

CHAPTER 4

Environmental Impacts and Mitigation Measures

4.1 Air Quality

This section analyzes the impacts of the Santa Barbara County Last-Mile Broadband Program (“Broadband Program” or “Project”) on local and regional air quality. Both temporary impacts relating to construction activities and long-term impacts associated with population and employment growth and associated growth in vehicle traffic and energy consumption are discussed. Greenhouse gas emissions are analyzed in Section 4.5, *Greenhouse Gas Emissions/Climate Change*. This section describes the physical environmental and regulatory setting, the criteria and thresholds used to evaluate the significance of impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

4.1.1 Environmental Setting

Existing Conditions

Climate and Meteorology

The Project Site encompasses Santa Barbara County, both incorporated and unincorporated, which is located within the South Central Coast Air Basin (SCCAB). The SCCAB includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The Santa Barbara County (“County”) portion of the SCCAB is under the jurisdiction of the Santa Barbara County Air Pollution Control District (SBCAPCD). Climate of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the high-pressure cell in the northeastern Pacific. With a Mediterranean-type climate, the Project Site is characterized by warm, dry summers and cool winters with occasional rainy periods.

Cool, humid marine air causes frequent fog and low clouds along the coast, generally during the night and morning hours in the late spring and early summer months. The County is subject to a diurnal cycle in which daily onshore winds from the west and northwest are replaced by mild offshore breezes flowing from warm inland valleys during night and early morning hours. This alternating cycle can create a situation where suspended pollutants are swept offshore at night, and then carried back onshore the following day. Dispersion of pollutants is further degraded when the wind velocity for both day and nighttime breezes is low. The region is also subject to seasonal “Santa Ana” winds. These are typically hot, dry northerly winds which blow offshore at 15 to 20 miles per hour (mph), but can reach speeds in excess of 60 mph.

Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion is a regional effect created by the Pacific high in which air is heated as it is compressed when it flows from the high-pressure area to the low pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet and can occur throughout the year, but it is

most evident during the summer months. Radiational, or surface, inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. This type of inversion is typically lower (0 to 500 feet at Vandenberg Space Force Base, for example) and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed, the more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion. **Table 4.1-1**, *Santa Barbara County Climate Conditions*, shows the average climate within the Santa Barbara County Association of Governments (SBCAG) region.

TABLE 4.1-1
SANTA BARBARA COUNTY CLIMATE CONDITIONS

| Temperature Condition | Amount |
|------------------------------------|------------------|
| Average annual rainfall | 18 inches |
| Average annual maximum temperature | 71°F |
| Average annual minimum temperature | 50°F |
| Warmest month | August |
| Coolest month | January |
| Average annual mean temperature | 61°F |
| Average wind speed | 7 miles per hour |
| Predominant wind direction | North |

°F = degrees Fahrenheit

Note: Averages are based on the period of record from January 1893 to June 2016 with the exception of average annual mean temperature. Wind Speed and direction data averages are based on the period on record from January 1980 to December 2016.

Source: Santa Barbara County Association of Governments (SBCAG), Connected 2050: Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS)

Current Air Quality

Monitoring of ambient air pollutant concentrations is conducted by the California Air Resources Board (CARB), SBCAPCD, and industry. Monitors operated by CARB and SBCAPCD are part of the State and Local Air Monitoring System (SLAMS). The SLAMS stations are located to provide local and regional air quality information. Monitors operated by industry, at the direction of the SBCAPCD, are called Prevention of Significant Deterioration (PSD) stations. PSD stations are required by the SBCAPCD to ensure that new and modified sources under SBCAPCD permit do not interfere with the County's ability to attain or maintain air quality standards. **Figure 4.1-1**, *Santa Barbara County Air Quality Monitoring Stations (2022)*, shows the locations of all monitoring stations in Santa Barbara County that were in operation in 2022.

The SBCAPCD is required to monitor air pollutant levels to assure that the air quality standards are met and, if they are not, to develop strategies to meet these standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "nonattainment." Countywide historical data on the number of State 8-hour and State 1-hour ozone exceedances between 2001 and 2022 is provided in **Figure 4.1-2**, *Historical Santa Barbara County Ozone Exceedances (2001-2022)*, which shows fewer exceedances occurring over time. Countywide historical data on the number of State and Federal Particulate Matter (PM) exceedances between 2006 and 2022 is provided in **Figure 4.1-3**, *Historical Santa Barbara County Particulate Matter (PM) Exceedances (2022)*, which shows that PM

levels vary year-to-year, and the number of days that the County exceed the air quality standards is influenced by natural events such as wildfires and droughts.

Santa Barbara County's air quality improved dramatically over the years as evidenced by the declining number of state 1-hour and 8-hour ozone exceedances. An exceedance is a measured concentration at a monitoring station that surpasses the standard. As displayed in Figure 4.1-2, 1-hour ozone exceedances have decreased from a high of 7 days in 2003 to zero days in 2018 and 2022. The number of 8-hour ozone exceedance days ranged from a high of 42 days in 2003 to zero days in 2018 and 2022. This represents a significant milestone as 2018 was the first year in which the County did not exceed the 8-hour ozone standard. These improvements in air quality have occurred despite an approximately 11-percent increase in countywide population since 2001. As displayed in Figure 4.1-3, the PM data was higher in the years that wildfires and droughts occurred.

Air Quality Attainment Plan

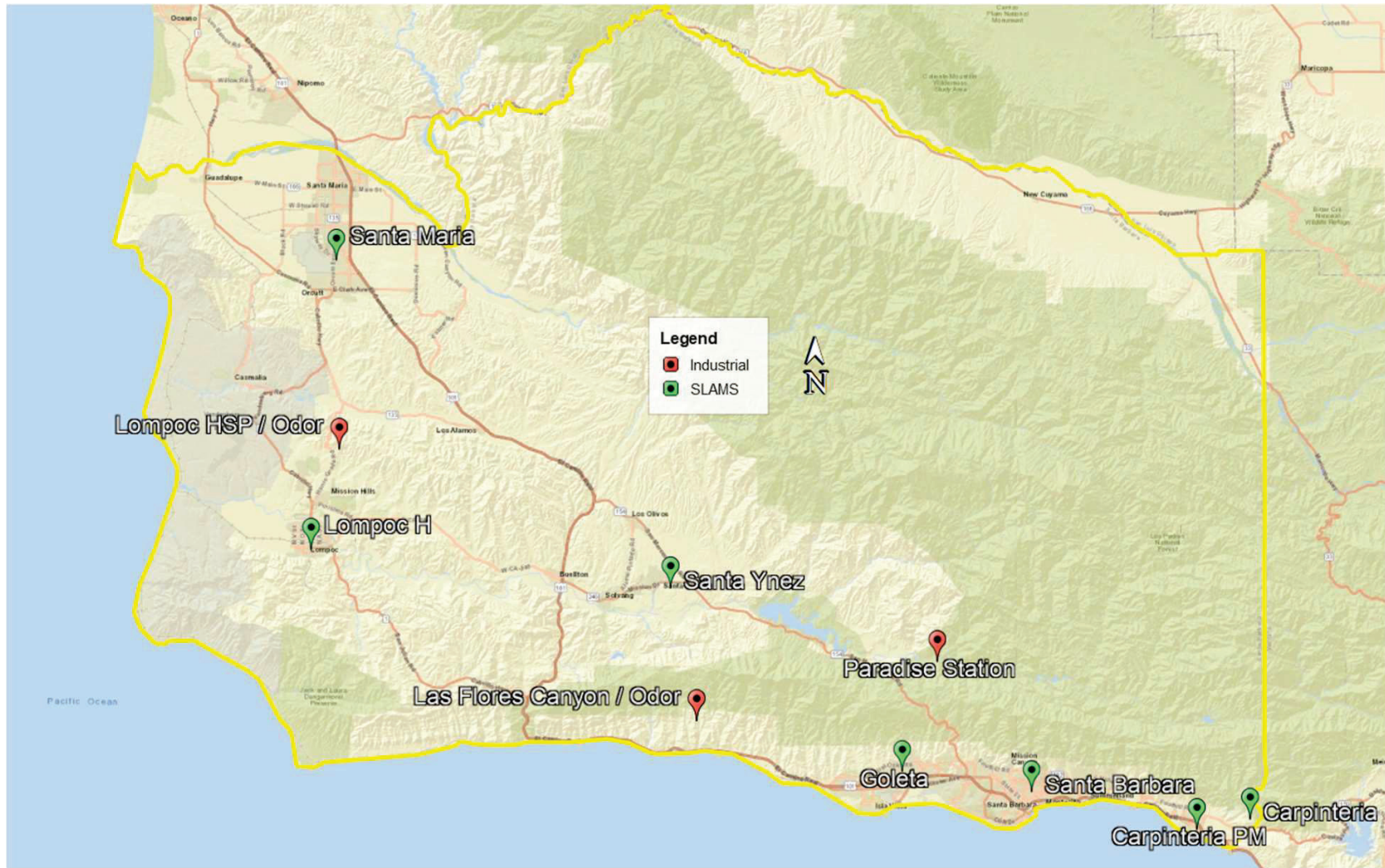
The Federal Clean Air Act (FCAA) Amendments of 1990 set a schedule for the attainment of the National Ambient Air Quality Standards (NAAQS). States are required to prepare a State Implementation Plan (SIP) to develop strategies to bring about attainment of the standards. In addition, the California Clean Air Act (CCAA) of 1988 requires areas that exceed the California Ambient Air Quality Standards (CAAQS) to plan for the eventual attainment of the State standards. Under both the 1990 Amendments to the FCAA and the 1988 CCAA, the level of Santa Barbara County's ozone originally resulted in the county being classified as a "moderate" non-attainment area. As discussed below, the County has had air quality attainment plans to reduce ozone since 1991. The County recently enacted a plan for exceptional events for PM₁₀. In summary, the County is currently classified as nonattainment-transitional¹ for the 1-hour and 8-hour ozone CAAQS and nonattainment for the PM₁₀ CAAQS (SBCAPCD 2024a). The County is in attainment for the other CAAQS and all NAAQS (SBCAPCD 2024a).

