JUN | 70 | --- |

Source: CARB, 2007c. California Ambient Air Quality Standard (CAAQS): 24-hr, 50 µg/m³; annual arithmetic, 20 µg/m³
National Ambient Air Quality Standard (NAAQS): 24-hr, 150 µg/m³
* Days above the State and national standard (monitored): Because PM10 is monitored approximately once every six days, the potential number of exceedance days is approximated by the number of monitor days of exceedance multiplied by six.

As shown in Table D.2-7, the Project area experiences regular exceedances of the State 24-hour and annual arithmetic mean PM10 standards and exceeded the federal 24-hour standard in 2001. The SCAB is in serious nonattainment for the federal PM10 standard and in nonattainment of the State PM10 standard.

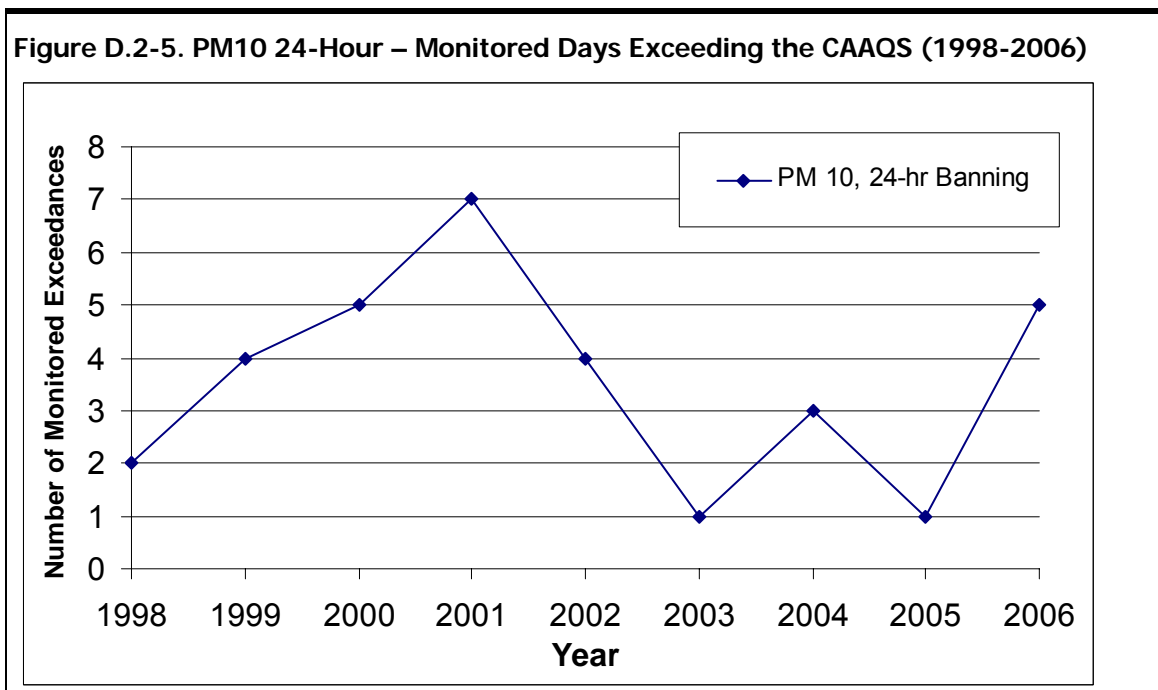
The 1998 to 2006 trends for the maximum 24-hour PM10 and State annual arithmetic mean PM10, referenced to the most stringent standard, and the number of days exceeding the California 24-hour

PM10 standard for the Banning Airport monitoring station are shown in Figures D.2-4 and D.2-5, respectively.



Source: CARB, 2006; CARB, 2007c.

Note: A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard.



Source: CARB, 2006; CARB, 2007c.

Note: Monitoring occurs approximately every six days so the total days exceeding the CAAQS is determined by multiplying the number of monitored exceedances by six.

Fine Particulate Matter (PM2.5)

Table D.2-8 summarizes the ambient fine particulate matter data collected over the past seven years from San Bernardino which is considered the most representative PM2.5 monitoring station located near the Project area.

As shown in Table D.2-8, the 98th percentile 24-hour average PM2.5 concentration levels exceed the NAAQS of 35 µg/m³ and exceed the federal and State annual averages of 15 µg/m³ and 12 µg/m³, respectively. The SCAB is designated nonattainment for the federal and State PM2.5 standards.

| Year | Month of Max. Daily Avg. | Max. Daily Avg. (µg/m ³) | 98 th Percentile of Max. Daily Avg. (µg/m ³) | Days Above 98 th Percentile Daily NAAQS | 3-Yr. Avg. 98 th Percentile of Max. Daily Avg. (µg/m ³) | National Annual Avg. (µg/m ³) | 3-Yr. Avg. of National Annual Avg. (µg/m ³) |
|------|--------------------------|--------------------------------------|---|--|--|---|---|
| 1999 | NOV | 121.4 | 71.5 | 4 | --- | 25.6 | --- |
| 2000 | OCT | 89.8 | 70.3 | 2 | --- | 25.9 | --- |
| 2001 | APR | 78.5 | 68.4 | 5 | 70 | 26.1 | 25 |
| 2002 | OCT | 82.1 | 66.3 | 3 | 68 | 25.8 | 25 |
| 2003 | OCT | 73.9 | 58.4 | 1 | 64 | 22.2 | 24 |
| 2004 | JUL | 93.4 | 72.4 | 4 | 66 | 21.9 | 23 |
| 2005 | OCT | 106.2 | 43.4 | 1 | 58 | 17.4 | 20 |
| 2006 | MAY | 55 | 47.7 | 0 | 55 | 17.7 | 19 |

Source: CARB, 2007c.

National Ambient Air Quality Standard: 3-Year Average - 98th Percentile of 24-Hr Avg. Conc., 35 µg/m³.

3-Year Average of Annual Arithmetic Mean (National Annual Average), 15 µg/m³; 3-Year Average of Annual Arithmetic Mean (State Annual Average), 12µg/m³.

Sulfur Dioxide (SO₂)

Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Fuels such as natural gas contain very little sulfur and consequently have very low SO₂ emissions when combusted. By contrast, fuels high in sulfur content such as coal or heavy fuel oils can emit very large amounts of SO₂ when combusted. Sources of SO₂ emissions come from every economic sector and include a wide variety of gaseous, liquid, and solid fuels. Sulfur dioxide ambient concentrations in the Project area are well below State and federal standards. Additionally, due to reduced sulfur content standards for diesel fuel, projects such as the El Casco System Project that only emit sulfur oxides (SO_x) from construction equipment will have a very limited SO_x emissions potential.

Summary

As discussed above and presented in Table D.2-3, the SCAB is in nonattainment of the federal 1-hour and 8-hour ozone, CO, PM10, and PM2.5 standards; and nonattainment with the State 1-hour ozone, CO, PM10, and PM2.5 standards. The Project area is designated as attainment/unclassified for the nitrogen dioxide and sulfur dioxide for both State and federal standards. The Project area continues to exceed the State 1-hour and federal 8-hour ozone and particulate matter standards with little or no progress since 1998. As such, an increase in emissions of ozone precursors and particulate matter and particulate matter precursors would cause or contribute to existing air quality violations, causing a significant air quality impact.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The Proposed Project and alternatives include several stationary construction sites and linear subtransmission construction routes. For many of these construction sites and subtransmission construction routes there would be nearby sensitive receptors (e.g., local residences, schools, hospitals, churches, recreational facilities). The proximity of the nearest sensitive receptors is discussed in additional detail with the localized impact analysis.

Greenhouse Gases

Greenhouse gases (GHG) that contribute to global climate change are carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF₆). In response to Executive Order S-3-05 (June 2005), which declared California's particular vulnerability to climate change, the California Global Warming Solutions Act of 2006, Assembly Bill 32 (AB32), was signed into effect on September 27, 2006. In passing the bill, the California Legislature found that

“Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems” (California Health & Safety Code, Sec. 38500, Division 25.5, Part 1).

Emissions of CO₂ occur largely from combustion of fossil fuels. The major categories of fossil fuel combustion CO₂ sources can be broken into sectors for residential, commercial, industrial, transportation, and electricity generation. The transportation sector includes all motor gasoline and diesel fuel combustion, and the GHG emissions of this sector are not split into activities or uses (i.e., there is no separate estimate for the level of GHG emissions caused by gasoline or diesel fuel combustion related to statewide construction activities). Other GHG emissions such as methane (CH₄) and nitrous oxide (N₂O) are also tracked by State inventories but occur in much smaller quantities. The global warming potential of methane is about 21 times that of CO₂. When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO₂ emission rate (CO₂ Eq.).

