# 5.3 Air Quality

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the Sanger Substation Expansion Project (proposed project) proposed by Pacific Gas and Electric Company (PG&E, or the applicant) with respect to air quality.

## 5.3.1 Environmental Setting

### Air Basin

The proposed project would be located in the heart of the San Joaquin Valley, in unincorporated Fresno County, approximately 2 miles west of Sanger and 3 miles southeast of Fresno. Fresno County is part of the San Joaquin Valley Air Basin (SJVAB), which also includes Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, as well as the San Joaquin Valley portion of Kern County. The SJVAB stretches about 250 miles and comprises the southern half of California's Central Valley. It is bordered by the Sierra Nevada Mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000 to 7,981 feet in elevation). At its northern end is the Sacramento Valley, which makes up the northern half of California's Central Valley. The San Joaquin Valley's elevation slightly increases from sea level at the northwest end, where it opens to the San Francisco Bay at the Carquinez Straits, to 408 feet in elevation at Bakersfield, in the southeast end (SJVAPCD 2015a).

### Climate and Meteorology

The overall climate in the SJVAB is warm and semi-arid. The San Joaquin Valley is in a Mediterranean Climate Zone, which is characterized by sparse rainfall, which occurs mainly in the winter. There is only one wet season during the year, which is from October through April, during which time the SJVAB receives 90 percent of annual precipitation. Snow and thunderstorms are infrequent. Summers are hot and dry, with maximum temperatures often exceeding 100 degrees Fahrenheit. During the summer, wind usually originates at the north end of the valley and flows in a south-southeasterly direction through the valley and the Tehachapi Pass, into the Mojave Desert. During the winter months, the San Joaquin Valley experiences light and variable winds that are less than 10 miles per hour (SJVAPCD 2015a).

Air temperature in the lowest layer of the atmosphere typically decreases with altitude. However, meteorological factors can occasionally create conditions for the temperature to increase with altitude. The height at which the temperature stops decreasing with altitude and starts increasing is called inversion height, or "mixing height." Pollutants mix vertically up to the mixing height, above which vertical dispersion is inhibited. Therefore, a temperature inversion causes the air pollutants to be trapped below the inversion height, resulting in higher ambient pollutant concentrations. Wintertime inversion events in the valley can often last many weeks and can be very strong, with mixing heights of only a few hundred feet (SJVAPCD 2015a).

### Ambient Air Quality

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

pollutants, as well as for sulfate ($SO_4$), visibility reducing particles, hydrogen sulfide ($H_2S$), and vinyl chloride. California standards are generally stricter than national standards.

Attainment defines the status of a given airshed with regard to NAAQS or CAAQS requirements. Airsheds not meeting these standards are classified as "nonattainment." Table 5.3-1 summarizes the federal and state attainment status for the SJVAB, as of 2016, based on the NAAQS and CAAQS, respectively.

Table 5.3-1 Attainment Status for the San Joaquin Valley Air Pollution Control District

| Pollutant | Designation/Classification | |
|---|---|---|
| | Federal | State |
| Ozone | Nonattainment/Extreme(1),(2) | Nonattainment/Severe |
| $PM_{10}$ | Attainment(3) | Nonattainment |
| $PM_{2.5}$ | Nonattainment(4) | Nonattainment |
| Carbon monoxide (CO) | Unclassifiable/Attainment | Attainment/Unclassified |
| Nitrogen dioxide ($NO_2$) | Unclassifiable/Attainment | Attainment |
| Sulfur dioxide ($SO_2$) | Attainment/Unclassified | Attainment |
| Lead (Pb) | Unclassifiable/Attainment | Attainment |
| Hydrogen sulfide ($H_2S$) | No Federal Standard | Unclassified |
| Sulfates ($SO_4$) | No Federal Standard | Attainment |
| Visibility reducing particulate | No Federal Standard | Unclassified |
| Vinyl chloride | No Federal Standard | Attainment |

Source: SJVAPCD 2016

Notes:

(1) Even though the EPA revoked the federal 1-hour ozone standard, including associated designations and classifications, in 2005, the EPA had previously classified the SJVAB as in extreme nonattainment for this standard. The EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010. Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

(2) Though the San Joaquin Valley was initially classified as being in serious nonattainment for the 1997 8-hour ozone standard, the EPA approved the reclassification to extreme nonattainment in the Federal Register on May 5, 2010.