2022 Ozone Plan

The 2022 Ozone Plan (2022 Plan) is the tenth triennial update to the initial state Air Quality Attainment Plan adopted by the Santa Barbara County Air Pollution Control District Board of Directors in 1991 (other updates were done in 1994, 1998, 2001, 2004, 2007, 2010, 2013, 2019, and 2019). Each of the plan updates have implemented an "every feasible measure" strategy to ensure continued progress toward attainment of the state ozone standards. Since 1992, Santa Barbara County has adopted or amended more than 30 control measures aimed at reducing emissions from stationary sources of air pollution (SBCAPCD 2022a). These measures have substantially reduced ozone precursor pollutants, which includes nitrogen oxides (NO_x) and reactive organic compounds (ROCs). In the past, the SBCAPCD has prepared air quality attainment plans that have addressed both the state and federal ozone standards. The 2022 Plan only addresses the state ozone standards because Santa Barbara County is designated attainment for the 8-hour ozone NAAQS of 0.070 parts per million (ppm), which was promulgated by the U.S. Environmental Protection Agency (USEPA) in December 2015. The federal attainment designation for Santa Barbara County was finalized in April 2018.

¹ The nonattainment transitional category is a subcategory of nonattainment. For ozone, the nonattainment-transitional requirements are specified in Health and Safety Code section 40925.5, which states that a nonattainment district (or entire portion of a district within an air basin) is designated as nonattainment-transitional for ozone if air quality data show three or fewer exceedances of the State standard at each site in the area during the most recent calendar year.

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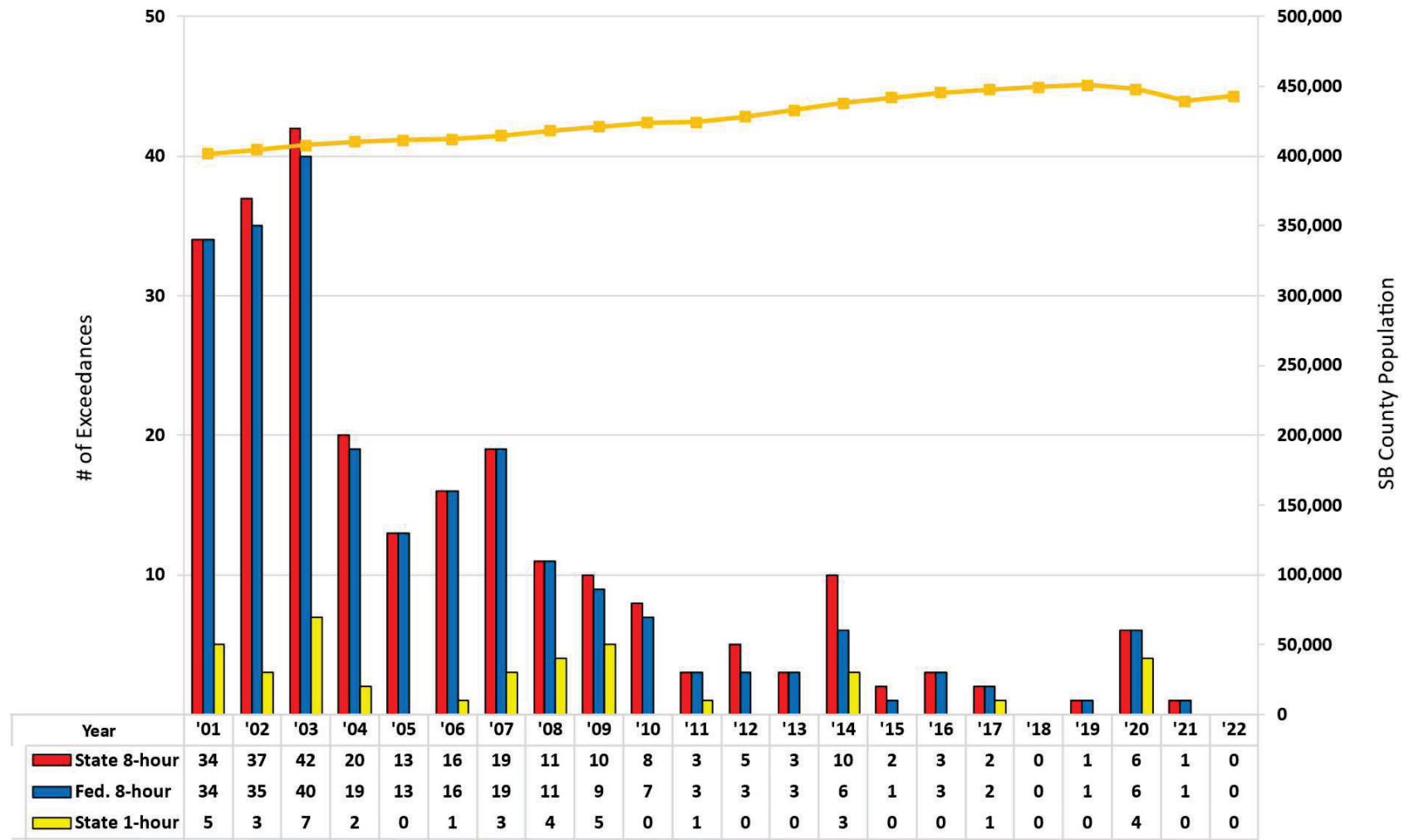


SOURCE: Santa Barbara County Air Pollution Control District, 2022

Santa Barbara County Last-Mile Broadband Program

Figure 4.1-1
Santa Barbara County Air Quality Monitoring Stations (2022)