California’s greenhouse gas emissions are large in a world-scale context and growing over time (CEC, 2007). The State is responsible for approximately 500 million metric tons of CO₂ equivalent (MMTCO₂ Eq.) or more than one percent of the 49,000 MMTCO₂ Eq. emitted globally (IPCC, 2007). Electricity generation within California is responsible for about 50 million metric tons of CO₂ (depending on yearly variations) or 15 percent of the total statewide CO₂ emissions and about one percent of statewide methane emissions. Electricity generation in other states delivered to California over high-voltage transmission lines also causes a substantial quantity of GHG emissions, about 10 percent more than the amount from in-state electricity generation. The use of sulfur hexafluoride (SF₆) in power transformers and circuit breakers at power plants and along transmission lines also poses a concern, because this pollutant can slowly escape from the equipment, and it has an extremely high global warming potential (one ton of SF₆ is equivalent to approximately 23,900 tons of CO₂).

Statewide emissions of greenhouse gases from relevant source categories in 1990 and later years are summarized in Table D.2-9.

Table D. 2-9. California Greenhouse Gas Emissions (million metric tons CO₂ Eq.)

| Emission Inventory Category | 1990 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|---------------|---------------|---------------|---------------|---------------|---------------|------------|
| Residential Fuel Combustion (CO ₂) | 28.97 | 30.25 | 27.21 | 27.32 | 26.40 | 27.86 | --- |
| Commercial Fuel Combustion (CO ₂) | 12.65 | 15.63 | 12.04 | 17.84 | 15.06 | 12.1 | --- |
| Industrial Fuel Combustion (CO ₂) | 66.12 | 76.17 | 80.48 | 71.53 | 65.47 | 67.1 | --- |
| Transportation Fuel Combustion (CO ₂) | 161.08 | 181.68 | 182.49 | 190.19 | 180.64 | 187.95 | --- |
| Electricity Generation, In-State (CO ₂) | 43.36 | 55.87 | 61.35 | 47.78 | 45.92 | 55.10 | 49.0 |
| Elec. Generation Subtotal, Natural Gas (CO ₂) | 36.42 | 49.71 | 55.48 | 41.98 | 40.56 | 48.94 | 43.0 |
| Elec. Generation Subtotal, Coal (CO ₂) | 2.33 | 2.26 | 2.13 | 2.39 | 2.17 | 2.58 | 2.2 |
| Elec. Generation Subtotal, Petroleum (CO ₂) | 4.61 | 3.90 | 3.74 | 3.41 | 3.20 | 3.59 | 3.7 |
| Methane (all CH ₄ shown as CO ₂ Eq.) | 25.82 | 26.32 | 26.62 | 27.07 | 27.49 | 27.80 | --- |
| Nitrous Oxide (all N ₂ O shown as CO ₂ Eq.) | 32.75 | 31.43 | 30.76 | 34.48 | 33.85 | 33.34 | --- |
| Electricity Transmission and Distribution (SF ₆ shown as CO ₂ Eq.) | 2.32 | 1.14 | 1.10 | 1.04 | 1.01 | 1.02 | --- |
| Total California Greenhouse Gas Emissions without Electricity Imports | 389.97 | 440.47 | 446.35 | 444.86 | 423.20 | 439.19 | --- |
| Electricity Imports (CO ₂ Eq.) | 43.31 | 40.48 | 47.37 | 51.73 | 56.44 | 60.81 | --- |
| Total California Greenhouse Gas Emissions with Electricity Imports | 433.28 | 480.94 | 493.72 | 496.59 | 479.64 | 500.00 | --- |

Source: California Energy Commission, 2007. (Totals include source categories not shown. Data reflect changes in memo from CEC to CARB dated January 23, 2007.)

D.2.2 Applicable Regulations, Plans, and Standards

The Proposed Project includes construction but does not include any stationary emission sources, so there are very few direct air quality regulations that specifically regulate the Project’s air quality emission sources. The regulations that do apply, such as fugitive dust regulations, tend to be general and allow multiple means of achieving compliance. A description of the specific and general regulations that apply to the Project is provided below.

D.2.2.1 Federal

The United States Environmental Protection Agency (USEPA) has issued a number of National Ambient Air Quality Standards (NAAQS). Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂). Additional information regarding the NAAQS that are relevant to the Project is provided Section C.2.1.2. The South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) are the responsible agencies for providing attainment plans and meeting attainment with these standards; and the USEPA reviews and approves these plans and regulations that are designed to attain and maintain attainment with the NAAQS.

USEPA has a number of other regulations under the authority of the federal Clean Air Act (such as New Source Review [NSR], Prevention of Significant Deterioration [PSD], Title V permitting program, etc.); however, none of these regulations apply to this Project because the Project would have no operating stationary emission sources. Therefore, a PSD air quality impact analysis of the Proposed Project's impacts to the nearest mandatory Class I Areas (i.e., national forests, monuments and wilderness areas) is not required.

The USEPA does have on-road and off-road engine emission reduction programs that indirectly affect the Project's emissions through the phasing in of cleaner on-road and off-road equipment engines.

D.2.2.2 State

CARB has issued a number of California Ambient Air Quality Standards (CAAQS). These standards include pollutants not covered under the NAAQS and also require more stringent standards than provided under the NAAQS. Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), sulfur dioxide (SO₂), lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Additional information regarding the CAAQS that are relevant to the Project is provided Section D.2.1.2.

CARB, like USEPA, also has on-road and off-road engine emission reduction programs that indirectly affect the Project's emissions through the phasing in of cleaner on-road and off-road equipment engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a Statewide portable program to operate their equipment, which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts.

D.2.2.3 Local

The Proposed Project is located within the jurisdiction of the SCAQMD. Local jurisdictions are responsible for planning, implementing, and enforcing federal and State ambient standards within their jurisdictions. The regulations of these agencies are focused on stationary sources; therefore, most of the local agency regulations are not relevant to this Project. However, portable engines used during construction that are larger than 50 hp and that are not registered under the CARB Portable Equipment Registration Program would need to be obtain permits from the SCAQMD.

SCAQMD has approved Air Quality Management Plans for Ozone and PM₁₀. The Proposed Project does not include any components that would be inconsistent with these plans as long as the Project

complies with all relevant adopted SCAQMD rules and regulations. Currently the only specifically relevant regulations are the SCAQMD visible emissions, nuisance, and fugitive dust regulations with which the Project's construction will need to comply. The specific regulations are as follows:

- **SCAQMD Rule 401 – Visible Emissions.** Prohibits visible air emissions as dark or darker in shade than No. 1 on the Ringelmann chart (20 percent opacity) for more than three minutes in any 1-hour period.
- **SCAQMD Rule 402 – Nuisance.** Prohibits emissions that cause injury, nuisance, or annoyance, or that endanger the comfort, repose, health, or safety of the public, or that cause injury or damage to business or property.
- **SCAQMD Rule 403 – Fugitive Dust.** Limits the amount of particulate matter caused by manmade fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions.

These rules limit the visible dust emissions from the Project construction sites, prohibit emissions that can cause a public nuisance, and require the prevention and reduction of fugitive dust emissions. One or more mitigation measures are required by the Fugitive Dust rules to reduce fugitive dust emissions from specific dust causing activities. These measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities (such as during periods of high winds). Many of the Rule 403 control measures are identified in the Applicant-Proposed Measures discussed in Section D.2.3.2.

The relevant local agency general plans, as shown in Section F Table F-3, air quality goals generally refer to compliance with SCAQMD rules and regulations, and do not generally provide specifically relevant mitigation goals for construction emissions beyond those required or recommended by SCAQMD.

D.2.2.4 Climate Change Policies and Regulations

California Global Warming Solutions Act of 2006 (AB32). This law requires CARB to adopt a statewide greenhouse gas emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. To achieve this, CARB has a mandate to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

CARB announced early action GHG reduction measures in June 2007 and is expected to establish a statewide emissions cap for 2020 by January 2008. Also by January 2008, CARB is scheduled to adopt regulations requiring mandatory GHG emissions reporting. The remainder of the timeline for implementation would have CARB adopting a plan by January 1, 2009 that would indicate how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanisms, and other actions. Then, during 2009, ARB staff would draft rule language to implement its plan and hold public workshops on each measure including market mechanisms (CARB, 2006).

Strategies that the State should pursue for managing GHG emissions in California are identified in the California Climate Action Team's Report to the Governor (CalEPA, 2006). Many focus on generally reducing consumption of petroleum across all areas of the California economy. Improvements in transportation energy efficiency (fuel economy) and alternatives to petroleum-based fuels are slated to provide substantial reductions by 2020 (CalEPA, 2006). Initially, three "discrete" early action measures to reduce GHG emissions between 13 and 26 MMTCO₂ Eq. annually by 2020 are being pursued: the Low Carbon Fuel Standard; reduction of refrigerant losses from motor vehicle air conditioning maintenance; and increased methane capture from landfills (CARB, 2007).