(3) On September 25, 2008, The EPA redesignated the San Joaquin Valley to attainment for the $PM_{10}$ standard and approved the $PM_{10}$ Maintenance Plan.

(4) The San Joaquin Valley is designated nonattainment for the 1997 $PM_{2.5}$ standard. The EPA designated the San Joaquin Valley as being in nonattainment for the 2006 $PM_{2.5}$ standard on November 13, 2009.

Key:

EPA United States Environmental Protection Agency
$PM_{10}$ particulate matter less than 10 microns in diameter
$PM_{2.5}$ particulate matter less than 2.5 microns in diameter
SJVAB San Joaquin Valley Air Basin

The San Joaquin Valley Air Pollution Control District (SJVAPCD), CARB, National Park Service, and Santa Rosa Rancheria in Lemoore operate an extensive network of air monitoring stations in the SJVAB. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. The network in the SJVAB consists of 36 monitoring stations, nine of which are located in Fresno County (SJVAPCD 2015c). Table 5.3-2 presents the average ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the monitoring stations in Fresno County and in the SJVAB from 2012 through 2015, the most recent years for which data are available.

Table 5.3-2 Ambient Air Quality in Fresno County and San Joaquin Valley Air Basin – California Ambient Air Quality Standards

| Pollutant | Area | 2012 | 2013 | 2014 | 2015 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|
| Ozone | | #Days > State 1-Hour Std | | | | Max 1-Hour Observation | | | |
| | Fresno County | 17 | 10 | 13 | 12 | 0.112 | 0.108 | 0.111 | 0.115 |
| | San Joaquin Valley Air Basin | 72 | 41 | 48 | 47 | 0.135 | 0.123 | 0.128 | 0.135 |
| Ozone | | #Days > State 8-Hour Std | | | | Max State 8-Hour Average | | | |
| | Fresno County | 56 | 49 | 52 | 43 | 0.095 | 0.095 | 0.096 | 0.097 |
| | San Joaquin Valley Air Basin | 134 | 112 | 128 | 99 | 0.116 | 0.106 | 0.105 | 0.110 |
| $PM_{2.5}$ | | #Days > National 24-Hour Std | | | | Max State 24-Hour Average | | | |
| | Fresno County | 19.1 | 28.6 | 33.9 | 14.8 | 64.9 | 86.8 | 69.6 | 65.6 |
| | San Joaquin Valley Air Basin | 29.4 | 50.4 | 41.8 | 38 | 93.4 | 167.3 | 107.2 | 111.9 |
| $PM_{10}$ | | #Days > State 24-Hour Std | | | | Max State 24-Hour Average | | | |
| | Fresno County | 55.8 | 122.3 | 108.9 | 80.3 | 87.9 | 133.7 | 106.3 | 77.5 |
| | San Joaquin Valley Air Basin | 89.4 | 122.3 | 138.8 | 121.4 | 125.8 | 183.6 | 419.5 | 104.4 |

Source: CARB 2015a

Key:
Est estimated
$PM_{10}$ particulate matter less than 10 microns in diameter
$PM_{2.5}$ particulate matter less than 2.5 microns in diameter

## Toxic Air Contaminants

Air pollutants that have been identified as posing the most substantial health risk in California are called toxic air contaminants (TACs) under California law (Health and Safety Code §§ 39650 et seq.). The substances that have been determined by the State Board to be toxic air contaminants are identified in the California Code of Regulation, Title 17, Section 90000. TACs include asbestos, chemical compounds, and certain metals. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system, and respiratory disorders. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals.

## Sensitive Receptors

Sensitive receptors are areas occupied by individuals or other organisms that are more susceptible to the adverse effects of exposure to air pollutants. The most common sensitive receptors are residences, apartments, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. These areas may have an increased sensitivity to contaminants because of the age and health of their occupants or because of their proximity and increased exposure to the contamination source. The Air Quality and Land Use Handbook (CARB 2005) indicates several source categories that have the potential to cause long-term public health risk impacts. The proposed project does not fall within any of the categories listed by the 2005 handbook. However, the 2005 handbook recommends that sensitive receptors should be located farther than 1,000 feet of a Distribution Center, where trucks, trailers, shipping containers, and other equipment with diesel engines produce diesel particulate matter emissions. Since most of the emissions from the proposed project are represented by exhaust gases and fugitive particulate matter generated by mobile sources, the sensitive receptors located within 1,000 feet of the proposed project were considered in order to assess the impacts.