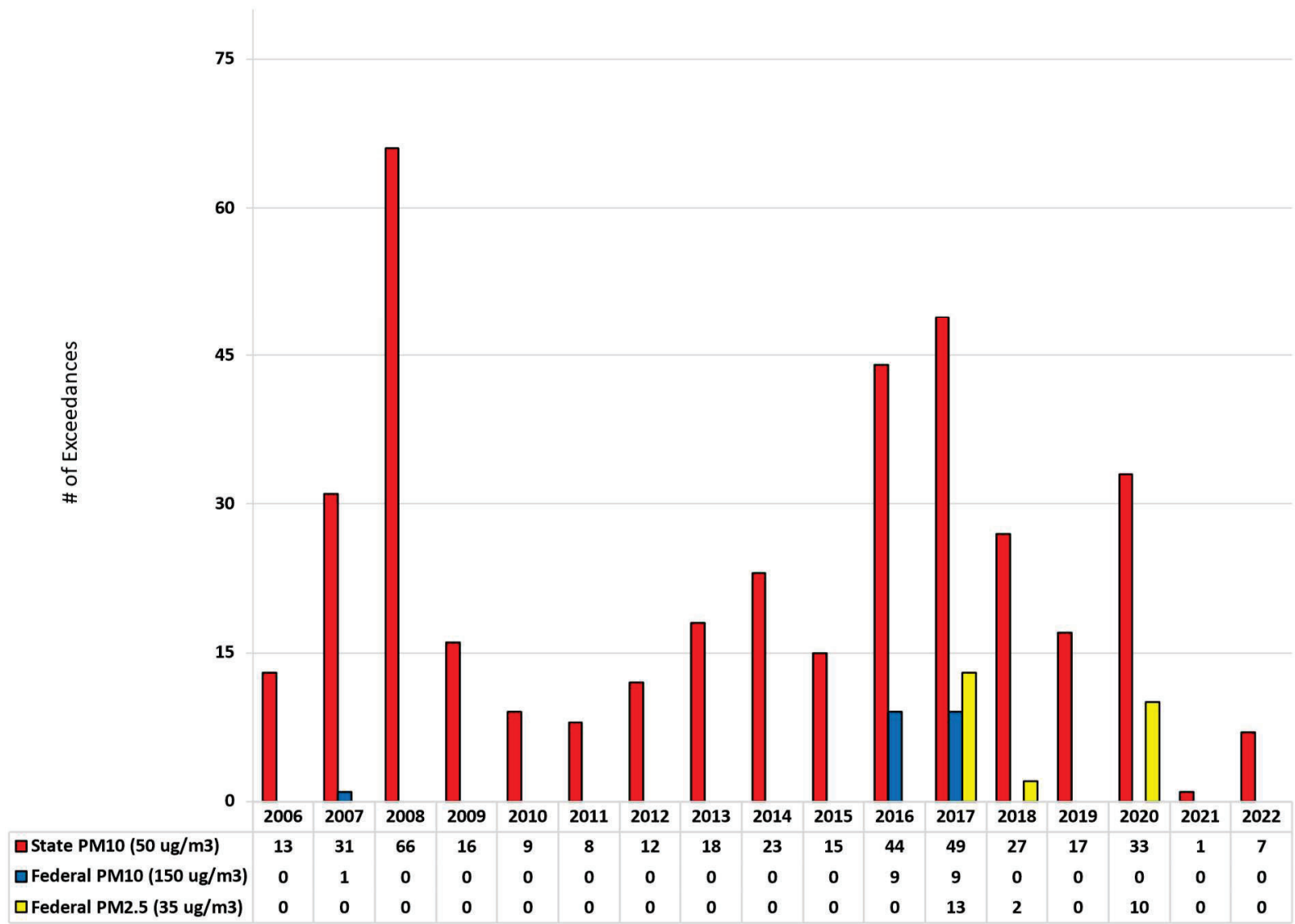


SOURCE: Santa Barbara County Air Pollution Control District, 2022

Santa Barbara County Last-Mile Broadband Program

Figure 4.1-2
Historical Santa Barbara County Ozone Exceedances (2001-2021)





SOURCE: Santa Barbara County Air Pollution Control District, 2022

Santa Barbara County Last-Mile Broadband Program

Figure 4.1-3
Historical Santa Barbara County Particulate Matter (PM) Exceedances (2006-2021)



After decades of hard work and improved air quality conditions, Santa Barbara County was designated as attainment for the state ozone standards in 2019. However, unpredictable weather patterns and air pollutant emission dispersion can lead to different pollutant concentration outcomes from one year to the next. The 2019 attainment designation was applicable for only a single year, and due to the recent exceedances, the County is currently designated as nonattainment-transitional for the ozone CAAQS (SBCAPCD 2024a).

Exceptional Events Mitigation Plan

The Exceptional Events Mitigation Plan (SBCAPCD 2024b) was developed for mitigation of PM impacts from exceptional events such as wildfires, high wind dust events, prescribed fires, stratospheric ozone intrusions, and firework demonstrations. Exceptional events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that state or local air agencies may implement in order to attain and maintain the NAAQS. Since these events cannot be reasonably controlled, the USEPA has adopted requirements and procedures to exclude air quality monitoring data affected by an exceptional event from regulatory determinations. However, to further verify that the public is being protected from exceptional events, the 2016 revisions to the federal Exceptional Events Rule requires states to develop mitigation plans for areas with historically documented or known recurring exceptional events. In April 2022, the USEPA identified additional areas subject to the mitigation plan requirements, specifically, a mitigation plan requirement is triggered if an initial notification is submitted for three or more exceptional events of the same type and pollutant within a three-year period. Based on this revision, Santa Barbara County was included as a designated area due to PM10 (particulate matter that is 10 microns or less in diameter) exceedances from wildfires.

This Exceptional Events Mitigation Plan was prepared to demonstrate SBCAPCD's practices to minimize public exposure to the impacts of PM10 during wildfires and other exceptional events. This Plan outlines the procedures the SBCAPCD will take to protect public health in cases where exceptional events increase PM10 concentrations in the region to a level where they exceed or are expected to exceed the 24-hour PM10 ambient air quality standard. The Plan includes public notification and education programs, steps to identify, study and implement mitigation measures, and provisions for periodic review and evaluation (SBCAPCD 2024b).

Source of Air Pollution

Air pollutant emissions in the SCCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.
- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles or wildfires.

Air Pollutants of Primary Concern

The FCAA and CCAA mandate the control and reduction of certain air pollutants. Under these laws, the USEPA and CARB have established the NAAQS and the CAAQS for “criteria pollutants” and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide (CO), volatile organic compounds (VOC)/reactive organic gases (ROC),² nitrogen oxides (NO_x), particulate matter with diameters of up to ten microns (PM₁₀) and up to 2.5 microns (PM_{2.5}), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROC and NO_x. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The characteristics, sources and effects of criteria pollutants are discussed in the following subsections. The following subsections describe the characteristics, sources, and health and atmospheric effects of air pollutants of primary concern.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between NO_x and ROC. ROC are composed of non-methane hydrocarbons (with some specific exclusions), and NO_x is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide. NO_x are formed during the combustion of fuels, while ROC are formed during combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROC and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including changes in breathing patterns, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes (USEPA 2024a). Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

Carbon monoxide is a localized pollutant that is found in high concentrations only near its source. The major source of CO, a colorless, odorless, poisonous gas, is the incomplete combustion of petroleum fuels by automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. The health effects of CO are related to its affinity for hemoglobin in the blood. Carbon monoxide causes a number of health problems, including aggravation of some heart diseases (e.g., angina), reduced tolerance for exercise, impaired mental function, and impaired fetal development (USEPA 2023a). At high levels of exposure, CO tends

² CARB defines VOC and ROC similarly as, “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROC and VOC are considered comparable in terms of mass emissions, and the term ROC is used in this EIR.

to dissipate rapidly into the atmosphere; consequently, violations of the NAAQS and/or CAAQS for CO are generally associated with localized CO “hotspots” that can occur at major roadway intersections during heavy peak-hour traffic conditions.

Nitrogen Dioxide

Nitrogen dioxide is a by-product of fuel combustion; the primary sources are motor vehicles and industrial boilers and furnaces. The principal form of NO_x produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form nitrogen dioxide, creating the mixture of nitric oxide and nitrogen dioxide commonly called NO_x. Nitrogen dioxide is an acute irritant that can aggravate respiratory illnesses and symptoms, particularly in sensitive groups (USEPA 2023b). A relationship between nitrogen dioxide and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility (CARB 2024a). It can also contribute to the formation of PM₁₀ and acid rain.

Sulfur Dioxide

Sulfur dioxide is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of sulfur dioxide emissions are from fossil fuel combustion at power plants and other industrial facilities. Smaller sources of sulfur dioxide emissions include industrial processes such as extracting metal from ore and the burning of fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Sulfur dioxide is linked to a number of adverse effects on the respiratory system, including aggravation of respiratory diseases, such as asthma and emphysema, and reduced lung function (USEPA 2024b).

Particulate Matter

Suspended atmospheric PM₁₀ and PM_{2.5} is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mist. Both PM₁₀ and PM_{2.5} are directly emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. Particulate matter is also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with PM₁₀ and PM_{2.5} can be very different. PM₁₀ is generally associated with dust mobilized by wind and vehicles while PM_{2.5} is generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{2.5} is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory and heart problems (CARB 2024b). More than half of PM_{2.5} that is inhaled into the lungs remains there. These materials can damage health by interfering with the body’s mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance. Suspended particulates can also reduce lung function, aggravate respiratory and cardiovascular diseases, increase mortality rates, and reduce lung function growth in children (CARB 2024b).

Lead

Lead is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. However, as a result of the USEPA’s regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior

to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (USEPA 2014). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. The health impacts of lead include behavioral and hearing disabilities in children and nervous system impairment (USEPA 2024c).

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of PM_{2.5}. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2024c).

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. CARB's Air Quality and Land Use Handbook: *A Community Health Perspective* recommends that local agencies avoid siting new, sensitive land uses within specific distances of potential sources of TACs, such as freeways and high-traffic roads, distribution centers, railroads and ports (CARB 2005).

4.1.2 Regulatory Setting

Federal and State Regulations

Federal and California Clean Air Acts

The FCAA governs air quality in the United States and is administered by the USEPA at the federal level. Air quality in California is also governed by regulations under the CCAA, which is administered by CARB at the state level. At the regional and local levels, local air districts such as the SCCAB typically administer the federal and California CAA. As part of implementing the federal and California CAA, the USEPA and CARB have established ambient air quality standards (AAQS) for major pollutants at thresholds intended to protect public health. **Table 4.2-2, *Current Federal and State Ambient Air Quality Standards***, summarizes the CAAQS and the NAAQS. The CAAQS are more restrictive than the NAAQS for several pollutants, including the one-hour standard for carbon monoxide, the 24-hour standard for sulfur dioxide, and the 24-hour standard for PM₁₀.