CPUC GHG Emissions Performance Standard. The Electricity GHG Emission Standards Act (SB1368) was enacted in 2006, and at its January 25, 2007 meeting, the CPUC adopted GHG requirements in the form of an Emissions Performance Standard for any long-term power commitments made by the State’s electrical utilities. Utilities are not allowed to enter into a long-term commitment to buy baseload power from power plants that have CO₂ emissions greater than 1,100 pounds (0.5 metric tons) per megawatt-hour (MWh), which is roughly the amount emitted by a combined cycle turbine fueled with natural gas. The GHG Emissions Performance Standard applies to new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or more, including contracts with power plants located outside of California.¹ On May 23, 2007, the CEC also adopted a performance standard consistent with that adopted by the CPUC.²

IPCC Key Mitigation Technologies and Practices for Energy Supply. In the absence of explicit State or federal GHG requirements at this time, international literature also provides policy direction. The Intergovernmental Panel on Climate Change (IPCC) provides a broad overview of climate change mitigation strategies that are available to policy-makers and decisionmakers. The following strategies are identified by IPCC for decisions related to energy supply (IPCC, 2007).

- **Key mitigation technologies and practices currently commercially available.** Improved energy supply and distribution efficiency; fuel switching from coal to gas; nuclear power; renewable heat and power (hydropower, solar, wind, geothermal, and bioenergy); combined heat and power; early applications of Carbon Capture and Storage (e.g., storage of removed CO₂ from natural gas).
- **Key mitigation technologies and practices projected to be commercialized before 2030.** Carbon capture and storage for gas, biomass and coal-fired electricity generating facilities; advanced nuclear power; advanced renewable energy, including tidal and waves energy, concentrating solar, and solar photovoltaic.

D.2.3 Environmental Impacts and Mitigation Measures for the Proposed Project

D.2.3.1 Significance Criteria

CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The SCAQMD has established regional thresholds of significance for construction activities and for project operations as shown below in Table D.2-10.

| Criteria Pollutant | South Coast AQMD | |
|----------------------------------|--------------------------|---------------------|
| | Construction (tons/year) | Operation (lbs/day) |
| Carbon Monoxide (CO) | 550 | 550 |
| Oxides of Nitrogen (NOx) | 100 | 55 |
| Particulate Matter (PM10) | 150 | 150 |
| Fine Particulate Matter (PM2.5) | 55 | 55 |
| Oxides of Sulfur (SOx) | 150 | 150 |
| Volatile Organic Compounds (VOC) | 75 | 55 |

Source: SCAQMD, 2007.

¹ See Rule at http://www.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm

² See CEC Docket # 06-OIR-1, <http://www.energy.ca.gov/ghgstandards/index.html>.

In addition to the thresholds provided in Table D.2-10, the SCAQMD provides additional relevant localized significance thresholds (LSTs) for toxic air contaminants (TACs), odors, and ambient air quality as shown in Table D.2-11.

| Criteria Pollutant | Toxic Air Contaminants (TACs) and Odor Thresholds |
|---|---|
| TACs (including carcinogens and non-carcinogens) | Maximum Incremental Cancer Risk \geq 10 in 1 million Hazard Index \geq 1.0 (project increment) Hazard Index \geq 3.0 (facility wide) |
| Odor | Project creates an odor nuisance pursuant to SCAQMD Rule 402 |
| Ambient Air Quality for Criteria Pollutants ^a | |
| NO ₂ 1-Hour Average Annual Average | Project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (State) 0.053 ppm (federal) |
| PM10 24-Hour Average | 10.4 $\mu\text{g}/\text{m}^3$ (recommended for construction) ^b 2.5 $\mu\text{g}/\text{m}^3$ (operation) |
| PM2.5 24-hour average | 10.4 $\mu\text{g}/\text{m}^3$ (construction) ^b & 2.5 $\mu\text{g}/\text{m}^3$ (operation) |
| CO 1-Hour Average 8-Hour Average | Project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (State) 9.0 ppm (State/federal) |

Source: SCAQMD, 2007.

Notes: lbs/day = pounds per day; ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; \geq greater than or equal to

a. Ambient air quality threshold for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

b. Ambient air quality threshold based on SCAQMD Rule 403.

Specific onsite emission thresholds have been developed for assessment of the LSTs. These thresholds are determined by Sensitive Receptor Areas (SRAs) within the South Coast Air Basin. The main Project area is located within SRA 28 and SRA 29. The Mill Creek communication site and the fiber optic line construction route are also in SRA 35. The specific emission thresholds, based on the distance to sensitive receptors for SRA 28, 29, and 35 are listed in Table D.2-12.

| SRA # | Pollutant | | | | | | | | | | | |
|-----------------------|------------|-----|-----|------------|------|------|------------|----|----|------------|---|----|
| | NOx | | | CO | | | PM10 | | | PM2.5 | | |
| | Site Acres | | | Site Acres | | | Site Acres | | | Site Acres | | |
| | 1 | 2 | 5 | 1 | 2 | 5 | 1 | 2 | 5 | 1 | 2 | 5 |
| 25 meters to receptor | | | | | | | | | | | | |
| 28 | 250 | 361 | 574 | 760 | 1115 | 1991 | 4 | 7 | 13 | 3 | 4 | 8 |
| 29 | 236 | 340 | 540 | 944 | 1456 | 2660 | 6 | 10 | 21 | 4 | 6 | 11 |
| 35 | 191 | 276 | 439 | 509 | 771 | 1363 | 4 | 7 | 14 | 4 | 5 | 9 |
| 50 meters to receptor | | | | | | | | | | | | |
| 28 | 314 | 425 | 643 | 1,116 | 1592 | 2750 | 12 | 80 | 40 | 4 | 6 | 10 |
| 29 | 298 | 401 | 606 | 1341 | 1935 | 3377 | 19 | 32 | 67 | 7 | 9 | 14 |
| 35 | 240 | 325 | 492 | 792 | 1125 | 1898 | 12 | 21 | 42 | 5 | 7 | 12 |

| Table D.2-12. Applicable SCAQMD LST Emission Thresholds (lbs/day) | | | | | | | | | | | | |
|---|------------|-------|-------|------------|-------|-------|------------|-----|-----|------------|-----|-----|
| SRA # | Pollutant | | | | | | | | | | | |
| | NOx | | | CO | | | PM10 | | | PM2.5 | | |
| | Site Acres | | | Site Acres | | | Site Acres | | | Site Acres | | |
| | 1 | 2 | 5 | 1 | 2 | 5 | 1 | 2 | 5 | 1 | 2 | 5 |
| 100 meters to receptor | | | | | | | | | | | | |
| 28 | 451 | 560 | 803 | 2205 | 2817 | 4338 | 30 | 38 | 59 | 8 | 10 | 16 |
| 29 | 432 | 534 | 761 | 2477 | 3266 | 5226 | 55 | 73 | 104 | 14 | 17 | 25 |
| 35 | 343 | 427 | 614 | 1607 | 2051 | 3129 | 36 | 44 | 66 | 10 | 13 | 20 |
| 200 meters to receptor | | | | | | | | | | | | |
| 28 | 712 | 805 | 1,038 | 5365 | 6404 | 8660 | 67 | 75 | 96 | 20 | 23 | 31 |
| 29 | 683 | 778 | 993 | 5812 | 6985 | 9806 | 129 | 157 | 180 | 36 | 41 | 55 |
| 35 | 543 | 613 | 790 | 4163 | 4818 | 6400 | 82 | 90 | 113 | 26 | 30 | 40 |
| 500 meters to receptor | | | | | | | | | | | | |
| 28 | 1,385 | 1,454 | 1,657 | 21711 | 23319 | 27729 | 178 | 186 | 207 | 86 | 91 | 105 |
| 29 | 1,337 | 1,403 | 1,595 | 23665 | 25396 | 30130 | 348 | 407 | 405 | 156 | 166 | 189 |
| 35 | 1,059 | 1,111 | 1,264 | 18100 | 19337 | 22549 | 220 | 230 | 255 | 112 | 120 | 140 |

Source: SCAQMD, 2007.

Values are for 1/2/5 acre active sites and are determined based on the minimum distance from the construction site to sensitive receptors.

Note that ozone is not included in Tables D.2-10, D.2-11, and D.2-12. Ozone is not directly emitted from stationary or mobile sources; rather it is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants, specifically oxides of nitrogen (NOx) and hydrocarbons (VOCs). Therefore, it cannot be directly regulated.

