

4.2 Air Quality

This section describes current air quality conditions in and around the City of Solvang and analyzes the air quality impacts of the proposed General Plan Update (2045 General Plan or proposed project).

4.2.1 Setting

a. Climate

The project planning area is part of the South Central Coast Air Basin (SCCAB) that includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The climate of the Santa Barbara County area and all of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the semi-permanent high-pressure cell in the northeastern Pacific Ocean. The Mediterranean climate of the region produces moderate average temperatures, although slightly more extreme temperatures can be reached in the winter and summer. The proximity of the Pacific Ocean tends to moderate temperature near the coast while the steep mountain ranges produce a significant "orographic effect." Orographic effect occurs when storms approaching the county from the Pacific Ocean are forced upward against the mountains resulting in increased precipitation release with topographic elevation. The orographic effect, in conjunction with steep, short watersheds occasionally result in flash flooding along the county's south coast. Santa Barbara County is situated among a series of transverse mountain ranges, the only ranges within the continental United States to trend in an east-westerly direction. Most of the County's developed areas are located along the coastal plain and in the inter-mountain valleys, such as Solvang which is located within the Santa Ynez Valley. The warmest months of the year in Solvang are July and August, with an average maximum temperature of 92 degrees Fahrenheit, while the coldest months of the year are December and January with an average minimum temperature of 38 degrees Fahrenheit. The climate is semi-arid, with rainfall concentrated in the winter months. Table 4.2-1 summarizes local climatic conditions.

Table 4.2-1 Climatic Conditions in Solvang

Average annual rainfall	22.1 inches
Average maximum temperature (annual)	78 °F
Average minimum temperature (annual)	45 °F
Warmest month(s)	July & August
Coolest month(s)	December & January

Source: U.S. Climate Data 2023.

Note: Data is based on historic climate in Santa Ynez, California, which is adjacent to Solvang's eastern border.

b. Air Pollutants of Primary Concern

The federal and State Clean Air Act (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resource Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for "criteria pollutants" and other pollutants, which are discussed in more detail under Section 4.2.2, *Regulatory Setting*. Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a

factory, etc.) into the atmosphere and include carbon monoxide (CO), VOC (volatile organic gases)/reactive organic gases (ROG),¹ nitric oxide (NO_x), particulate matter, sulfur dioxide (SO₂), and lead (Pb). Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions primarily between ROG and NO_x. Secondary pollutants include oxidants, ozone (O₃), and sulfate and nitrate particulates (smog). The characteristics, sources and effects of criteria pollutants are discussed in the following subsections.

Ozone

Ozone (O₃) is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between NO_x and ROG. ROG is composed of non-methane hydrocarbons (with specific exclusions), and NO_x is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide (NO₂). NO_x is formed during the combustion of fuels, while ROG is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, O₃ readily combines with many different atmosphere components. Consequently, high O₃ levels tend to exist only while high ROG and NO_x levels are present to sustain the O₃ formation process. Once the precursors have been depleted, O₃ levels rapidly decline. Because these reactions occur on a regional rather than local scale, O₃ is considered a regional pollutant. In addition, because O₃ requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. People most at risk from O₃ include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. In addition, people with reduced intake of certain nutrients, such as vitamins C and E, are at greater risk from O₃ exposure. Depending on the level of exposure, O₃ can cause coughing and a sore or scratch throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; aggravate lung diseases such as asthma, emphysema, and chronic bronchitis; and increase the frequency of asthma attacks (USEPA 2023a).

Carbon Monoxide

Carbon Monoxide (CO) is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (USEPA 2023b).

Nitrogen Dioxide

Nitrogen dioxide (NO₂) is a by-product of coal, oil, gas or diesel 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 (NO), but NO reacts rapidly to form NO₂, creating the mixture of NO and NO₂, commonly called NO_x. NO₂ is a reactive, oxidizing gas and an acute irritant capable of

¹ CARB defines VOC and ROG 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, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this EIR.

damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO₂ can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma and children and the elderly are generally at greater risk for the health effects of NO₂ (USEPA 2023c). NO₂ absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of O₃/smog and acid rain.

Sulfur Dioxide

Sulfur Dioxide (SO₂) is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of SO₂ emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO₂ emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO₂ can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO₂ (USEPA 2023d).