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. Depending on whether the standards are met or exceeded,

the local air basin is classified as in “attainment” or “nonattainment.” Once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the FCAA. Areas that have been redesignated to attainment are called maintenance areas. Some areas are unclassified, which means insufficient monitoring data are available; unclassified areas are considered to be in attainment. The Santa Barbara County portion of the SCCAB is classified as a nonattainment-transitional area for the State 1-hour and 8-hour ozone standards and a nonattainment area for the State PM10 standards. The other counties in the SCCAB are San Luis Obispo and Ventura. San Luis Obispo County is also classified as nonattainment for the 1-hour and 8-hour ozone CAAQS for Eastern San Luis Obispo County and the PM10 CAAQS (SLOCAPCD, 2019). Ventura County is also classified as nonattainment for the CAAQS for 1-hour and 8-hour ozone and PM10. Additionally, Ventura County is nonattainment for the NAAQS for 8-hour ozone (VCAPCD 2024). The SCCAB is classified as in attainment (or unclassifiable/attainment) for all other CAAQS and NAAQS.

**TABLE 4.1-2
CURRENT FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

| Pollutant | Averaging Time | Federal Primary Standards | California Standards |
|-------------------------------|-----------------------|----------------------------------|-----------------------------|
| Ozone | 1-Hour | - | 0.09 ppm |
| | 8-Hour | 0.070 ppm | 0.070 ppm |
| Carbon Monoxide | 8-Hour | 9.0 ppm | 9.0 ppm |
| | 1-Hour | 35.0 ppm | 20.0 ppm |
| Nitrogen Dioxide | Annual | 0.053 ppm | 0.30 ppm |
| | 1-Hour | 0.100 ppm | 0.18 ppm |
| Sulfur Dioxide | Annual | 0.30 ppm | - |
| | 24-Hour | 0.14 ppm | 0.04 ppm |
| | 1-Hour | 0.075 ppm | 0.25 ppm |
| PM ₁₀ | Annual | - | 20 ug/m ³ |
| | 24-Hour | 150 ug/m ³ | 50 ug/m ³ |
| PM _{2.5} | Annual | 9 ug/m ³ | 12 ug/m ³ |
| | 24-Hour | 35 ug/m ³ | - |
| Lead | 30-Day Average | - | 1.5 ug/m ³ |
| | 3-Month Average | 0.15 ug/m ³ | - |
| Visibility Reducing Particles | 8-Hour | - | - |
| Sulfates | 24-Hour | - | 25 ug/m ³ |
| Hydrogen Sulfide | 1-Hour | - | 0.03 ppm |
| Vinyl Chloride | 24-Hour | - | 0.01 ppm |

Ppm= parts per million, ug/m³= micrograms per cubic meter

SOURCE: CARB, 2024. California Ambient Air Quality Standards. <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>. Accessed June 2024.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs (Title 13 California Code of

Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time. These actions are also supplemented by the AB 2588 Air Toxics “Hot Spots” program and SB 1731, which require facilities to report their air toxics emissions, assess health risks, notify nearby residents and workers of significant risks if present, and reduce their risk through implementation of a risk management plan.

In 2008, CARB also approved the Truck and Bus regulation to reduce PM and NO_x emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The requirements were amended to apply to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. For the largest trucks and buses in the fleet, those with a GVWR greater than 26,000 pounds, all must be equipped with diesel particulate filters (DPFs) from 2014 and onward, and must have 2010 model year engines by January 1, 2023. For trucks and buses with a GVWR of 14,001 to 26,000 pounds, those with engine model years 14 to 20 years or older must be replaced with 2010 model year engines in accordance with the schedule specified in the regulation.

In 2020, CARB approved the Advanced Clean Trucks (ACT) regulation (13 CCR, Sections 1963–1963.5 and 2012–2012.3) to accelerate a large-scale transition to zero- and near-zero-emissions medium- and heavy-duty vehicles. The regulation requires manufacturers of medium- and heavy-duty vehicles to sell an increasing percentage of zero-emissions models from 2024 to 2035 with up to 55 percent of Classes 2b–3 trucks, 75 percent of Classes 4–8 trucks, and 40 percent of truck tractor sales. The regulation also includes reporting requirements to provide information that would be used to identify future strategies. The ACT is part of the statewide goal to considerably reduce NO_x and PM emissions in accordance with the NAAQS, reduce GHG emissions by 40 percent, and reduce petroleum use by 50 percent by 2030. By transitioning to zero-emissions trucks, the state would move away from petroleum dependency and emit less air pollutants from heavy-duty mobile sources.

CARB’s Heavy-Duty Engine and Vehicle Omnibus Regulation (Omnibus Regulation) was adopted on September 9, 2021, and became effective on December 22, 2021, to drastically cut smog-forming NO_x from conventional heavy-duty engines. The Omnibus Regulation will significantly increase the stringency of NO_x emissions standards and will also lengthen the useful life and emissions warranty of heavy-duty diesel engines for use in vehicles with a GVWR greater than 10,000 pounds. The more stringent NO_x emission standards begin with the 2024 model year engines and become more stringent with 2027 and subsequent model year engines (CARB 2024d).

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR, Section 2449). Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with large fleets beginning compliance in 2014, medium fleets in 2017, and small fleets in 2019. Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average

emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

California Air Resources Board Air Quality and Land Use Handbook

CARB published the Air Quality and Land Use Handbook in 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines, and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year) (CARB 2005).

In April 2017, CARB published a Technical Advisory supplement to the Air Quality and Land Use Handbook recognizing that infill developments as promoted by the State can place sensitive individuals in close proximity to high-volume roadways. The Technical Advisory provides planners and other stakeholders involved in land use planning and decision-making with information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways. The strategies include those that reduce traffic emissions, such as vehicle speed reduction mechanisms, including roundabouts, traffic signal management, and speed limit reductions on high-speed roadways. Strategies also include those that increase the dispersion of traffic emissions, such as implementing designs that promote air flow and pollutant dispersion along street corridors (e.g., wider sidewalks, bicycle lanes, streets characterized by buildings of varying heights), solid barriers such as sound walls, and vegetation for pollutant dispersion. Other strategies include those that remove pollution from the air such as indoor high efficiency filtration. This Technical Advisory is not intended as guidance for any specific project, nor does it create any presumption regarding the feasibility of mitigation measures for purposes of compliance with CEQA (CARB 2005).

Local Regulations

Santa Barbara County Air Pollution Control District

The SBCAPCD has jurisdiction over air quality planning for all of Santa Barbara County within the SCCAB. While air quality in the Air Basin has improved, the Air Basin requires continued diligence to meet the air quality standards. To meet these standards, the SBCAPCD has implemented air quality plans, discussed above under Air Quality Attainment Plans. Additionally, the SBCAPCD has adopted rules to

implement portions of the Air Quality Attainment Plans which may apply to the Project. Rules and Regulations

Environmental Guidance Document

The SBCAPCD acts as lead agency, responsible agency, or a concerned agency with jurisdiction by law over the air resources of the County under the California Environmental Quality Act (CEQA). In this capacity, the SBCAPCD reviews environmental documents for the air quality impacts of land use projects. This SBCAPCD has developed a guidance document titled *Scope and Content of Air Quality Sections in Environmental Documents* (2022b) which provides guidance for assessing and mitigating air quality and greenhouse gas impacts of development projects. This document discusses the required elements of the different CEQA documents and provides significance thresholds, see Section 4.1.3, below. Additionally, it discusses measures to reduce PM10 emissions that are required of all construction projects involving earthmoving activities. These measures are:

- During construction, use water trucks, sprinkler systems, or dust suppressants in all areas of vehicle movement to prevent dust from leaving the site and from exceeding the SBCAPCD's limit of 20% opacity for greater than 3 minutes in any 60 minute period. When using water, this includes wetting down areas as needed but at least once in the late morning and after work is completed for the day. Increased watering frequency should be required when sustained wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.
- Onsite vehicle speeds shall be no greater than 15 miles per hour when traveling on unpaved surfaces.
- Install and operate a track-out prevention device where vehicles enter and exit unpaved roads onto paved streets. The track-out prevention device can include any device or combination of devices that are effective at preventing track out of dirt such as gravel pads, pipe-grid track-out control devices, rumble strips, or wheel-washing systems.
- If importation, exportation, and stockpiling of fill material is involved, soil stockpiled for more than one day shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.
- Minimize the amount of disturbed area. After clearing, grading, earthmoving, or excavation is completed, treat the disturbed area by watering, OR using roll-compaction, OR revegetating, OR by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur. All roadways, driveways, sidewalks etc. to be paved should be completed as soon as possible.
- Schedule clearing, grading, earthmoving, and excavation activities during periods of low wind speed to the extent feasible. During periods of high winds (>25 mph) clearing, grading, earthmoving, and excavation operations shall be minimized to prevent fugitive dust created by onsite operations from becoming a nuisance or hazard.
- The contractor or builder shall designate a person or persons to monitor and document the dust control program requirements to ensure any fugitive dust emissions do not result in a nuisance and to enhance the implementation of the mitigation measures as necessary to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to grading/building permit issuance and/or map clearance.