For this analysis, the Proposed Project may result in significant impacts if:

- The Project would be inconsistent with the current approved Air Quality Management Plans.
- The Project would expose a substantial number of people to objectionable odors.
- The Project would generate emissions of air pollutants that would exceed any SCAQMD regional air quality standard as defined in Table D.2-10.
- The Project would generate emissions of air pollutants that would exceed any SCAQMD localized significance threshold or toxic air contaminant threshold as defined in Tables D.2-11 and D.2-12.

There are no State or local air district criteria for assessing the climate change impacts of projects, but for this project, climate change impacts would be considered significant if:

- Activities associated with the Proposed Project would result in greenhouse gas emissions substantially exceeding baseline greenhouse gas emissions. Consistent with the aim of AB32 to provide GHG reductions, overall Proposed Project GHG emissions would “substantially exceed” baseline emissions if the total effect of all project activities causes a net increase of GHG emissions.

The Proposed Project and all alternatives would be constructed in compliance with applicable federal, State, and local requirements. The operating emissions would be comprised of minimal inspection and maintenance activities that would not significantly impact air quality, and the Project would not directly or indirectly cause any population growth that is not considered in the current approved air quality plan. Therefore, the Project would not be inconsistent with the currently approved Air Quality Management Plans.

The Project is comprised of construction activities that may include activities that would have minor odor sources, such as asphalt paving. However, these odors are generally mild and no odor nuisances

are expected from the Proposed Project construction activities. No odors would be expected from the Project's normal operating inspection and maintenance activities.

D.2.3.2 Applicant-Proposed Measures

SCE has committed to implementing the Applicant-Proposed Measures (APMs) presented in Table D.2-13 to reduce air quality impacts associated with construction. These APMs are incorporated into additional more specific mitigation measures that are recommended to ensure that all impacts would be reduced to the extent feasible (see Section D.2.3.3).

Table D.2-13: Applicant-Proposed Measures (APMs)³

| Air Quality | |
|---|--|
| APM AQ-1: Earth-moving | <ul style="list-style-type: none"> • Cease all active operations; OR • Apply water to soil not more than 15 minutes prior to moving such soil (SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions). |
| APM AQ-2: Disturbed surface areas | <ul style="list-style-type: none"> • On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR • Apply chemical stabilizers prior to wind event; OR • Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR • Utilize any combination of control actions presented above such that, in total, these actions apply to all disturbed surface areas. • (SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions) |
| APM AQ-3: Unpaved roads | <ul style="list-style-type: none"> • Apply chemical stabilizers prior to wind event; OR • Apply water twice per hour during active operation; OR • Stop all vehicular traffic. • (SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions) |
| APM AQ-4: Open storage piles | <ul style="list-style-type: none"> • Apply water twice per hour. • Install temporary coverings. • (SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions) |
| APM AQ-5: Paved road track-out | <ul style="list-style-type: none"> • Cover all haul vehicles; OR • Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads. • (SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions) |
| APM AQ-6: All categories | Any other control measures approved by the SCAQMD Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 of SCAQMD Rule 403 may be used. |
| APM AQ-7: Earth-moving (except construction cutting and filling areas, and mining operations) | <ul style="list-style-type: none"> • Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operation during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR • For any earth-moving, which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction. (SCAQMD Rule 403 Table 2) |

³ Applicant Proposed Measures (APMs) are numbered based on the section and sequence in which they appear in the PEAs.

Table D.2-13: Applicant-Proposed Measures (APMs)³

| | |
|---|--|
| APM AQ-8: Earth-moving: Construction fill areas | Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations. (SCAQMD Rule 403 Table 2). |
| APM AQ-9: Construction cut areas and mining operations | Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors. (SCAQMD Rule 403 Table 2) |
| APM AQ-10: Disturbed surface areas (except completed grading areas) | Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area. (SCAQMD Rule 403 Table 2) |
| APM AQ-11: Disturbed surface areas: Completed grading areas | Apply chemical stabilizers within five working days of grading completion. |
| APM AQ-12: Inactive disturbed surface areas | <ul style="list-style-type: none"> • Apply water to at least 80 [70] percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions. • Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface. • Establish a vegetative ground cover within 21 [30] days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter. • Utilize any combination of control actions presented above such that, in total, these actions apply to all inactive disturbed surface areas. |
| APM AQ-13: Unpaved Roads | <ul style="list-style-type: none"> • Water all roads used for any vehicular traffic at least once per every two hours of active operations (3 times per normal 8 hour work day). • Water all roads for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour. • Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface. |
| APM AQ-14: Open storage piles | <ul style="list-style-type: none"> • Apply chemical stabilizers. • Apply water to at least 80 [70] percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust. • Install temporary coverings. • Install a three-sided enclosure with walls with no more than 50 percent porosity, which extend, at a minimum, to the top of the pile. |
| APM AQ-15: All Categories | Any other control measures approved by the Executive Officer and the USEPA as equivalent to the methods specified in Rule 403 Table 2 may be used. |
| APM AQ-16: Track Control Options | <ul style="list-style-type: none"> • Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet. • Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device. • Any other control measures approved by the Executive Officer and the USEPA. |

Source: SCE, 2007a.

These fugitive dust control measures are essentially the same as the approved fugitive dust control measures listed in SCAQMD Rule 403.

D.2.3.3 Proposed Project Impact Analysis

Section D.2.3.3 describes the El Casco System Project (the “Proposed Project”) proposed by Southern California Edison (SCE). The information is intended to provide a detailed description of construction and operating components that would be associated with the Proposed Project, where environmental impacts are evaluated. Sections D.2.4 through D.2.6 provide descriptions of the impacts of the three Project alternatives, one of which is the No Project Alternative.

Construction Impact Assessment Methods

Construction emissions would result from onsite activities, such as site clearing and grading, civil and electrical work at substations, unpaved road grading and repair, subtransmission line and fiber optic line installation activities, and site cleanup and restoration. Additionally, there would be construction-related equipment, fueling, watering, and import/export haul trips and construction worker commute trips. Pollutant emissions would vary from day to day depending on the level of activity, the specific operations, and the prevailing weather. Pollutant emissions would also move during the construction of the linear subtransmission components of the Project.

Construction equipment would include machinery such as water trucks, dump trucks, backhoes, graders, bulldozers, loaders, cranes, forklifts, drillers, pavers, concrete trucks, crew trucks, and helicopters. A considerable number of truck trips would be associated with importing concrete and subtransmission cables and exporting waste soil.

Air emissions for the Proposed Project are calculated using a standard calculation methodology accepted by SCAQMD and incorporate SCAQMD Rule 401 fugitive dust control requirements. For offroad and onroad vehicles, emission factors from SCAQMD for the years 2008 through 2010 were used (SCAQMD, 2007), and USEPA spark ignition engine emission factors were used for any proposed small offroad gasoline engines (USEPA, 2005). Project schedule, equipment type and use, and crew size were obtained from a revised emission calculation provided by SCE (SCE, 2007d). Greenhouse gas emissions during construction are not quantified but described qualitatively.

Fugitive dust emissions are calculated using the USEPA’s AP-42 emission factors (USEPA, 2007b) and various SCAQMD CEQA Handbook guideline parameters (e.g., unpaved road silt load content) (SCAQMD, 1993). PM_{2.5} emissions are estimated using the emission factor sources noted, or when no PM_{2.5} factor is listed the PM_{2.5} fraction is determined using the current California Emission Inventory Development and Reporting System (CEIDARS) particulate size fractions obtained from the SCAQMD website (SCAQMD, 2007). Fugitive emission controls necessary to comply with SCAQMD Rule 401 have been incorporated into the emission analysis. Emission calculations and detailed assumptions are provided in Appendix 3 (Air Quality Calculations).

Operating Impact Assessment Methods

The operating emissions would be limited to the emissions caused by additional inspection and maintenance operations. There are no stationary sources proposed as part of the Project except the fugitive emission of SF₆, a greenhouse gas, which is described qualitatively. The additional inspection and maintenance activities are described and the impacts for these minimal activities are discussed qualitatively.

The Project may indirectly reduce emissions from power plants connected to the transmission grid by increasing transmission efficiencies and reducing the occurrence of blackouts that can increase local emissions from standby power generators.

Impact AQ-1: Construction emissions exceed regional significance criteria (Class I).

The regional significance criteria are compared with the construction emissions in Table D.2-14. The localized emissions are addressed in a separate following discussion.