Particulate Matter

Suspended atmospheric PM₁₀ (particulate matter with diameter of 10 microns or less) and PM_{2.5} (particulate matter with diameter of 2.5 microns or less) are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mist. Both PM₁₀ and PM_{2.5} are emitted into the atmosphere as by-products of coal, gas, or diesel fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The characteristics, sources, and potential health effects of PM₁₀ and PM_{2.5} can be very different. PM₁₀ is generally associated with dust mobilized by wind and vehicles. In contrast, PM_{2.5} is generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM₁₀ can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling. For PM_{2.5}, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (CARB 2023a).

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial. However, due to the USEPA’s regulatory efforts to remove Pb from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (USEPA 2014). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can

adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered IQ (USEPA 2023e).

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are airborne substances and 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 2023a).

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. People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2023f).

c. Current Air Quality

The Santa Barbara County Air Pollution Control District (SBAPCD) monitors criteria pollutant levels to assure that air quality standards are met, and if they are not met, develops strategies to meet the standards. Depending on if the standards are met or exceeded, the air basin is classified as being in “attainment” or as “non-attainment.” Santa Barbara County is in non-attainment for the 1-hour and 8-hour State standards for ozone and PM₁₀ State standard, as discussed under Section 4.2.2, *Regulatory Setting* (SBAPCD 2023).

More than 250 air quality monitoring stations operated by federal, State, and local agencies comprise the California Ambient Air Monitoring Network, including ten stations in Santa Barbara County (CARB 2023b). The nearest monitoring station to Solvang is the Santa Ynez – Airport Road station that is located within the City of Santa Ynez, approximately two miles east of the city. The Santa Ynez – Airport Road station collects data on ozone. The nearest monitoring station with NO₂, CO, and PM₁₀ data is at Los Flores Canyon #1 station, approximately 9 miles southeast of the city. The nearest monitoring station with PM_{2.5} data is at Lompoc-S H Street station, approximately 17 miles west of the city. The data collected at these stations are generally considered to be representative of the baseline air quality experienced in Solvang. Table 4.2-2 summarizes the annual air quality data for the local airshed. As shown, PM₁₀ measurements exceeded the State and federal standards in 2021 and 2022. In addition, PM_{2.5} measurements exceeded the federal standards in

2020. No other State or federal standards were exceeded at these monitoring stations. Since SO₂ is in attainment with the SCCAB region, it is not monitored at the nearest air monitoring stations and therefore ambient air quality is not reported for this pollutant.

Table 4.2-2 Ambient Air Quality Data

Pollutant	2020	2021	2022
Ozone (ppm), Worst 1-Hour ¹	0.079	0.076	0.070
Number of days of State exceedances (>0.09 ppm) ¹	0	0	0
Ozone (ppm), 8-Hour Average ¹	0.067	0.061	0.064
Number of days of State exceedances (>0.07 ppm) ¹	0	0	0
Number of days of federal exceedances (>0.07 ppm) ¹	0	0	0
Carbon Monoxide (ppm), Highest 8-Hour Average ²	1.00	4.5	0.60
Number of days above CAAQS or NAAQS (>9.0 ppm)	0	0	0
Nitrogen Dioxide (ppm), Highest 1 Hour ²	0.010	0.062	0.012
Number of days above CAAQS (>0.180 ppm)	0	0	0
Number of days above NAAQS (>0.100 ppm)	0	0	0
Particulate Matter <10 microns, µg/m ³ , Worst 24 Hours ²	72.9	50.7	48.1
Number of days above State standard (>50 µg/m ³) ²	6	1	0
Number of days above federal standard (>150 µg/m ³) ²	0	0	0
Particulate Matter <2.5 microns, µg/m ³ , Worst 24 Hours ³	85.6	18.4	20.7
Number of days above federal standard (>35 µg/m ³) ³	8	0	0

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter

¹ Data from the Santa Ynez – Airport Road Station

² Data from the Los Flores Canyon #1 Station

³ Data from the Lompoc-S H Street Station

Source: CARB 2023b

d. Sensitive Receptors

Federal and State AAQS have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases.