Rules and Regulations

Rules and regulations that are most relevant to future projects that could occur under the Broadband Program include the following:

Regulation III – Prohibitions: This regulation sets forth restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events. The following is a list of rules that apply to the Project:

- **Rule 302 - Visible Emissions:** The rule states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view.
- **Rule 303 – Nuisance:** This rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material in violation of Section 41700 of the Health and Safety Code which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 319 – Asphalt Air Blowing Southern Zone:** A person shall not operate or use any article, machine, equipment or other contrivance for the air blowing of asphalt unless all gases, vapors and gas-entrained effluents from such an article, machine, equipment or other contrivance are:
 - A. Incinerated at temperatures of not less than 1400°F for a period of not less than 0.3 seconds; or
 - B. Processed in a manner determined by the Control Officer to be equally, or more, effective for the purpose of air pollution control than A. above, and considered Best Available Control Technology.
- **Rule 323 – Architectural Coatings:** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 329 – Cutback and Emulsified Asphalt Paving Materials:** This rule applies to manufacturers, distributors, and end users of cutback and emulsified asphalt materials for paving, construction and maintenance of streets, highways, parking lots, and driveways. It limits the amount of ROC and requires recordkeeping, testing, and compliance.
- **Rule 333 – Control of Emissions from Reciprocating Internal Combustion Engines:** This rule applies to any engine with a rated brake horsepower of 50 or greater except for those engines exempted in the rule. This rule sets emissions limits for NO_x, ROC, and CO for owners and operators and requires that engines be inspected and maintained.
- **Rule 345 – Control of Fugitive Dust from Construction and Demolition Activities:** This rule applies to any activity associated with construction or demolition of a structure or structures. Activities subject to this regulation are also subject to Rule 302 (Visible Emissions) and Rule 303 (Nuisance). This rule requires projects to prevent, reduce or mitigate fugitive dust emissions from a site. Rule 345 restricts visible fugitive dust to the project property line and restricts the tracking out of bulk materials onto public roads. Additionally, projects must utilize one or more of the one or more of the dust prevention techniques (identified within the rule). Visible roadway dust shall be minimized by utilizing the measures in the rule. Furthermore, the rule also states the work practice standards that shall be followed during structure demolition to prevent visible emissions.

County of Santa Barbara Comprehensive Plan

The County of Santa Barbara Comprehensive Plan was first adopted in 1981 but has been updated and republished several times in recent years (County of Santa Barbara, 2009). The Comprehensive Plan is a long-range planning document that is applicable to the unincorporated communities within the County that the where the Project would be implemented. The Comprehensive Plan includes a Land Use Element with an Air Quality Supplement, which contains the following goals and policies that address air quality:

Goal: Significant increases in the use of bicycles, walking, and transit. Reduced use of the automobile.

Policy A: Direct new urban development to areas within existing urbanized areas without endangering environmentally sensitive areas or open space resources.

Policy B: Promote the conservation and rehabilitation of existing urban development.

Policy E: Improve the integration of long-range planning and project approval procedures with air quality planning requirements.

Los Alamos Community Plan

The Los Alamos Community Plan, adopted February 15, 2011, includes an Air Quality Element which contains the following goals and policies related to air quality:

Goal AQ-LA-1: Maintain Healthful Air Quality in the Los Alamos Valley.

Policy AQ-LA-1.1: The County shall impose appropriate restrictions and control measures upon construction activities associated with each future development project, in order to avoid significant deterioration of air quality.

Development Standard AQ-LA-1.1.1: Future project construction in Los Alamos shall follow all requirements of the Santa Barbara Air Pollution Control District (APCD) and shall institute Best Available Control Technology (BACT) where necessary to reduce emissions below APCD thresholds. To reduce NOx and diesel particulate emissions from construction equipment during project grading and construction, the following shall be adhered to:

- All portable construction equipment shall be registered with the state's portable equipment registration program OR permitted by the District by September 18, 2008.
- Diesel construction equipment meeting the California Air Resources Board's Tier 1-emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting Tier 2 or higher emission standards should be used to the maximum extent feasible.
- The engine size of construction equipment shall be the minimum practical size.
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- Construction equipment shall be maintained in tune per the manufacturer's specifications.
- Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or precombustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

- Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed on equipment operating onsite.
- Diesel powered equipment should be replaced by electric equipment whenever feasible.
- Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible.
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite

Policy AQ-LA-1.2: The County shall strive for consistency of all land use planning with the Clean Air Plan.

Policy AQ-LA-1.3: The County shall implement those land use patterns and transportation programs which will serve to reduce vehicle trips and total vehicle miles traveled.

Policy AQ-LA-1.4: The County, when reviewing discretionary projects, shall require the use of techniques designed to conserve energy and minimize pollution.

Santa Ynez Valley Community Plan

The Santa Ynez Valley Community Plan, adopted October 6, 2009, covers Los Olivos, and contains a Land Use Element which has the following air quality policies:

Policy LUG-SYV-8: The public shall be protected from air emissions and odors that could jeopardize health and welfare.

City of Guadalupe General Plan

The City of Guadalupe 2042 General Plan (City of Guadalupe 2022), adopted November 22, 2022, includes an Air Quality Element which contains the following goals and policies that address air quality:

Goal S-1: To achieve and maintain clean, healthy air for the residents of Guadalupe and to reduce greenhouse gases consistent with state efforts to address climate change.

Policy S-1.2: The City will review all development projects for impact on air quality and will require the implementation of the Santa Barbara County Air Pollution Control District dust control measures during construction, implement exhaust control measures during construction activities, and require all development projects to pave roads and parking areas.

Policy S-1.3: The City will ensure that new development with sensitive uses located adjacent to toxic air contaminant (TAC) sources minimizes potential health risks by requiring new development to be designed with consideration of site and building orientation, location of trees, and incorporation of ventilation and filtration to lessen any potential health risks. At the City's discretion, it will require preparation of a health risk assessment for projects deemed to have acute potential for harm through the exposure of sensitive uses to the effects of TACs.

4.1.3 Analysis, Impacts and Mitigation

Methodology and Significance Thresholds

This analysis follows the guidance and methodologies recommended in the CEQA Appendix G thresholds, SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (2022b), and the County of Santa Barbara *Environmental Thresholds and Guidelines Manual* (2021). While there is some overlap in the thresholds from these three sources, each has been individually listed below because thresholds from these sources may be applicable to individual projects under the Broadband Program.

CEQA Appendix G Significance Thresholds

Pursuant to the *State CEQA Guidelines*, air quality impacts related to the proposed project would be significant if the project would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative guidelines for ozone precursors);
- c) Expose sensitive receptors to substantial pollutant concentrations; and/or
- d) Create objectionable odors affecting a substantial number of people.

SBCAPCD Significance Thresholds

According to the SBCAPCD *Scope and Content of Air Quality Sections in Environmental Documents* (2022), a proposed project would have a significant air quality impact on the environment if operation of the project would:

- a) Emit (from all project sources, both stationary and mobile) more than the daily trigger for offsets or Air Quality Impact Analysis set in the SBCAPCD New Source Review Rule, for any pollutant (i.e., 240 lbs/day for ROC or NO_x and 80 lbs/day for PM₁₀; there is no daily operational threshold for CO since it is an attainment pollutant);
- b) Emit more than 25 lbs/day of NO_x or ROC from motor vehicle trips only;
- c) Cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone);
- d) Exceed the SBCAPCD health risk public notification thresholds adopted by the SBCAPCD Board (10 excess cancer cases in a million for cancer risk and/or a Hazard Index of greater than (1.0) for non-cancer risk);
- e) Be inconsistent with the latest adopted federal and State air quality plans for Santa Barbara County.

The SBCAPCD has not adopted quantitative thresholds of significance for short-term or construction emissions but suggests that construction-related NO_x, ROC, PM₁₀, and PM_{2.5} emissions from diesel- and gasoline-powered equipment, paving and other activities, should be quantified. Additionally, SBCAPCD suggests using 25 tons per year for ROC or NO_x as a guideline for determining the significance of construction impacts for individual projects. Under SBCAPCD Rule 202 D.16, if

combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct permit have the potential to exceed 25 tons of any pollutant, except CO, in a 12-month period, the owner of the stationary source shall provide offsets under the provisions of SBCAPCD Rule 804 and shall demonstrate that no ambient air quality standard will be violated. Furthermore, standard dust control measures discussed above under Section 4.1.2 must be implemented for any discretionary project involving earth-moving activities.