Table D.2-14. Proposed Project Construction Emissions

| | Emissions (daily – lbs/day, annual – tons/yr) | | | | | |
|-------------------------|---|--------|--------|------|--------|-------|
| | VOC | CO | NOx | SOx | PM10 | PM2.5 |
| Maximum Daily Emissions | 30.84 | 124.60 | 209.56 | 0.24 | 190.98 | 44.46 |
| Significance Threshold | 75 | 550 | 100 | 150 | 150 | 55 |
| Exceeds (YES/NO) | NO | NO | YES | NO | YES | NO |
| Annual Emissions (2008) | 0.28 | 1.03 | 1.99 | 0.00 | 5.57 | 0.97 |
| Annual Emissions (2009) | 1.57 | 6.79 | 9.66 | 0.01 | 12.92 | 2.63 |
| Annual Emissions (2010) | 0.67 | 3.61 | 4.30 | 0.01 | 5.27 | 0.99 |
| Project Total Emissions | 2.53 | 11.42 | 15.95 | 0.02 | 23.76 | 4.60 |

Source: Appendix 3.

Daily construction emissions based on the current integrated Project construction schedule would be greater than the SCAQMD regional significance criteria for NOx and PM10. The PM10 emissions estimate already assumes the use of aggressive soil and unpaved road watering dust controls. The NOx emissions currently assume average fleet emissions for offroad and onroad equipment. Additional equipment-based mitigation can reduce the NOx emissions, but not in sufficient quantities to lower the emissions below the SCAQMD regional significance criteria. Therefore, the regional emission impacts are significant and unavoidable (Class I) and all feasible mitigation measures are needed to control NOx and PM10 emissions.

Implementation of Mitigation Measures AQ-1a (Fugitive Dust Controls) and AQ-1b (Control Exhaust Emissions) would reduce NOx and PM construction impacts to air quality in the SCAQMD to the maximum degree feasible but would not eliminate all potentially significant impacts. The Proposed Project’s NOx and PM10 emissions, even after implementation of these feasible mitigation measures, would likely remain above the SCAQMD daily significance threshold values. Therefore, the daily emissions from the Proposed Project would temporarily cause significant and unavoidable (Class I) regional impacts.

Mitigation Measures for Impact AQ-1

AQ-1a Fugitive Dust Controls. APMs AQ-1 to AQ-16 (see Table D.2-13) shall be implemented at all construction sites. Other SCAQMD Rule 403 dust control measures, not included in APMs AQ-1 to AQ-16, shall be implemented as appropriate to reduce fugitive dust emissions to the greatest extent feasible. A fugitive dust plan including these measures as well as their methods of implementation and assurance shall be submitted to the CPUC for review and approval at least 60 days before the start of construction. Additionally, a fugitive dust control plan shall be submitted to SCAQMD and grading plans shall be submitted to local jurisdictions as appropriate.

AQ-1b Control Exhaust Emissions. Emissions from offroad and onroad construction equipment shall be minimized to the extent feasible. An exhaust emission reduction plan shall be submitted to the CPUC for review and approval at least 60 days prior to the start of construction. The plan shall document the approach for ensuring carpooling, use of alternatively fueled and low emitting onroad and offroad vehicles, and shall define how and where records of equipment and equipment tuning and maintenance will be kept for CPUC review during construction. The exhaust emission reduction plan shall include, but not be limited to, the following measures:

- Offroad equipment greater than 50 horsepower shall, to the extent feasible, have the highest available USEPA/CARB Tier engines, or shall be alternatively fueled construction equipment.
- Onroad heavy haul equipment used for material import or waste export trips shall meet California onroad standards and new equipment/engines shall be used/contracted to the extent feasible.
- Construction workers will carpool when possible
- Vehicle idling time will be minimized (e.g., 5-minute maximum). SCE shall ensure that all construction workers are aware of the vehicle idling restriction by including explanation of this requirement in the Worker Training Program.
- Equipment will be properly tuned and maintained.
- All material deliveries and waste haul trips to and from the Project site shall be scheduled to occur outside of peak “rush hour” traffic hours (7:00 to 10:00 a.m. and 4:00 to 7:00 p.m.) to the extent feasible

Impact AQ-2: Construction emissions exceed localized significance criteria (Class I).

Table D.2-15 shows the maximum spread of construction emissions for each Project element in comparison with the appropriate worst-case SCAQMD significant emission thresholds for the nearest sensitive receptor found by SCE for each construction element.

| | NOx | PM10 | PM2.5 |
|---|-------|-------|-------|
| El Casco Substation Maximum Daily Emissions | 108.0 | 121.4 | 20.3 |
| Localized Significance Thresholds (SRA 28, 5-acre site, 500 meters) | 1,657 | 207 | 105 |
| Exceeds (YES/NO) | NO | NO | NO |
| Banning Substation Maximum Daily Emissions | 51.5 | 21.77 | 7.8 |
| Localized Significance Thresholds (SRA 29, 1-acre site, 25 meters) | 236 | 6 | 4 |
| Exceeds (YES/NO) | NO | YES | YES |
| Zanja Substation Maximum Daily Emissions | 39.4 | 21.1 | 7.2 |
| Localized Significance Thresholds (SRA 35, 1-acre site, 50 meters) | 240 | 12 | 5 |
| Exceeds (YES/NO) | NO | YES | YES |
| 115 kV Installation Maximum Daily Emissions | 12.0 | 19.9 | 3.5 |
| Localized Significance Thresholds (SRA 29, 1-acre site, 25 meters) | 236 | 6 | 4 |
| Exceeds (YES/NO) | NO | YES | NO |
| 220 kV Installation Maximum Daily Emissions | 42.9 | 8.5 | 2.9 |
| Localized Significance Thresholds (SRA 28, 1-acre site, 500 meters) | 1,385 | 178 | 86 |
| Exceeds (YES/NO) | NO | NO | NO |

Table D.2-15. Proposed Project Localized Construction Impacts

| | NOx | PM10 | PM2.5 |
|---|-------|------|-------|
| Mill Creek Tower Maximum Daily Emissions | 26.5 | 19.6 | 3.5 |
| Localized Significance Thresholds (SRA 38, 1-acre site, 500 meters) | 1,059 | 220 | 112 |
| Exceeds (YES/NO) | NO | NO | NO |
| Fiber Optics Installation Maximum Daily Emissions | 8.7 | 0.7 | 0.4 |
| Localized Significance Thresholds (SRA 29/35, 1-acre site, 25 meters) | 191 | 4 | 4 |
| Exceeds (YES/NO) | NO | NO | NO |
| 12kV Installation Maximum Daily Emissions | 10.8 | 5.0 | 1.2 |
| Localized Significance Thresholds (SRA 28, 1-acre site, 500 meters) | 1,385 | 178 | 86 |
| Exceeds (YES/NO) | NO | NO | NO |

Source: Appendix 3.

1. This represents onsite emissions only. Onroad vehicle emissions not occurring onsite are not included.
2. The CO emission LST values that would be used for each construction element are all within ten percent or are greater than the regional threshold of 550 lbs/day, so using the regional determination (see Table D.2-13) as a basis there is no potential for this Project to exceed the CO emission LSTs.

As shown in Table D.2-15, selected construction activities are predicted to cause daily construction site emissions that exceed PM10 and PM2.5 LST thresholds. No construction activities are predicted to exceed the NOx LST thresholds. The construction activities that are predicted to cause emissions greater than the appropriate PM10 and PM2.5 LSTs are those that include assumed unpaved access or earthmoving work, and only occur where sensitive receptors are very close to the work areas. For the 115 kV installation, the LST exceedances would only occur where the 115 kV subtransmission route would be accessed by an unpaved access road and where residences are also located within approximately 50 meters of the work area. Due to the predicted LST exceedances, the Proposed Project would cause significant and unavoidable (Class I) localized PM10 and PM2.5 impacts for nearby sensitive receptors to the Banning Substation, the Zanja Substation, and selected areas of the 115 kV installation.

The emission estimates, per SCAQMD's local significance threshold (LST) methodology, are limited to the onsite emission sources only. They do not include the paved or unpaved road travel needed to get personnel and materials to the construction sites or the emissions from access road construction, which do not occur at a single site but rather over a long stretch of road. A small portion of the onroad vehicle exhaust and road dust emissions are included for their activity in the site area domain (1-acre or 5-acres depending on the construction activity). Fugitive dust mitigation measures are assumed to be implemented in these emission estimates.

The Proposed Project does not include any stationary sources or have any significant sources of toxic air contaminants. The Proposed Project would use diesel and gasoline fueled equipment that will emit minor amounts of air toxic compounds; however, the Project's diesel particulate emissions and other engine emission toxic air contaminants would be emitted in small quantities over a large Project area. The health risk from toxic air contaminants would be less than significant (Class III).