The only sensitive receptors within 1,000 feet of the proposed project area are eight residences, located at distances ranging from 84 feet to 802 feet from the proposed project site, as summarized in Table 5.12-2. There are no schools, hospitals, or other sensitive land uses within 1,000 feet of the proposed project area.

## 5.3.2 Regulatory Setting

### Federal

#### *Clean Air Act*

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

Title I of the CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a state implementation plan (SIP) to the EPA for areas in nonattainment with NAAQS. The SIP, which is reviewed and approved by the EPA, must demonstrate how state and local regulatory agencies will institute rules, regulations, and/or other programs to achieve attainment with NAAQS. NAAQS are presented in Table 5.3-3.

Table 5.3-3 National and California Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards(1), (2) | National Standards(3), (2) | |
|---|---|---|---|---|
| | | | Primary(4) | Secondary(5) |
| Ozone ($O_3$) | 1-Hour | 0.09 ppm (180 µg/m$^3$) | ---(6) | --- |
| | 8-Hour | 0.07 ppm (137 µg/m$^3$) | 0.07 ppm (137 µg/m$^3$) | 0.07 ppm (137 µg/m$^3$) |
| Carbon monoxide (CO) | 1-Hour | 20 ppm (23 mg/m$^3$) | 35 ppm (40 mg/m$^3$) | --- |
| | 8-Hour | 9.0 ppm (10 mg/m$^3$) | 9 ppm (10 mg/m$^3$) | --- |
| Nitrogen dioxide ($NO_2$) | 1-Hour | 0.18 ppm (339 µg/m$^3$) | 0.1 ppm (188 µg/m$^3$) | --- |
| | 1-Year | 0.03 ppm (57 µg/m$^3$) | 0.053 ppm (100 µg/m$^3$) | 0.053 ppm (100 µg/m$^3$) |
| Sulfur dioxide ($SO_2$)(7) | 1-Hour | 0.25 ppm (655 µg/m$^3$) | 0.075 ppm (196 µg/m$^3$) | --- |
| | 3-Hour | --- | --- | 0.5 ppm (1,300 µg/m$^3$) |
| | 24-Hour | 0.04 ppm (105 µg/m$^3$) | --- | --- |
| Respirable Particulate Matter ($PM_{10}$)(8) | 24-Hour | 50 µg/m$^3$ | 150 µg/m$^3$ | 150 µg/m$^3$ |
| | 1-Year | 20 µg/m$^3$ | --- | --- |
| Fine Particulate Matter ($PM_{2.5}$)(8) | 24-Hour | --- | 35 µg/m$^3$ | 35 µg/m$^3$ |
| | 1-Year | 12 µg/m$^3$ | 12.0 µg/m$^3$ | 15 µg/m$^3$ |
| Lead (Pb) | 30-Day | 1.5 µg/m$^3$ | --- | --- |
| | Rolling 3-Month | --- | 0.15 µg/m$^3$ | 0.15 µg/m$^3$ |

Table 5.3-3 National and California Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards[1], [2] | National Standards[3], [2] | |
|---|---|---|---|---|
| | | | Primary[4] | Secondary[5] |
| Hydrogen sulfide ($H_2S$) | 1-Hour | 0.03 ppm (42 µg/m$^3$) | No Federal Standards | |
| Sulfates ($SO_4$) | 24-Hour | 25 µg/m$^3$ | | |
| Visibility reducing particles | 8-Hour | See Note 9 | | |
| Vinyl chloride[10] | 24-Hour | 0.01 ppm (26 µg/m$^3$) | | |

Source: CARB 2015b

Notes:

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

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

[3] NAAQS (other than ozone, particulate matter, and standards based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is not to be exceeded more than once per year on average over 3 years. The 24-hour standard is attained when the 3-year average of the weighted annual mean at each monitor within an area does not exceed 150 µg/m$^3$. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, do not exceed 35 µg/m$^3$. The annual standard is attained when the 3-year average of the weighted annual mean at single or multiple community-oriented monitors does not exceed 12 µg/m$^3$.