County of Santa Barbara Significance Thresholds

The County of Santa Barbara has established its own CEQA thresholds. According to the County's Environmental Thresholds and Guidelines Manual (2021), a significant adverse air quality impact may occur when a project, individually or cumulatively, triggers any one of the following:

- a) Interferes with progress toward the attainment of the ozone standard by releasing emissions which equal or exceed the established long-term quantitative thresholds for NO_x and ROC;
- b) Equals or exceeds the state or federal ambient air quality standards for any criteria pollutants (as determined by modeling).

Additionally, the County of Santa Barbara has set quantitative emissions thresholds. However, the County has not set a quantitative threshold for short term/construction emissions but expects the CEQA document will discuss short-term/construction emissions for PM₁₀ if it involves ground disturbance. Since the Broadband Program will involve ground disturbance, it will be required to utilize the dust control measures, identified above under Section 4.1.2, during construction activities. The long-term/operational emissions significance thresholds for NO_x and ROC are the same as those of the SBCAPCD. Additionally, for CO, a significant air quality impact would occur if it causes, by adding to the existing background CO levels, a CO "hot spot" where the CAAQS of 20 ppm CO is exceeded. The county has developed Project Screening for CO Impacts:

1. If a project contributes less than 800 peak hour trips, then CO modeling is not required.
2. Projects contributing more than 800 peak hour trips to an existing congested intersection at level of service (LOS) D or below, or will cause an intersection to reach LOS D or below, may be required to model for CO impacts. However, projects that will incorporate intersection modifications to ease traffic congestion, are not required to perform modeling to determine potential CO impacts.

Short-Term Emissions Methodology

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related emissions would generate temporary criteria pollutant emissions, primarily due to the operation of construction equipment and truck trips for Broadband Program projects. As discussed in Chapter 2, *Project Description*, a total of nine communities in the County have already been identified as "Priority Areas" under the Broadband Program. However, funding has not been secured for all Priority Areas and it is unknown if all locations will be funded. Nonetheless, for the purposes of this EIR and to provide for a conservative and environmentally protective analysis, air quality impacts for all of the nine Priority Areas

are analyzed. While the specific size and location of all potential future broadband projects under the Broadband Program have not yet been identified, it is assumed that the nature and intensity of such future installation projects would be similar in scope and scale for each of the nine Priority Area projects. As such, for the purposes of analysis in this CEQA document, construction activities and methods employed for the initial nine Priority Area projects have been quantitatively analyzed and would be comparable to those necessary for the installation of future broadband facilities in other portions of the County.

The Project would include the installation of fiber optic cable in various locations throughout the County. For the nine Priority Area communities, high-level engineering designs that indicate the location of new broadband lines within each community have been prepared. In general, the new fiber optic lines would be installed underground following public or private roadways with the intention to minimize or avoid disturbance of roadway surfaces wherever feasible. However, it is possible some fiber optic lines could be installed directly under roadways in areas with limited shoulder space or where existing conduit under the road may be used, thus avoiding new surface disturbance. The Project also includes installation and construction activities within those areas where lateral lines are installed between public or private roadways and individual businesses or residences. Individual residence or business connections typically would be installed within previously disturbed and/or developed areas (e.g., adjacent to driveways or in landscaped areas), and generally would avoid drainages and sensitive habitats. Lateral alignments would typically follow other utility installations. Although not anticipated, where subsurface installation of fiber optic cable is infeasible, aerial installation along existing utility poles will be undertaken.

While funding has not been secured for all Priority Areas, for the purposes of this analysis and to provide for a conservative and environmentally protective analysis, it is assumed that construction of five near-term Priority Area projects would occur simultaneously over a period of approximately 24 months beginning as early as in Spring 2025, which includes any necessary permitting and construction of the new facilities. It is anticipated that future broadband projects of similar size and scale located in other areas of the County would require a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the nine Priority Area projects.

Short-term construction generated air pollutant emissions were calculated using the California Emissions Estimator model (CalEEMod), Version 2022.1 (See Appendix B), as recommended by the SBCAPCD and other air districts in California. Modeling was based on program-specific information (e.g., area to be graded, area to be paved, energy information) where available; assumptions based on typical construction activities; and default values in CalEEMod that are based on the program location and land use types. In general, for 1 mile of underground fiber optic conduit, boring activities were estimated to last approximately 10 days and trenching would last for an average of 18 to 20 days (approximately 30 days total). For the purposes of this analysis, it is assumed that up to five individual fiber optic line projects could be implemented concurrently throughout Santa Barbara County and participating cities. Total construction emissions detailed in this analysis provide a comprehensive view of program-level air quality emissions, which would occur over the course of program implementation and is representative of maximum annual emissions. For the purposes of the air quality analysis, construction activities were modeled for the earliest potential time frame to provide for a conservative analysis. If construction is delayed and begins subsequent to 2025, the emissions presented in this Program EIR would be conservative as emissions occurring in future years would be lower than those analyzed herein due to the use of a more

energy-efficient and cleaner burning construction vehicle fleet mix, pursuant to State regulations that require vehicle fleet operators to phase-in less polluting heavy-duty equipment.

Long-Term Emissions Methodology

Once constructed, the broadband network components would generally operate passively, with only incidental maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. Operational activities that would generate mobile source emissions for any given fiber optic line and associated facilities constructed under the program would be limited to routine maintenance checks. It was assumed that the program would only induce a few vehicles per month. The program would not induce any new electrical demand or generate solid water or wastewater beyond existing conditions.

Health Impacts

Short-term and long-term exposure to criteria pollutants and TACs may result in adverse health effects, which may include aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, increased cancer risk, heart attack and premature death. The ambient air quality standards are health-based standards. Therefore, in this impact analysis, if the Project would result in a new violation of a particulate standard or substantially contribute to an existing violation, it would also contribute to these adverse health effects.

Impacts and Mitigation Measures

This section describes generalized air quality impacts associated with the Broadband Program. The five near-term Priority Area projects analyzed in this Program EIR would be representative of future broadband projects of similar size and scale located in other areas of the County. In general, implementation of future broadband projects envisioned by the Broadband Program could result in air quality impacts as described in the following sections.

Threshold 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact Statement 1: Implementation of the Proposed Project could conflict with or interfere with the applicable air quality plan if it significantly increases ROC or NO_x emissions to an extent that meeting the CAAQS would be in jeopardy.

Priority Area Projects

The Broadband Program is subject to the SBCAPCD 2022 Ozone Plan (2022 Plan). As discussed above, the SBCAPCD has developed the 2022 Plan to meet the requirements of the CCAA. A significant air quality impact may occur if a project is not consistent with the 2022 Plan. The Project would include the installation of fiber optic cable in various locations throughout Santa Barbara County. The Project's construction would result in temporary emissions and would not include permanent stationary emissions sources regulated by the SBCAPCD. Additionally, the number of new employees and car trips for maintenance activities would be minimal.

The proposed Project would generate an increase in short-term construction employment; however, such short-term employment would be expected to be filled by employees within the construction industry in the SCCAB region. Construction industry jobs generally have no regular place of business, as construction workers commute to job sites throughout the region, which may change several times a year. Moreover, these jobs would be temporary in nature. With respect to temporary construction emission sources, construction contractors would be required to comply with the CARB Air Toxic Control Measure that limits heavy duty diesel motor vehicle idling to no more than five minutes at any given location with certain limited exceptions defined in the regulation for equipment in which idling is integral to the function of the equipment or activity (such as concrete trucks and concrete pouring). In addition, contractors would be required to comply with required and applicable BACT and the CARB In-Use Off-Road Diesel Vehicle Regulation to use lower emitting equipment in accordance with the phased-in compliance schedule for equipment fleet operators. The Project would not conflict with implementation of these strategies. Additionally, the Project would comply with all applicable SBCAPCD rules and regulations, such as Rule 345, which ensures that fugitive dust emissions are reduced. Additionally, as discussed in SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (2022b), the Project Contractor(s) would be required to comply with measures to reduce PM10 emissions during any earthmoving activities. Furthermore, as detailed in Threshold 2, below, the projected construction emissions for criteria pollutants, especially ROC and NO_x would not exceed the SBCAPCD's regional significance thresholds for construction activities. Thus, the Project would not conflict with the County's ability to meet the CAAQS as outlined in the 2022 Plan. Compliance with these requirements is consistent with and meets or exceeds the 2022 Plan requirements for control strategies intended to reduce emissions from construction equipment and activities. Therefore, construction of the Broadband Program would not conflict with or obstruct implementation of the 2022 Plan, and impacts would be **less than significant**

Operation of the Broadband Program would generally operate passively, with only incidental maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. Thus, operation would require minimal employees and maintenance vehicles. Projects that are considered consistent with the 2022 Plan would not interfere with attainment because this growth is included in the projections used in the formulation of the 2022 Plan. Operation of the Project would not result in new growth and would not interfere with employee or population growth projections contained in *Connected 2050: Regional Transportation Plan & Sustainable Communities Strategy* (SBCAG 2021), which forms the basis of the growth projections in the 2022 Plan. Additionally, operation of the Project would not result in significant new emissions over those of existing conditions. As a result, the Project would not conflict with or obstruct implementation of the 2022 Plan and impacts would be **less than significant**.