Sensitive receptor locations are therefore typically associated with residences, schools, and hospitals. Santa Ynez Valley Cottage Hospital is located at 2050 Viborg Road in Solvang. Additional sensitive receptors in the plan area include residences and K-12 schools located throughout the city. Schools in Solvang are identified in Section 4.13, *Public Services and Recreation*.

4.2.2 Regulatory Setting

The Federal Clean Air Act (CAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the USEPA administers the CAA. Both CAAs are administered by CARB at the State level and at the regional and local levels by air quality management districts. SBAPCD regulates air quality at the regional level for Santa Barbara County.

a. Federal and State Ambient Air Quality Standards

The federal and state governments have authority under the federal and state CAA to regulate emissions of airborne pollutants and have established AAQS for the protection of public health. An air quality standard is defined as “the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health” (CARB 2023c.) The USEPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent in California. Federal and state AAQS have been established for six criteria pollutants: O₃, CO, NO₂, sulfur dioxide, PM₁₀, PM_{2.5}, and lead. AAQS are designed to protect those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases (USEPA 2023g). In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride (CARB 2023d). Table 4.2-3 lists the current NAAQS as well as the CAAQS for regulated pollutants.

Table 4.2-3 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	CAAQS
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	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	–	–
	24-Hour	–	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM ₁₀	Annual	–	20 µg/m ³
	24-Hour	150 µg/m ³	50 µg/m ³
PM _{2.5}	Annual	12 µg/m ³	12 µg/m ³
	24-Hour	35 µg/m ³	–
Lead	30-Day Average	–	1.5 µg/m ³
	3-Month Average	0.15 µg/m ³	–

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m³ = micrograms per cubic meter

Source: USEPA 2023g

USEPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the AAQS standards are classified as nonattainment areas. The NAAQS (other than O₃, PM₁₀, PM_{2.5}, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O₃, PM₁₀, and PM_{2.5} are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period. The attainment status for Santa Barbara County is included in Table 4.2-4.

Pursuant to the CAA, USEPA designates areas as attainment, nonattainment, or maintenance for each criteria pollutant based on whether the NAAQS has been achieved. Whether an area meets the state and federal standards is based on air quality monitoring data. Areas that are unclassified have insufficient monitoring data for a specific pollutant to determine attainment or nonattainment status, although unclassified areas are typically treated as attainment for a specific pollutant. Since attainment and nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the state standards PM₁₀ and unclassified for the federal standards PM₁₀ (CARB 2022).

Table 4.2-4 Attainment Status of Criteria Pollutants in Santa Barbara County

Pollutant	State Designation	Federal Designation
O ₃	Nonattainment	Unclassified/Attainment
PM ₁₀	Nonattainment	Unclassified/Attainment
PM _{2.5}	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
NO ₂	Attainment	Unclassified/Attainment
SO ₂	Attainment	Unclassified/Attainment

O₃ = Ozone; NO₂ = nitrogen dioxide; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = particulate matter 10 microns in diameter or less; PM_{2.5} = particulate matter 2.5 microns or less in diameter.

Sources: CARB 2022, USEPA 2023h

b. Federal Regulations

The USEPA is responsible for enforcing the federal CAA. The USEPA is also responsible for establishing the NAAQS. The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

c. State Regulations

California Clean Air Act

The CCAA was enacted in 1988 (California Health & Safety Code (H&SC) Section 39000 et seq.). Under the CCAA, the state has developed the CAAQS, which are generally more stringent than the NAAQS. Table 4.2-3 lists the current state standards for regulated pollutants. In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to the federal CAA, the CCAA classifies specific geographic areas as either “attainment” or “nonattainment” areas for each pollutant, based on the comparison of measured data within the CAAQS.

California Air Toxics Program

A TAC is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure.

In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air quality monitoring network, and develop any additional air toxic control measures needed to protect children's health.

State Implementation Plan

The SIP is a collection of documents that set forth the state's strategies for achieving the AAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations at 40 Code of Federal Regulations 52.220.

The 2022 Santa Barbara County Ozone Plan is the SIP for Santa Barbara County. The 2022 Ozone Plan (2022 Plan) accommodates growth by projecting the growth in emissions based on different indicators. For example, population forecasts adopted by SCCAB are used to forecast population-related emissions. Through the planning process, emissions growth is offset by basin-wide controls on stationary, area, and transportation sources of air pollution.