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

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

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

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

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

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

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

Key:

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

Title II of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks, standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.

### *National Emission Standard for Hazardous Air Pollutants*

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

emissions are controlled through separate standards under CAA Section 112: National Emission Standards for Hazardous Air Pollutants (NESHAP). These standards are specifically designed to reduce the potency, persistence, or potential bioaccumulation of HAPs. Asbestos is a HAP regulated under the EPA NESHAP. The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. Air toxics regulations under the CAA specify work practices for asbestos to be followed during operations of demolitions and renovations. The regulations require a thorough inspection of the area where the demolition or renovation operations will occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing, wetting, and sealing in leak-tight containers all asbestos-containing materials (ACM) and disposing of the waste as expediently as practicable.

## State

### *California Clean Air Act*

The California Clean Air Act outlines a statewide air pollution control program in California. CARB is the primary administrator of the California Clean Air Act, while local air quality districts administer air rules and regulations at the regional level. CARB is responsible for establishing the CAAQS, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and preparing the SIP. The CAAQS apply to the same criteria pollutants as the federal CAA and also include $SO_4$, visibility reducing particulates, $H_2S$, and vinyl chloride. They are generally more stringent than the federal standards. The CAAQS are presented in Table 5.3-3.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. Assembly Bill 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely emit.

## ~~Local~~ Regional

### *San Joaquin Valley Air Pollution Control District*

The SJVAPCD implements air quality programs required by state and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their roles in protecting air quality. The SJVAPCD is responsible for managing and permitting existing, new, and modified sources of air emissions within its boundaries, and has established rules and regulations that would apply to the proposed project to ensure compliance with local, state, and federal air quality regulations.

**CEQA Guidance**. The SJVAPCD developed the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a) as an advisory document to provide lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The SJVAPCD also developed the Guide for Assessing and Mitigating Air Quality Impacts: Technical Document – Information for Preparing Air Quality Sections in EIRs (SJVAPCD 2002) as a companion document to the Guide for Assessing and Mitigating Air Quality Impacts.

**Asbestos Program.** Asbestos is a TAC (as defined by Title 17, California Code of Regulation, § 93000. Substances Identified As Toxic Air Contaminants). The SJVAPCD regulates ACM for demolition and renovations of regulated facilities. An Asbestos Notification form is required for any regulated demolition, whether or not asbestos is present, and for certain regulated renovations. A Demolition Permit Release form is required for all demolitions, including for facilities exempt from NESHAP.

**Regulation VIII (Fugitive $PM_{10}$ Prohibition).** Regulation VIII contains rules developed pursuant to EPA guidance for serious $PM_{10}$ nonattainment areas. Rules included under this regulation aim to reduce ambient concentration of $PM_{10}$ by preventing, reducing, or mitigating fugitive dust emissions from construction sites during excavation, demolition, and other earthmoving activities; bulk material handling, storage, and transport; carryout and track-out; and driving in paved and unpaved vehicle and equipment traffic areas.

**Extreme 1-hour Ozone Attainment Demonstration Plan.** The Extreme Ozone Attainment Demonstration Plan was adopted by the SJVAPCD in 2004 and approved by the EPA in 2010. In 2012, the EPA withdrew its 2010 approval of the SJVAPCD's 2004 plan and required submittal of a new plan for the revoked 1-hour standard, which was adopted by SJVAPCD in 2013.

**Eight-Hour Ozone Plan.** The Eight-hour Ozone Plan was adopted by the SJVAPCD in 2007 and was approved by the EPA in 2012. This plan projects that the San Joaquin Valley will achieve the 8-hour ozone standard for all areas of the SJVAB no later than 2023.

**$PM_{10}$ Maintenance Plan.** The $PM_{10}$ Maintenance Plan and Request for Redesignation was adopted in 2007, following the EPA's finding that the SJVAB had attained the federal $PM_{10}$ standards. The plan was approved by the EPA and in 2008 the SJVAB was re-designated to attainment for $PM_{10}$ NAAQS.

**$PM_{2.5}$ Attainment Plans.** The San Joaquin Valley is designated as in nonattainment for federal $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Attainment Plan was adopted by the SJVAPCD to set out the strategy to attain the federal 1997 Annual $PM_{2.5}$ standard by 2015. Most of its provisions were approved by the EPA in 2012. The SJVAPCD 2012 $PM_{2.5}$ Attainment Plan is designed to achieve the federal 2006 24-hour $PM_{2.5}$ NAAQS by 2019. CARB approved this plan in 2013.