Future Broadband Projects

It is anticipated that future broadband projects, located in other areas of the County, would be of similar size and scale, with a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the nine Priority Area projects. Therefore, construction of future broadband projects would not conflict with or obstruct implementation of the 2022 Plan, and impacts would be **less than significant**.

Similarly, operation of future broadband projects would generally operate passively, with only incidental maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment similar to the nine Priority Area projects. Therefore, operation of future broadband projects would not conflict with or obstruct implementation of the 2022 Plan, and impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Cumulative Impacts

Implementation of the Project, in combination with other development would contribute to a cumulative impact if it conflicted with or interfered with the applicable air quality plan by significantly increasing ROC or NO_x emissions to an extent that meeting the CAAQS would be in jeopardy.

As discussed above, the Broadband Program would not conflict with or interfere with the 2022 Plan or the SBCAPCD's ability to meet the CAAQS. All past, present, and reasonably future projects would also comply with CARB and/or the USEPA mandated mobile source emissions regulations related to on-road vehicle emissions standards, off-road equipment fleet standards, and fuel sulfur standards. They would also comply with SBCAPCD's measures to reduce PM10 during any earthmoving activities. Thus, the Project along with past, present, and reasonably probable future projects would not interfere with the ability of the SBCAPCD's ability to meet the CAAQS for ozone. The cumulative impact would be **less than significant**.

Threshold 2: 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??

Impact Statement 2: Implementation of the Project could result in a cumulatively considerable net increase of ROC, NO_x, or PM10 for which the SCCAB is in nonattainment for an applicable federal or state ambient air quality standard.

Priority Area Projects

Construction of the Project has the potential to generate temporary regional criteria pollutant emissions through the use of heavy-duty construction equipment, such as backhoes, loaders, drill rigs, trenchers, and other equipment; and through vehicle trips generated by workers and haul trucks traveling to and from the various broadband installation sites within the Priority Areas. In addition, fugitive dust emissions would result from site preparation and various soil-handling activities. Mobile source emissions, primarily NO_x, would result from the use of construction equipment. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions.

The SBCAPCD has not adopted quantitative thresholds of significance for short-term or construction emissions but suggests that construction-related NO_x, ROC, PM10, and PM2.5 emissions from diesel- and gasoline-powered equipment, paving and other activities, should be quantified. Additionally, SBCAPCD suggests using 25 tons per year for ROC or NO_x as a guideline for determining the significance of construction impacts for individual projects. The construction emissions associated with

the Project and the applicable emissions thresholds are presented in **Table 4.1-3, Maximum Regional Construction Emissions for Broadband Program (Tons per Year)**.

**TABLE 4.1-3
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS FOR BROADBAND PROGRAM (TONS PER YEAR)^A**

| Year | ROC | NO _x | CO | SO ₂ | PM ₁₀ | PM _{2.5} |
|---------------------------------|------|-----------------|-------|-----------------|------------------|-------------------|
| Year 1 | 0.79 | 7.19 | 8.79 | 0.02 | 0.40 | 0.27 |
| Year 2 | 1.68 | 12.97 | 16.73 | 0.04 | 0.59 | 0.42 |
| Year 3 | 0.19 | 0.76 | 0.84 | 0.00 | 0.06 | 0.03 |
| Maximum Annual Emissions | 1.68 | 12.97 | 16.73 | 0.04 | 0.59 | 0.42 |
| Significance Thresholds | 25 | 25 | -- | -- | -- | -- |
| Significant Impact? | No | No | No | No | No | No |

Notes:

^a Annual emissions are representative of construction of the five near-term Priority Area broadband installations occurring simultaneously. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix B.

-- No Significance Threshold.

Emissions were assumed to begin in the first Quarter of 2025.

SOURCE: ESA, 2024

As shown in Table 4.1-3 the maximum daily construction emissions generated by the Project's worst-case construction scenario of up to five Priority Area broadband installations occurring simultaneously would not exceed the SBCAPCD's annual significance threshold for ROC or NO_x. Therefore, the Broadband Program would not 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 and construction impacts would be **less than significant**.

Operation of the Broadband Program would generally operate passively, with only incidental maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. Mobile emissions from the few vehicles for periodic maintenance would result in minimal emissions. The Project would not require additional employees to conduct maintenance; therefore, an increase in worker related commuting vehicle emissions would not be anticipated. Thus, operation would require minimal employees and maintenance vehicles and would result in negligible new emissions over those of existing conditions. Therefore, mobile emissions resulting from the Project would be below the SBCAPCD's daily significance threshold for ROC, NO_x, or PM₁₀. Overall, given the sporadic usage of maintenance vehicles, Project operational-source emissions would not exceed applicable SBCAPCD thresholds of significance. As a result, the Broadband Program would not 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 and operational impacts would be **less than significant**.

Future Broadband Projects

It is anticipated that future broadband projects, located in other areas of the County, would be of similar size and scale, with a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the nine near-term Priority Area projects. As shown above, since construction emissions for

the construction of up to five of the near-term Priority Area projects occurring simultaneously would not exceed SBCAPCD significance thresholds, it is assumed that construction of future broadband projects would also not exceed SBCAPCD significance thresholds for ROC, NO_x, and PM₁₀, and impacts would be **less than significant**.

Similarly, operation of future broadband projects would generally operate passively, with minimal operational emissions limited to occasional maintenance, typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment similar to the nine Priority Area projects. Furthermore, operation of the broadband installations could encourage and support telecommunication opportunities and strategies, such as telework and telemedicine, which could in turn lead to reduced vehicle miles traveled (VMT) and reduced vehicle emissions. The Project's broadband installations would not include any stationary sources of emissions. Therefore, it is assumed that operation of future broadband projects would not exceed SBCAPCD significance thresholds for ROC, NO_x, and PM₁₀, and impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Cumulative Impacts

Implementation of the Project, in combination with other developments could result in a cumulatively considerable net increase of ROC, NO_x, or PM₁₀ for which the SCCAB is in nonattainment for an applicable federal or state ambient air quality standard.

As discussed above, the Broadband Program emissions would not exceed the SBCAPCD's suggested annual construction significance thresholds for ROC and NO_x. Due to the Project's limited maintenance operations, the Project would not surpass the daily operational significance thresholds. All past, present, and reasonably future projects would also be required to meet the SBCAPCD's significance thresholds or provide feasible mitigation measures to reduce emissions. Thus, the Project along with past, present, and reasonably probable future projects would not 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. The cumulative impact would be **less than significant**.

Threshold 3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact Statement 3: Implementation of the Project could expose sensitive receptors to substantial pollutant concentrations of DPM and CO.

Priority Area Projects

Toxic Air Contaminants

Construction activities for Priority Area projects would occur over approximately 24 months. For potential health risks, the construction duration would be significantly lower than the 30-year residential exposure period associated with cancer health risks. Sensitive receptors (i.e., residential receptors) may be exposed to DPM, a TAC, from the exhaust from construction equipment and diesel-fueled motor vehicles. Fiber optic cable installation is inherently linear such that construction equipment and activity would be continually moving along the roadway or planned fiber route and would not remain in one place for any

substantial length of time. Thus, sensitive receptor exposure would be limited in duration since the construction would always be moving. Health risk impacts from Project construction would not be anticipated due to the short-term and temporary construction duration, the buffers to nearby sensitive receptors, the movement of construction activities around the Project Site and short time frame near any single receptor, and the small number of construction equipment. The construction emissions modeling shown above in Table 4.1-3 accounts for the simultaneous construction of five of the near-term Priority Area projects. However, it is noted that the five Priority Area projects would be located in different locations throughout the County. As such, the emissions presented in Table 4.1-3 would not be representative of localized emissions to which any one sensitive receptor would be potentially exposed.

Construction activities associated with the nine Priority Areas, as well as for future installation projects, would move and progress along the linear alignment such that any one specific sensitive receptor location would not be exposed to the full duration of construction emissions from the full extent of construction activities. For instance, while it is conservatively assumed that construction of the five near-term Priority Area projects could occur simultaneously over a period of approximately 24 months, any one specific sensitive receptor location would not be exposed to construction emissions for the full 24-month duration, but rather only for several days or several weeks as construction moves or progresses along the alignment. Thus, exposure to construction emissions localized to a specific area would be a temporary and short-term occurrence to any one specific sensitive receptor location. Furthermore, as shown in Table 4.1-3, Project construction PM₁₀ (including DPM) would not exceed any thresholds specified by SBCAPCD thresholds. Construction contractors would also be required to comply with regulations that limit diesel emissions, such as the CARB Air Toxics Control Measure that limits diesel vehicle idling to no more than five minutes at a location. Therefore, Project construction would not expose sensitive receptors to substantial TAC emissions and impacts would be **less than significant**.