Implementation of Mitigation Measures AQ-1a (Fugitive Dust Controls) and AQ-1b (Control Exhaust Emissions) would reduce impacts to air quality during construction to the maximum degree feasible but would not eliminate all potentially significant impacts. The Proposed Project's PM10 and PM2.5 emissions, even after implementation of these feasible mitigation measures, would likely remain above the SCAQMD LST significance threshold values for selected construction activities and locations. Therefore, the daily emissions from the Proposed Project would temporarily cause significant and unavoidable impacts to sensitive receptors (Class I).

Mitigation Measures for Impact AQ-2

AQ-1a Fugitive Dust Controls

AQ-1b Control Exhaust Emissions

Impact AQ-3: Emissions Contribute to Climate Change (Class I)

The Proposed Project would cause greenhouse gas (GHG) emissions during the short-term duration of project construction. During operation of the project, minor quantities of long-term greenhouse gas emissions would also occur from the Proposed Project. There would be a minimal increase in the inspection and maintenance emissions for the new subtransmission lines; however, these increases would be somewhat offset because the project would provide greater transmission effectiveness and efficiency that could slightly reduce power generation requirements and line loss totals, which together might cause a slight indirect reduction in greenhouse gases from power plants connected to the grid during project operation. Demand for electricity would not change as a result of the Proposed Project, and power generated by power plants in response to the demand would occur at some location regardless of whether the Proposed Project is approved or disapproved. No direct or indirect air quality impacts would be related to the project through increased power plant operation. The intent of the Proposed Project is to improve delivery of power that is currently generated to the local area and prevent overload of the existing system. In this way, by improving the distribution efficiency of the California transmission grid, the Proposed Project would partially implement one of the IPCC key strategies for mitigating climate change.

An unquantifiable direct air quality impact of subtransmission system operation would be the potential escape of SF₆, a potent greenhouse gas, used in operation of the electrical switchgear equipment and circuit breakers. Because of the high global warming potential of SF₆ even small quantities of emissions are a concern. Any increase in SF₆ emissions would result in a net increase of GHG emissions and a significant impact. SCE currently takes voluntary steps to address this issue by participating in the U.S. EPA SF₆ Emissions Reduction Partnership for Electric Power Systems, however, to ensure that all feasible SF₆ reduction strategies are implemented, Mitigation Measure AQ-3 would be required to minimize the impact of SF₆ escape. Although the measure would reduce SF₆ escape, it would not be possible to entirely eliminate this impact. Therefore, the direct impact of the Proposed Project on greenhouse gases would remain significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-3

AQ-3 Avoid Sulfur Hexafluoride Emissions. SCE shall identify sulfur hexafluoride (SF₆) leaks and establish a strategy for replacing leaking equipment to reduce SF₆ leaks. To accomplish this, SCE shall develop and maintain a record of SF₆ purchases, an SF₆ leak detection and repair program using laser imaging leak detection and monitoring no less frequently than quarterly, an SF₆ recycling program, and an employee education and training program for avoiding or eliminating SF₆ emissions caused by the Proposed Project. The SF₆ leak detection and repair program shall be provided to the CPUC 90 days prior to project operation. SCE shall also report SF₆ emissions from the Proposed Project to the California Climate Action Registry (CCAR) according to CCAR methodologies or alternate methodology approved by the California Air Resources Board. To develop a complete GHG inventory, SCE shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and

indirect GHG emissions from transmission and distribution losses associated with the Proposed Project.

D.2.4 CPUC’s Northerly Route Alternative Option 3

In terms of air quality impacts the only difference between CPUC’s Northerly Route Alternative Option 3 (also referred to as Route Alternative Option 3) and the Proposed Project is the addition of the northern route that adds 135 additional 115 kV poles and changes areas of the Proposed Project’s 115 kV route from double circuit to single circuit (see Section C.4.2.1 for additional description of this Project alternative). The other Project components are the same as for the Proposed Project. The emission calculations, in Appendix 3, were revised to incorporate the additional 115 kV subtransmission line installation.

D.2.4.1 CPUC’s Northerly Route Alternative Option 3 – Environmental Setting

The Route Alternative Option 3 follows the same 115 kV subtransmission route as the Proposed Project in the south with the addition of the northern El Casco-Banning route. This northern Route Alternative Option 3 segment is still within the same geographic area considered for the Proposed Project, and the environmental setting for this alternative is the same as that provided for the Proposed Project in Sections D.2.1 and D.2.2.

D.2.4.2 CPUC’s Northerly Route Alternative Option 3 – Environmental Impacts and Mitigation Measures

Impact AQ-1: Construction emissions exceed regional significance criteria (Class I).

The regional significance criteria are compared with the construction emissions in Table D.2-16. The localized emissions are addressed in a separate following discussion.

Table D.2-16. CPUC’s Northerly Route Alternative Option 3 Construction Emissions

| | Emissions (daily – lbs/day, annual – tons/yr) | | | | | |
|-------------------------|---|--------|--------|------|--------|-------|
| | VOC | CO | NOx | SOx | PM10 | PM2.5 |
| Maximum Daily Emissions | 32.54 | 135.97 | 221.72 | 0.27 | 217.30 | 48.65 |
| Significance Threshold | 75 | 550 | 100 | 150 | 150 | 55 |
| Exceeds (YES/NO) | NO | NO | YES | NO | YES | NO |
| Annual Emissions (2008) | 0.28 | 1.03 | 1.99 | 0.00 | 5.57 | 0.97 |
| Annual Emissions (2009) | 1.66 | 7.32 | 10.34 | 0.01 | 14.54 | 2.92 |
| Annual Emissions (2010) | 0.67 | 3.58 | 4.28 | 0.01 | 4.10 | 0.81 |
| Project Total Emissions | 2.61 | 11.93 | 16.60 | 0.02 | 24.21 | 4.71 |

Source: Appendix 3.

Daily construction emissions based on the current integrated Project construction schedule for Route Alternative Option 3 would be greater than the SCAQMD regional significance criteria for NOx and PM10. The PM10 emissions estimate already assumes the use of aggressive soil and unpaved road watering dust controls. The NOx emissions currently assume average fleet emissions for offroad and

onroad equipment. Additional equipment-based mitigation can reduce the NO_x emissions, but not in sufficient quantities to lower the emissions below the SCAQMD regional significance criteria. Therefore, the regional emission impacts are significant and unavoidable (Class I) and all feasible mitigation measures are needed to control NO_x and PM₁₀ emissions.

Mitigation Measures for Impact AQ-1

AQ-1a Fugitive Dust Controls

AQ-1b Control Exhaust Emissions

Impact AQ-2: Construction emissions exceed localized significance criteria (Class I).

The localized impacts for all phases of construction for this alternative, except for the additional northern 115 kV segment, are identical to those for the Proposed Project as shown previously on Table D.2-14. The new 115 kV route has the same maximum emission levels for construction and the same LST significance criteria (same SRA, same site size, same minimum distance to receptor), so this is not an additional impact, rather it is the same impact that may occur in additional areas of the 115 kV route where the subtransmission route is unpaved and where sensitive receptors are located within 50 meters of the work areas. As noted previously, fugitive dust mitigation measures are assumed to be implemented in these emission estimates; therefore, Route Alternative Option 3 would cause significant and unavoidable (Class I) localized PM₁₀ and PM_{2.5} impacts for nearby sensitive receptors to the Banning Substation the Zanja Substation and selected areas of the 115 kV installation.

The Route Alternative Option 3 does not include any stationary sources or have any significant sources of toxic air contaminants. The Route Alternative Option 3 would use diesel and gasoline fueled equipment that would emit minor amounts of air toxic compounds; however, the Project's diesel particulate emissions and other engine emission toxic air contaminants would be emitted in small quantities over a large Project area. The health risk from toxic air contaminants would be less than significant (Class III).

Mitigation Measures for Impact AQ-2

AQ-1a Fugitive Dust Controls

AQ-1b Control Exhaust Emissions

Impact AQ-3: Emissions Contribute to Climate Change (Class I)

Construction and operation of Route Alternative Option 3 would result in similar emissions as those described above for the Proposed Project. An unquantifiable direct air quality impact of subtransmission system operation would be the potential escape of SF₆, a potent greenhouse gas, used in operation of the electrical switchgear equipment and circuit breakers. Any increase in SF₆ emissions would result in a net increase of GHG emissions and is considered adverse. Mitigation Measure AQ-3 would be required to minimize the impact of SF₆ escape. Although the measure would reduce SF₆ escape, it would not be possible to entirely eliminate this impact. Therefore, the direct impact of Route Alternative Option 3 on greenhouse gases would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-3

AQ-3 Avoid Sulfur Hexafluoride Emissions

D.2.5 Partial Underground Alternative

The Partial Underground Alternative would underground a portion of the proposed 115 kV subtransmission line and fiber optic route through the Sun Lakes Community in the City of Banning (See Section C.4.2.2 for additional description of this Project alternative). All other Project components are the same as the Proposed Project. The emission calculations, in Appendix 3, were revised to incorporate the underground construction requirements and the reduction in overhead construction requirements for the 115 kV subtransmission line installation.