## 5.3.3 Environmental Impacts and Assessment

### Applicant Proposed Measures

The applicant has incorporated the following applicant proposed measure (APM) into the proposed project to specifically minimize or avoid impacts on air quality. In addition, the applicant proposes implementation of APM GHG-1 to reduce emissions of criteria air pollutants and greenhouse gases. APM AIR-1 and APM GHG-1 would be implemented by PG&E as part of the proposed project. A list of all project APMs is included in Table 4-5.

> **APM AIR-1: Fugitive Dust Emissions Minimization.** Pursuant to SJVAPCD Regulation VIII, a Dust Control Plan would be prepared and submitted to the SJVAPCD for approval within the required timeframe prior to commencing construction activities. Based on the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a), the following are examples of fugitive dust control measures that may be included in the Dust Control Plan to minimize dust emissions:
>
> 1. Apply water to unpaved surfaces and areas.
> 2. Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas.
> 3. Limit or reduce vehicle speed on unpaved roads and traffic areas.
> 4. Maintain areas in a stabilized condition by restricting vehicle access.
> 5. Install wind barriers.
> 6. During high winds, cease outdoor activities that disturb the soil.

7. Keep bulk materials sufficiently wet when handling.
8. Store and handle loose materials that could create dust in a three-sided structure.
9. When storing bulk materials, apply water to the surface or cover the storage pile with a tarp.
10. Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials.
11. Cover haul trucks with a tarp or other suitable cover; or, wet the top of the load enough to limit visible dust emissions.
12. Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site.
13. Prevent trackout by installing a trackout control device.
14. Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately.
15. Monitor dust-generating activities and implement appropriate measures for maximum dust control.

## Impacts on Air Quality

Table 5.3-4 includes the significance criteria from Appendix G of the CEQA Guidelines' air quality section to evaluate the environmental impacts of the proposed project.

Table 5.3-4 Air Quality Checklist

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporation | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☒ | ☐ |
| c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☒ | ☐ |
| d. Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| e. Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

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

The SJVAPCD has adopted several attainment plans that outline the long-term strategies designed to achieve compliance with the NAAQS and CAAQS. The plans and the goals applicable to the proposed project are presented in Section 5.3-2 and include: the Extreme 1-hour Ozone Attainment Demonstration Plan (adopted 2013), the Eight-Hour Ozone Plan (adopted 2007), the $PM_{10}$ Maintenance Plan (approved in 2008); and the $PM_{2.5}$ Attainment Plans (approved in 2013). The applicable plans are largely based on emission reductions, to be achieved through implementation of offset requirements. The thresholds of

significance for criteria pollutants were developed based on District Rule 2201 (New Source Review) offset requirements for stationary sources; emission levels below the thresholds of significance ensure that the offset requirements are fulfilled. The SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (2015a, par. 7.12, page 65) establishes that "[e]mission reductions achieved through implementation of District offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to 'Not conflict or obstruct implementation of the District's air quality plan.'" Therefore, the thresholds of significance for air quality described in the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a) were used to assess the significance of air quality impacts anticipated from the proposed project.

## Construction

*LESS THAN SIGNIFICANT IMPACT*

Emissions of criteria pollutants would result from vehicle and equipment exhaust, as well as fugitive dust from travel, earthmoving, and site grading during construction of the proposed project. The installation of two dishes on the existing tower at the Fence Meadow Repeater Station would result in negligible emissions from vehicle travel (up to two trucks and one crane round trip per day). Some travel would occur on unpaved roads, resulting in negligible fugitive dust, but there would be no ground-disturbing activities that would generate fugitive dust. Construction emissions estimates before mitigation, namely without implementation of APM AIR-1, along with the thresholds of significance for criteria pollutants emitted during construction, are provided in Table 5.3-5. Detailed calculations are provided in Appendix C.