Operation of the Broadband Program would generally operate passively, with only occasional maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. Mobile emissions from the few vehicles for periodic maintenance would result in minimal DPM emissions. Health risk impacts from Project operation would not be anticipated at any nearby receptors due to the minimal maintenance vehicles, the buffers to nearby sensitive receptors, and limited frequency of the Project's operations. Therefore, Project operation would not expose sensitive receptors to substantial TAC emissions and impacts would be **less than significant**.

CO Hotspots

The SCCAB is currently designated as a CO attainment area for both the NAAQS and CAAQS. The SBCAPCD does not have a significance threshold for CO as it is an attainment pollutant. However, the County of Santa Barbara has developed Project Screening guidance for CO Impacts as discussed above under Significance Thresholds, which utilizes 800 peak hour trips as the cutoff for conducting CO modeling. Construction of the Broadband Program's five near-term Priority Area projects would require a total of approximately 150 round trips per day or 300 one-way trips per day (i.e., 150 inbound and 150 outbound trips) of which approximately 100 one-way trips would be from worker commute vehicles and approximately 200 one-way trips would be from vendor and haul trucks, which would not exceed the County's Screening Threshold of 800 peak hour trips. Operation of the Project would only require a few vehicles per month for maintenance, which would not exceed the County's Screening Threshold of 800 peak hour trips. Thus, CO modeling is not required as the Project is not expected to result in a CO

hotspot. Therefore, Project construction and operation would not expose sensitive receptors to CO hotspots and impacts would be **less than significant**.

Fugitive Dust and Valley Fever

Valley Fever is an infective disease caused by the fungus *Coccidioides immitis*. Infection occurs via inhalation of *Coccidioides immitis* spores that have become airborne from the upturn of dry, dusty soil by wind, construction, farming, or other activities. Sensitive receptors may be exposed to *Coccidioides immitis*, the fungus that causes Valley Fever, if present in soil that is disturbance and made airborne as a result of the Project's construction activities. Onsite workers are the most at risk of contracting Valley Fever, due to their proximity to the potentially impacted soils. Soil criteria that may indicate the potential presence of Valley Fever fungus include the disturbance of undeveloped topsoil, the presence of dry, alkaline soils, or the disturbance of virgin undisturbed soil in non-urban areas. The Project would minimize the exposure to the *Coccidioides immitis* (Valley Fever) spores from the disruption of soil by complying with the SBCAPCD rules and regulations, such as Rule 345, which ensures that fugitive dust emissions are reduced. Therefore, with regulatory compliance and buffers to nearby sensitive receptors, risk of health concerns associated with presence of *Coccidioides immitis* spores, would reduce the potential for Valley fever impacts during construction activities. However, due to the undeveloped nature of much of the land area that may be disturbed as a result of Project construction activities, there is a potential, albeit very limited, for exposure that can be further reduced with implementation of mitigation. With the implementation of **Mitigation Measure AQ-1**, impacts to workers and the surrounding community receptors would be reduced to be **less than significant**.

Naturally Occurring Asbestos

Construction in areas of rock formations that contain naturally occurring asbestos could release asbestos into the air and pose a health hazard. A review of the United States Geological Survey (USGS) *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*, which includes a map containing areas more likely to have rock formations containing naturally occurring asbestos in California, indicates that there are no areas likely containing naturally occurring asbestos in the areas associated with the Priority Area projects (USGS 2011). The locations of the Priority Area projects are shown in Figure 2-2 of Chapter 2, *Project Description*. Based on the USGS data, areas in the County that may contain naturally occurring asbestos are located to the east of the Los Olivos Priority Area and to the west/southwest of the Riverpark Priority Area. Therefore, the Project would not expose sensitive receptors to naturally occurring asbestos during construction. Project impacts to air quality related to naturally occurring asbestos would be **less than significant**.

Future Broadband Projects

It is anticipated that future broadband projects, located in other areas of the County, would be of similar size and scale, with a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the Priority Area projects. As discussed above, construction emissions for the five near-term Priority Area projects would not expose sensitive receptors to substantial TAC emissions or CO hotspots. Similar to the five near-term Priority Area projects, future broadband projects would not occur in areas likely to contain naturally occurring asbestos and would not expose sensitive receptors to naturally occurring asbestos. Future broadband projects would generate emissions similar to these near-term

Priority Area projects and would also not expose sensitive receptors to substantial TAC emissions or CO hotspots, and impacts would be **less than significant**.

Similarly, operation of future broadband projects would generally operate passively, with only occasional maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment like the Priority Area projects. Therefore, as shown above, since operational emissions for the Priority Area projects would not expose sensitive receptors to substantial TAC emissions or CO hotspots, it is assumed that operation of future broadband projects would also not expose sensitive receptors to substantial TAC emissions or CO hotspots, and impacts would be **less than significant**.

Mitigation Measures

Mitigation Measure AQ-1: Valley Fever. During heavy grading where the top 12 inches of soil would be disturbed, and in locations with potential Valley Fever fungal spores (i.e., disturbance of the top soil of undeveloped land to a depth of about 12 inches; dry, alkaline, sandy soils; virgin, undisturbed, non-urban areas; windy areas; and archaeological resources probable or known to exist in the area (Native American midden sites), construction contractors will comply with the following measures as feasible to reduce potential Valley Fever impacts:

- Require crews to use respirators during project clearing, grading, and excavation operations in accordance with California Division of Occupational Safety and Health regulations.
- Require that the cabs of grading and construction equipment be air-conditioned or enclosed with sufficient ventilation and particulate matter filtration systems.
- Require crews to work upwind from excavation sites where possible.
- Where acceptable to the fire department, control weed growth by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.
- During rough grading and construction, ensure that the access way into the project site from adjoining paved roadways is paved or treated with environmentally safe dust control agents.

Cumulative Impacts

Implementation of the Project, in combination with other developments, could expose sensitive receptors to substantial pollutant concentrations of DPM and CO.

As discussed above, the Broadband Program is not expected to expose sensitive receptors to substantial pollutant concentrations of DPM or CO hotspots. All past, present, and reasonably future projects would also be required to analyze if sensitive receptor would be exposed to substantial pollutant concentrations of DPM and CO and mitigate impacts, if required. Cumulative projects would also comply with applicable construction fugitive dust rules, such as SBCAPCD Rule 345, reduce fugitive dust-related impacts including potential Valley Fever impacts, and require mitigation measures if potentially significant impacts are identified. Thus, the Project along with past, present, and reasonably probable future projects would not expose sensitive receptors to substantial pollutant concentrations of TACs or CO hotspots. Cumulative impact would be **less than significant** or **mitigated to less than significant**, as appropriate.

Threshold 4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact Statement 6: Implementation of the Project could result in other emissions, such as odors, adversely affecting a substantial number of people.

Priority Area Projects

During Project construction, diesel trucks and off-road construction equipment may emit odors such as that of diesel exhaust which would be temporary and intermittent in nature. Such odors would be a temporary source of nuisance to adjacent uses but would not affect a substantial number of people. Through mandatory compliance with SBCAPCD Rules, specifically Rule 303, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people. Therefore, construction activities for the Broadband Program would result in **less than significant** impacts with respect to other emissions, including those leading to odors.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project would not contain any active manufacturing activities and would not convert current agricultural land to residential land uses. In addition, the Project would not result in the creation of smoke or ash, or excessive dust generation. Furthermore, the Project would comply with SBCAPCD Rule 303 – Nuisance. Therefore, operational activities for the Broadband Program would result in **less than significant** impacts with respect to other emissions, including those leading to odors.

Future Broadband Projects

It is anticipated that future broadband projects, located in other areas of the County, would be of similar size and scale, with a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the Priority Area projects. As shown above, since construction emissions for the five Priority Area projects would not result in other emissions, such as odors, adversely affecting a substantial number of people, it is assumed that construction of future broadband projects would also not result in other emissions, such as odors, adversely affecting a substantial number of people, and impacts would be **less than significant**.

Similarly, operation of future broadband projects would generally operate passively, with only occasional maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment like the five Priority Area projects. Therefore, as shown above, since operational emissions for the five priority area projects would not result in other emissions, such as odors, adversely affecting a substantial number of people, it is assumed that operation of future broadband projects would also not result in other emissions, such as odors, adversely affecting a substantial number of people, and impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Cumulative Impacts

Implementation of the Project, in combination with other developments, could result in other emissions, such as odors, adversely affecting a substantial number of people.

As discussed above, the Broadband Program is not expected to result in other emissions, such as odors, adversely affecting a substantial number of people. All past, present, and reasonably future projects would also be required to comply with SBCAPCD Rules, specifically Rules 302, 303, and 345, which would prohibit nuisance emissions, such as odors. Thus, the Project along with past, present, and reasonably probable future projects would not result in other emissions, such as odors, adversely affecting a substantial number of people. The cumulative impact would be **less than significant**.

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