D.2.5.1 Partial Underground Alternative – Environmental Setting

As the Partial Underground Alternative is identical to the Proposed Project with the exception of the approximately one-mile portion of subtransmission line and fiber optic cable that would be placed underground, the environmental setting for Partial Underground Alternative is the same as that provided for the Proposed Project in Sections D.2.1 and D.2.2.

D.2.5.2 Partial Underground Alternative – Environmental Impacts and Mitigation Measures

Impact AQ-1: Construction emissions exceed regional significance criteria (Class I).

The regional significance criteria are compared with the construction emissions in Table D.2-17. The localized emissions are addressed in a separate following discussion.

| | Emissions (daily – lbs/day, annual – tons/yr) | | | | | |
|-------------------------|---|--------|--------|------|--------|-------|
| | VOC | CO | NOx | SOx | PM10 | PM2.5 |
| Maximum Daily Emissions | 34.26 | 138.52 | 223.60 | 0.26 | 227.60 | 51.05 |
| Significance Threshold | 75 | 550 | 100 | 150 | 150 | 55 |
| Exceeds (YES/NO) | NO | NO | YES | NO | YES | NO |
| Annual Emissions (2008) | 0.28 | 1.03 | 1.99 | 0.00 | 5.57 | 0.97 |
| Annual Emissions (2009) | 1.77 | 7.53 | 10.76 | 0.01 | 15.51 | 3.12 |
| Annual Emissions (2010) | 0.87 | 4.50 | 5.54 | 0.01 | 6.56 | 1.06 |
| Project Total Emissions | 2.92 | 13.06 | 18.29 | 0.02 | 27.64 | 5.15 |

Source: Appendix 3.

Daily construction emissions based on the current integrated Project construction schedule for Partial Underground Alternative would be greater than the SCAQMD regional significance criteria for NOx and PM10. The PM10 emissions estimate already assumes the use of aggressive soil and unpaved road watering dust controls. The NOx emissions assume average fleet emissions for offroad and onroad equipment. Additional equipment-based mitigation can reduce the NOx emissions, but not in sufficient quantities to lower the emissions below the SCAQMD regional significance criteria. Therefore, the

regional emission impacts are significant and unavoidable (Class I) and all feasible mitigation measures are needed to control NOx and PM10 emissions.

Mitigation Measures for Impact AQ-1

AQ-1a Fugitive Dust Controls

AQ-1b Control Exhaust Emissions

Impact AQ-2: Construction emissions exceed localized significance criteria (Class I).

The localized impacts for all phases of construction for this alternative, except for the underground 115 kV segment, are identical to those for the Proposed Project as shown in Table D.2-15. The 115 kV underground route extends to within 25 meters of residences along areas of the route through the Sun Lakes Community. Table D.2-18 shows the maximum daily construction spread emissions for the construction of the 115 kV underground segment in comparison with the appropriate worst case SCAQMD significant emission thresholds.

Table D.2-18. Partial Underground Alternative Localized Construction Impacts

| | NOx | PM10 | PM2.5 |
|--|------|------|-------|
| 115 kV Installation Maximum Daily Emissions | 24.3 | 28.4 | 5.6 |
| Localized Significance Thresholds (SRA 29, 1-acre site, 25 meters) | 236 | 6 | 4 |
| Exceeds (YES/NO) | NO | YES | YES |

Source: Appendix 3.

- Notes:
1. This represents onsite emissions only. Onroad vehicle emissions not occurring onsite are not included.
 2. The CO emission LST values that would be used for each construction element are all within ten percent or are greater than the regional threshold of 550 lbs/day, so using the regional determination (see Table D.2-13) as a basis there is no potential for this Project to exceed the CO emission LSTs.

The localized impacts for all phases of construction for this alternative, except for the undergrounding area of the 115 kV subtransmission segment, are identical to those for the Proposed Project as shown previously in Table D.2-15. The new 115 kV underground subtransmission line is predicted to exceed the PM10 and PM2.5 LSTs for over 50 meters and 25 meters, respectively, from the underground route work areas. As noted previously, fugitive dust mitigation measures are assumed to be implemented in these emission estimates; therefore, the Partial Underground Alternative would cause significant and unavoidable (Class I) localized PM10 and PM2.5 impacts for nearby sensitive receptors to the Banning Substation the Zanja Substation and selected areas of the 115 kV installation (above and underground).

The Partial Underground Alternative does not include any stationary sources or have any significant sources of toxic air contaminants. The Partial Underground Alternative would use diesel and gasoline fueled equipment that would emit minor amounts of air toxic compounds; however, the Project's diesel particulate emissions and other engine emission toxic air contaminants would be emitted in small quantities over a large Project area. The health risk from toxic air contaminants would be less than significant (Class III).

Mitigation Measures for Impact AQ-2

AQ-1a Fugitive Dust Controls

AQ-1b Control Exhaust Emissions

Impact AQ-3: Emissions Contribute to Climate Change (Class I)

Construction and operation of the Partial Underground Alternative would result in similar emissions as those described above for the Proposed Project. An unquantifiable direct air quality impact of subtransmission system operation would be the potential escape of SF₆, a potent greenhouse gas, used in operation of the electrical switchgear equipment and circuit breakers. Any increase in SF₆ emissions would result in a net increase of GHG emissions and is considered adverse. Mitigation Measure AQ-3 would be required to minimize the impact of SF₆ escape. Although the measure would reduce SF₆ escape, it would not be possible to entirely eliminate this impact. Therefore, the direct impact of the Partial Underground Alternative on greenhouse gases would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-3

AQ-3 Avoid Sulfur Hexafluoride Emissions

D.2.6 No Project Alternative

Under the No Project Alternative the Proposed Project would not be built and none of the impacts described above would occur. However, without the Proposed Project, overload of the existing capacities would occur at five distribution stations that are currently served by the Vista and Devers 115 kV Systems. To address the overload conditions in the Maraschino service area, SCE would add a third transformer and two 12 kV distribution lines (each about nine miles in length).

D.2.6.1 Environmental Impacts of the No Project Alternative

Without upgrades to the existing system, major construction activities associated with the Proposed Project or an alternative to the Proposed Project would not occur. However, to address the overload conditions in the Maraschino Substation service area, SCE would add a third 28 MVA transformer and two 12 kV distribution lines (each approximately 9 miles in length) at Maraschino Substation in 2007. In addition, switchrack rebuilds at Banning and Zanja Substations would need to be completed. These activities would generate short-term temporary construction air quality emissions to the area. It is assumed that APMs presented in Section D.9.3.2 (Applicant-Proposed Measures), to reduce air quality impacts during construction would be implemented by SCE with the No Project Alternative. However, due to the limited amount of construction associated with the No Project Alternative, and the minimal amount of grading required for the construction of the two 12 kV distribution lines, the implementation of both APMs and mitigation similar to that included for the Proposed Project would reduce air quality emissions on an SCAQMD regional daily threshold level to a less-than-significant level (Class II) level.

As the location of the two 12 kV distribution line ROWs required at Maraschino Substation (each approximately 9 miles in length) is unknown at this time, it is possible that air quality emissions during construction of these lines could impact sensitive receptors and exceed LST thresholds. However, while the new 12 kV routes could be constructed in close proximity to sensitive receptors, the implementation of both APMs and mitigation similar to that included for the Proposed Project would reduce localized air quality emissions on a SCAQMD LST daily threshold level to a less-than-significant level (Class II) level.

Construction and operation of required No Project Alternative would result in fewer emissions than those described above for the Proposed Project. The construction emissions and possible fugitive

emissions of SF₆ from the transformer and substation improvements would cause an increase of greenhouse gas emissions similar to those of the Proposed Project. Mitigation similar to Measure AQ-3 described above would be required to minimize the impact of SF₆ escape associated with the No Project Alternative. Although the measure would reduce SF₆ escape, it would not be possible to entirely eliminate this impact. Therefore, significant unavoidable greenhouse gas emissions would occur (Class I). Furthermore, the No Project Alternative would not be as effective as the Proposed Project in improving the distribution efficiency of the California transmission grid, thus resulting in more greenhouse gas release.

D.2.7 Mitigation Monitoring, Compliance, and Reporting Table

Table D.2-19 on the following page presents the mitigation monitoring recommendations for air quality. These measures, including Applicant-Proposed Measures AQ-1 through AQ-16, would be applicable to construction of the Proposed Project and all Project alternatives. No air quality mitigation is necessary for Project operation.