Table 5.3-5 Estimated Unmitigated Criteria Pollutant Emissions during Construction

| Criteria Emissions | Daily Maximum lbs/day | Total | | |
|---|---|---|---|---|
| | | Project Total Tons[1] | Applicable Construction Threshold[2] Tons/Year | Threshold Exceeded? |
| Volatile Organic Compounds (VOCs) | 9.5 | 0.7 | 10 | No |
| Carbon Monoxide (CO) | 75.7 | 5.6 | 100 | No |
| Oxides of Nitrogen ($NO_X$ as $NO_2$) | 96.3 | 6.4 | 10 | No |
| Sulfur Dioxide ($SO_X$ as $SO_2$) | 0.1 | <0.1 | 27 | No |
| Particulates ($PM_{10}$) | 6.9 | 0.6 | 15 | No |
| Particulates ($PM_{2.5}$) | 5.2 | 0.4 | 15 | No |

Notes:

[1] Emissions are for the entire 24 to 30 months of proposed project construction. Using this figure makes the analysis conservative since the significance threshold is a yearly threshold.

[2] SJVAPCD 2015a

Key:

lbs pounds
$NO_2$ nitrogen dioxide
$PM_{10}$ particulate matter less than 10 microns in diameter
$PM_{2.5}$ particulate matter less than 2.5 microns in diameter
$SO_X$ oxides of sulfur

The project construction emissions reported in Table 5.3-5 are all below the thresholds of significance and, therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan.

APM AIR-1 would require preparation and implementation of a Dust Control Plan. Implementation of APM AIR-1 would further reduce fugitive dust emissions from construction activities. The emission reduction efficiency of the control measures included in the dust control plan range from about 10 percent for covering all trucks hauling, dirt, sand, soil or other loose materials, up to 70 percent and above for stabilizing and watering unpaved areas and enforcing the traffic speed limits (SCAQMD 2006). Impacts would remain less than significant.

SJVAPCD Regulation VIII contains rules developed pursuant to EPA guidance for serious $PM_{10}$ nonattainment areas, such as the project area. Regulation VIII requires that, when the areas disturbed by construction activities are larger than 1 acre, a dust control plan must be prepared. Since the total amount of area disturbed during construction of the proposed project would be approximately 18 acres, the proposed project would require a dust control plan to identify the fugitive dust sources and the dust control measures to be implemented before, during, and after any dust generating activity for the duration of the project.

### Operation and Maintenance

*NO IMPACT*

In general, operation of a project could obstruct implementation of an applicable air quality plan if it resulted in population or employment growth beyond what is allowed for in the plan, neither of which would occur as a result of the proposed project. The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. The expanded substation would be unstaffed, would require no new permanent employees, and would not cause an increase in population. The proposed project would provide added capacity as required to meet the projected growth of the area but would not directly or indirectly induce growth.

Operation and maintenance emissions would be about the same as current emissions and, therefore, there would be no impacts associated with the proposed project. Emissions from operations and maintenance activities are expected to be below those estimated for construction activities; therefore, emissions would not exceed the SJVAPCD thresholds set forth in Table 5.3-5.

The proposed project therefore would not conflict with or obstruct implementation of any of the SJVAPCD's air quality plans. There would be no impact.

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

### Construction

*LESS THAN SIGNIFICANT IMPACT*

The thresholds of significance for air quality described in the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a) were used to assess whether emissions from the project construction would violate any air quality standard or contribute substantially to an existing or projected air quality violation. These thresholds are the same as utilized for criterion (a) (and set forth in Table 5.3-5). As described under criterion (a), emissions of criteria pollutants would not contribute to an ongoing violation or cause a violation of the NAAQS or CAAQS because emissions would not exceed the air quality thresholds and impacts would be less than significant.

### Operation and Maintenance

*NO IMPACT*

The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. The expanded substation would be unstaffed, as it is currently. There would be no impacts to air quality during operation and maintenance because there would be no change in emissions over emissions associated with current operation and maintenance activities.

***c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?***

### Construction

*LESS THAN SIGNIFICANT IMPACT*

The proposed project area is in nonattainment of NAAQS for $O_3$ and $PM_{2.5}$, and nonattainment of CAAQS for $O_3$, $PM_{10}$, and $PM_{2.5}$. As discussed for significance criterion (b), impacts would be less than significant for $O_3$ and $PM_{2.5}$, and for $PM_{10}$ even before implementation of APM AIR-1, which would further reduce the proposed project's fugitive dust emissions. Construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment.