Table D.2-19. Mitigation Monitoring Program – Air Quality

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--|---|----------------|---|--|--|----------------------------------|
| <p>AQ-1: Construction emissions exceed regional significance criteria (Class I).</p> <p>AQ-2: Construction emissions exceed localized significance criteria (Class I).</p> | <p>AQ-1a: Fugitive Dust Controls. APMs AQ-1 to AQ-16 shall be implemented at all construction sites. Other SCAQMD Rule 403 dust control measures, not included in APMs AQ-1 to AQ-16, shall be implemented as appropriate to reduce fugitive dust emissions to the greatest extent feasible. A fugitive dust plan including these measures as well as their methods of implementation and assurance shall be submitted to the CPUC for review and approval at least 60 days before the start of construction. Additionally, a fugitive dust control plan shall be submitted to SCAQMD and grading plans shall be submitted to local jurisdictions as appropriate.</p> | Entire Project | Review and approve fugitive dust plan. Onsite monitor to verify compliance with fugitive dust plan. | PM10 and PM2.5 emissions from Project construction are minimized to the extent feasible. | CPUC, SCAQMD, and local agencies that require grading plans. | Prior to and during construction |
| | <p>AQ-1b: Control Exhaust Emissions. Emissions from offroad and onroad construction equipment shall be minimized to the extent feasible. An exhaust emission reduction plan shall be submitted to the CPUC for review and approval at least 60 days prior to the start of construction. The plan shall document the approach for ensuring carpooling, use of alternatively fueled and low emitting onroad and offroad vehicles, and shall define how and where records of equipment and equipment tuning and maintenance will be kept for CPUC review during construction. The exhaust emission reduction plan shall include, but not be limited to, the following measures:</p> <ul style="list-style-type: none"> • Offroad equipment greater than 50 horsepower shall, to the extent feasible, have the highest available USEPA/CARB Tier engines, or shall be alternatively fueled construction equipment. • Onroad heavy haul equipment used for material import or waste export trips shall meet California onroad standards and new equipment/engines shall be used/contracted to the extent feasible. • Construction workers will carpool when possible • Vehicle idling time will be minimized (e.g., 5-minute maximum). SCE shall ensure that all | Entire Project | Review and approve exhaust emission reduction plan. Onsite monitor to verify compliance with exhaust emission reduction plan. | Exhaust emissions from Project construction are minimized to the extent feasible. | CPUC | Prior to and during construction |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|--|----------------|--------------------------------------|---|--------------------|---------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| | <p>construction workers are aware of the vehicle idling restriction by including explanation of this requirement in the Worker Training Program.</p> <ul style="list-style-type: none"> • Equipment will be properly tuned and maintained. • All material deliveries and waste haul trips to and from the Project site shall be scheduled to occur outside of peak "rush hour" traffic hours (7:00 to 10:00 a.m. and 4:00 to 7:00 p.m.) to the extent feasible | | | | | |
| | <p>APM AQ-1: Earth-moving</p> <ul style="list-style-type: none"> • Cease all active operations; OR • Apply water to soil not more than 15 minutes prior to moving such soil <p>(SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions).</p> | Entire Project | Onsite monitor to verify compliance. | Emissions from Project construction are minimized to the extent feasible. | CPUC and SCAQMD | During construction |
| | <p>APM AQ-2: Disturbed surface areas</p> <ul style="list-style-type: none"> • On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR • Apply chemical stabilizers prior to wind event; OR • Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR • Utilize any combination of control actions presented above such that, in total, these actions apply to all disturbed surface areas. <p>(SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions)</p> | | | | | |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|---|----------------|--------------------------------------|---|--------------------|---------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| | <p>APM AQ-3: Unpaved roads</p> <ul style="list-style-type: none"> • Apply chemical stabilizers prior to wind event; OR • Apply water twice per hour during active operation; OR • Stop all vehicular traffic. <p>(SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions)</p> | | | | | |
| | <p>APM AQ-4: Open storage piles</p> <ul style="list-style-type: none"> • Apply water twice per hour. • Install temporary coverings. <p>(SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions)</p> | Entire Project | Onsite monitor to verify compliance. | Emissions from Project construction are minimized to the extent feasible. | CPUC and SCAQMD | During construction |
| | <p>APM AQ-5: Paved road track-out</p> <ul style="list-style-type: none"> • Cover all haul vehicles; OR • Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads. <p>(SCAQMD Rule 403 Table 3, additional requirements for large operations when performance standards cannot be met through the use of Table 2 actions)</p> | | | | | |
| | <p>APM AQ-6: All categories</p> <p>Any other control measures approved by the SCAQMD Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 of SCAQMD Rule 403 may be used.</p> | | | | | |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|--|----------------|--------------------------------------|---|--------------------|---------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| | <p>APM AQ-7: Earth-moving (except construction cutting and filling areas, and mining operations)</p> <ul style="list-style-type: none"> • Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operation during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR • For any earth-moving, which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction. (SCAQMD Rule 403 Table 2) | | | | | |
| | <p>APM AQ-8: Earth-moving: Construction fill areas Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations. (SCAQMD Rule 403 Table 2).</p> | Entire Project | Onsite monitor to verify compliance. | Emissions from Project construction are minimized to the extent feasible. | CPUC and SCAQMD | During construction |
| | <p>APM AQ-9: Construction cut areas and mining operations Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors. (SCAQMD Rule 403 Table 2)</p> | | | | | |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|---|----------------|--------------------------------------|---|--------------------|---------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| | <p>APM AQ-10: Disturbed surface areas (except completed grading areas) Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area. (SCAQMD Rule 403 Table 2)</p> | | | | | |
| | <p>APM AQ-11: Disturbed surface areas: Completed grading areas Apply chemical stabilizers within five working days of grading completion.</p> | | | | | |
| | <p>APM AQ-12: Inactive disturbed surface areas</p> <ul style="list-style-type: none"> • Apply water to at least 80 [70] percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions. • Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface. • Establish a vegetative ground cover within 21 [30] days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter. <p>Utilize any combination of control actions presented above such that, in total, these actions apply to all inactive disturbed surface areas.</p> | Entire Project | Onsite monitor to verify compliance. | Emissions from Project construction are minimized to the extent feasible. | CPUC and SCAQMD | During construction |
| | <p>APM AQ-13: Unpaved Roads</p> <ul style="list-style-type: none"> • Water all roads used for any vehicular traffic at least once per every two hours of active operations (3 times per normal 8 hour work day). • Water all roads for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour. • Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface. | | | | | |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|--|----------------|--------------------------------------|---|--------------------|---------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| | <p>APM AQ-14: Open storage piles</p> <ul style="list-style-type: none"> • Apply chemical stabilizers. • Apply water to at least 80 [70] percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust. • Install temporary coverings. • Install a three-sided enclosure with walls with no more than 50 percent porosity, which extend, at a minimum, to the top of the pile. | | | | | |
| | <p>APM AQ-15: All Categories</p> <p>Any other control measures approved by the Executive Officer and the USEPA as equivalent to the methods specified in Rule 403 Table 2 may be used.</p> | Entire Project | Onsite monitor to verify compliance. | Emissions from Project construction are minimized to the extent feasible. | CPUC and SCAQMD | During construction |
| | <p>APM AQ-16: Track Control Options</p> <ul style="list-style-type: none"> • Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet. • Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device. • Any other control measures approved by the Executive Officer and the USEPA | | | | | |

| Table D.2-19. Mitigation Monitoring Program – Air Quality | | | | | | |
|---|---|----------------|---|-----------------------------------|--------------------|----------------------------|
| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
| AQ-3: Emissions Contribute to Climate Change (Class I) | <p>AQ-3 Avoid Sulfur Hexafluoride Emissions</p> <p>SCE shall identify sulfur hexafluoride (SF₆) leaks and establish a strategy for replacing leaking equipment to reduce SF₆ leaks. To accomplish this, SCE shall develop and maintain a record of SF₆ purchases, an SF₆ leak detection and repair program using laser imaging leak detection and monitoring no less frequently than quarterly, an SF₆ recycling program, and an employee education and training program for avoiding or eliminating SF₆ emissions caused by the Proposed Project. The SF₆ leak detection and repair program shall be provided to the CPUC 90 days prior to project operation. SCE shall also report SF₆ emissions from the Proposed Project to the California Climate Action Registry (CCAR) according to CCAR methodologies or alternate methodology approved by the California Air Resources Board. To develop a complete GHG inventory, SCE shall follow established methodologies to report indirect GHG emissions from energy imported and consumed to support operation of the Proposed Project and indirect GHG emissions from transmission and distribution losses associated with the Proposed Project.</p> | Entire Project | SCE shall report SF ₆ emissions from the Proposed Project to the California Climate Action Registry (CCAR) | Reduced SF ₆ emissions | SCE | Construction and Operation |