### Operation and Maintenance

*NO IMPACT*

The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. The expanded substation would be unstaffed, as it is currently. Operation and maintenance emissions would be about the same as current emissions. There would be no impact.

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

### Construction

*LESS THAN SIGNIFICANT IMPACT*

Sensitive receptors within 1,000 feet of the proposed project area are limited to residences located at distances ranging from 84 feet to 802 feet from the proposed project site, as summarized in Table 5.12-2.

The SJVAPCD significance thresholds for TACs, including carcinogens and non-carcinogens, are (SJVAPCD undated):

- Carcinogens: Maximally Exposed Individual risk equals or exceeds 10 in one million.
- Non-Carcinogens - Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.
- Non-Carcinogens - Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.

The significance thresholds are based on the relationship between exposure to a substance (dose) and occurrence of injury (response). For carcinogens, dose-response assessment is based on the risk of developing cancer per unit of average daily dose over a 70-year lifetime. For non-carcinogens, dose-response information is used to determine Reference Exposure Levels (REL). The non-carcinogen acute RELs are estimated assuming infrequent 1-hour exposures. The non-carcinogen chronic RELs are estimated assuming 24-hour per day exposures for at least a significant fraction of a lifetime, defined as about 8 years (OEHHA 2015a).

During construction of the proposed project, sensitive receptors near the construction sites would be exposed to particulate emissions from diesel-fueled engines and to asbestos, which are identified as TACs. Construction would be temporary, which would reduce the exposure to TACs caused by the proposed project. Because of the relatively short timeframe of construction activities (about 24 to 30 months) compared to the reference exposure times for cancer risk and chronic effects, the increased cancer risk and the non-cancer chronic hazard index from exposure to construction activities would be below the SJVAPCD significance thresholds.

OEHHA (2015b) recommends evaluation of non-cancer acute health effects from exposure to diesel exhausts only for "certain unusual situations," such as a receptor located above the emission release point (e.g., on a hillside or in a multistory apartment building). The recommendations in OEHHA (2015b) are provided as guidance for the Air Toxic Hot Spots Program, which regulates toxic air emissions from stationary sources. The proposed project would not cause continuous direct exposure of receptors to the exhausts emitted by a stationary source (and related health effects) because it would only include mobile sources and construction equipment, which have much lower emission levels compared to stationary sources. Therefore, non-cancer acute hazard index from exposure to diesel exhausts would also be below the SJVAPCD significance threshold.

Asbestos could be found during demolition of transmission poles and towers if it is contained in the infrastructure. Removal or relocation of utility lines requires notification to the SJVAPCD, an asbestos survey conducted by a Certified Asbestos Inspector, and applicable removal and disposal requirements of identified ACM (NESHAP 40 Code of Federal Regulations 61, Subpart M). Compliance with applicable regulations would ensure that asbestos air quality impacts would be less than significant.

The proposed project would not expose sensitive receptors to substantial pollutant concentrations during construction. Impacts would be less than significant.

### Operation and Maintenance

*NO IMPACT*

The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. The expanded substation would be unstaffed, as it is currently. Operation and maintenance emissions would be about the same as current emissions. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during operation and maintenance. There would be no impact.

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

## Construction

*LESS THAN SIGNIFICANT IMPACT*

During construction, potential sources of odors would be represented by diesel exhausts and hydrocarbon emissions from equipment use.

According to a study conducted by Colucci and Barnes (1970), perception of diesel exhaust emission averaged about 29 feet for an idling bus and about 36 feet for an accelerating bus. Engines in buses are comparable to engines in heavy equipment, suggesting a similar perception related to diesel exhaust from project equipment. Odors from newer equipment are likely to travel an even lower distance due to improvement in technologies since the time of this study.

As shown in Table 5.12-2, the closest sensitive receptor to a staging area would be located at a distance of about 84 feet. All other sensitive receptors would be more than 84 feet from the project components. Therefore, objectionable odors from construction activities are not expected to affect a substantial number of people and would not result in a significant impact. Impacts would be less than significant.

## Operation and Maintenance

*NO IMPACT*

The vehicle trips and maintenance activities for the proposed project would be comparable to the current level of vehicle trips and maintenance activities. The expanded substation would be unstaffed, as it is currently. There are currently no odors associated with operation and maintenance; odors from operation and maintenance activities would be the same as baseline. There would be no impact.

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