In addition, the following California Code of Regulations would be applicable to the 2045 General Plan:

- **Engine Idling.** In accordance with Section 2485 of Title 13 of the California Code of Regulations, the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to five minutes at any location.

- **Emission Standards.** In accordance with Section 93115 of Title 17 of the California Code of Regulations, operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

d. Local Regulations

SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT

As the local air quality management agency, the SBCAPCD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the SCCAB is classified as being in “attainment” or “nonattainment.” In areas designated as non-attainment for one or more air pollutants, a cumulative air quality impact exists for those air pollutants, and the human health impacts described in Section 2.1, *Environmental and Regulatory Setting*, are already occurring in that area as part of the environmental baseline condition.

Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The *2001 Clean Air Plan* (2002) was the first plan prepared by SBCAPCD and established specific planning requirements to maintain the state one-hour O₃ standard. In 2006, CARB revised the CAAQS and added an 8-hour average to the O₃ standard. Both components of the standard must now be met before CARB can designate an area to be in attainment. The most recent *2022 Ozone Plan* was adopted by SBCAPCD in December 2022 and was the seventh update to the *2001 Clean Air Plan*. The *2022 Ozone Plan* addresses the state O₃ standards only because SBCAPCD is designated “attainment” for the federal 8-hour O₃ standards, including the most recent standard of 0.070 ppm promulgated by the United States EPA in 2015.

To minimize potential impacts from Project emissions, the SBCAPCD implements rules and regulations for emissions that may be generated by various uses and activities. The rules and regulations detail pollution-reduction measures that must be implemented during construction and operation of Projects. Rules and regulations relevant to the Project include the following:

- **Rule 345 (Control of Fugitive Dust from Construction and Demolition Activities).** This rule establishes fugitive dust control requirements for any activity associated with construction or demolition of a structure or structures.
- **Rule 323.1 (Architectural Coatings).** This rule establishes volatile organic content limits for architectural coatings that are manufactured, blended, repackaged, supplied, sold, or offered for sale within the SBCAPCD. Rule 323.1 limits the volatile organic content to 50 grams per liter for flat coatings and 100 grams per liter for nonflat coatings and traffic marking coatings.
- **Rule 329 (Cutback and Emulsified Asphalt Paving Materials).** This rule establishes ROC content limits pertaining to the manufacture, application, and sale of cutback and emulsified asphalt materials for paving, construction, and maintenance of streets, highways, parking lots, and driveways.

4.2.3 Impact Analysis

a. Significance Thresholds and Methodology

Significance Thresholds

This analysis follows the guidance and methodologies recommended in Appendix G of the *State CEQA Guidelines* and SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (2022a). 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 in non-attainment under an applicable federal or state ambient air quality standard;
- c) Expose sensitive receptors to substantial pollutant concentrations; and/or
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

According to the SBCAPCD *Scope and Content of Air Quality Sections in Environmental Documents*, 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) less than 240 pounds per day of ROC;
- b) Emit from all project sources (both stationary and mobile) less than 240 pounds per day of NO_x;
- c) Emit from all project sources (both stationary and mobile) less than 80 pounds per day of PM₁₀;
- d) Emit less than 25 pounds per day of ROC from motor vehicle trips only;
- e) Emit less than 25 pounds per day of NO_x from motor vehicle trips only; and
- f) Not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); or
- g) Not exceed the public notification health risk thresholds adopted by the SBCAPCD of 10 excess cancer cases in a million for cancer risk or a Hazard Index of more than 1.0 for non-cancer risk; or
- h) Be consistent with the latest adopted in federal and state air quality plans for Santa Barbara County

The SBCAPCD *Scope and Content of Air Quality Sections in Environmental Documents* state that due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards. As such, CO hotspot analyses are not required.

Plan Consistency

Consistency with land use and population forecasts in local and regional plans, including the 2022 Ozone Plan (previously known as the Clean Air Plan), is required under CEQA for all projects.

The 2022 Ozone Plan relies primarily on the land use and population projections provided by SBCAG and CARB on-road emissions forecast as a basis for vehicle emission forecasting (SBCAPCD 2022b). The 2022 Ozone Plan uses SBCAG's Countywide Regional Transportation Demand Model for on-road

mobile source emissions estimates and SBCAG’s socio-economic projections contained in the most recent RTP/SCS to form the basis for some stationary and area source growth forecasts.

The SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* states that any general plan amendment that would provide for increased population growth above that forecasted in the most recently adopted Ozone Plan is inconsistent with the Ozone Plan and may have a significant impact on air quality (SBCAPCD 2022a).

Toxic Air Contaminants

The USEPA considers those pollutants that could cause cancer risks between one in 10,000 (1.0×10^{-4}) and one in one million (1.0×10^{-6}) for risk management. Proposition 65 (California Health and Safety Code Section 25249.6), enacted in 1986, prohibits a person in the course of doing business from knowingly and intentionally exposing any individual to a chemical that has been listed as known to the state to cause cancer or reproductive toxicity without first giving clear and reasonable warning. For a chemical that is listed as a carcinogen, the “no significant risk” level under Proposition 65 is defined as the level that is calculated to result in not more than one excess case of cancer in 100,000 individuals (1.0×10^{-5}). The SBCAPCD recommends the use of this risk level (also reportable as 10 in one million) as the significance threshold for TACs. The SBCAPCD also recommends that the non-carcinogenic hazards of TACs should not exceed a hazard index (the summation of the hazard quotients for all chemicals to which an individual would be exposed) of 1.0 for either chronic or acute effects (SBCAPCD 2022a).

Methodology

The assessment of potential environmental impacts related to air quality is based on a review of regional air quality plans and data within the 2045 General Plan. As a programmatic document, this EIR presents a citywide assessment of the 2045 General Plan. The baseline for analysis used in this section and throughout this EIR is the existing condition. Table 4.2-5 summarizes the land use assumptions used in the California Emissions Estimator Model (CalEEMod):

Table 4.2-5 CalEEMod Land Use Assumptions

Land Use Categories	Existing (2015)	Proposed Project
Residential – Mid-Rise Apartments ¹	769 Dwelling Units	918 Dwelling Units
Residential – Single Family	1,797 Dwelling Units	2,145 Dwelling Units
Commercial – General Office Building ¹	1,887,795 Square Feet	2,011,230 Square Feet
Recreational – Hotel	N/A	50 Rooms
Parking – Enclosed Structure	N/A	24 Spaces
Parking – Parking Lot	N/A	226 Spaces

N/A = not applicable.

¹ Based on existing and proposed project employee projections through an assumption of 585 square feet of commercial space per employee (Natelson Paper 2023).

Construction Emissions

Construction-related emissions are temporary but may still cause adverse air quality impacts. Construction of development associated with the 2045 General Plan would generate temporary emissions from three primary sources: the operation of construction equipment (e.g., scrapers, loaders, dump trucks, etc.); ground disturbance during site preparation and grading, which creates

fugitive dust; and the application of asphalt, paint, or other oil-based substances. At this time, there is not sufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts. Rather, construction impacts for the 2045 General Plan are discussed qualitatively.

Operational Emissions

Operational emissions were estimated using CalEEMod, version 2022.1. CalEEMod uses default and project-specific information, including the project’s land uses, square footage for different uses (e.g., multi-family residence, hotel, etc.), and location, to estimate a project’s operational emissions. Land use assumptions are included in Table 4.2-5.

Operational emissions would be comprised of mobile source emissions, energy emissions, and area source emissions. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coating. Default CalEEMod assumptions for fireplaces were used to estimate hearth emissions from the 2045 General Plan. Emissions attributed to energy use include electricity and natural gas consumption for space and water heating. The energy use estimates account for the 2019 Building Energy Efficiency Standards (Title 24). This is a conservative assumption since the energy use estimates do not account for potential energy efficiency measures required by the subsequent Title 24 update in 2022, as well as anticipated future updates. Mobile source emissions were estimated using vehicle activity data presented in Section 4.1.14, *Transportation*. Table 4.2-6 shows average daily VMT for the 2015 existing condition and proposed project conditions.

Table 4.2-6 Vehicle Activity Data (Daily) for the Proposed Project

Activity	Existing (2015)	Proposed Project
VMT	79,225	98,343

VMT = Vehicle Miles Traveled
 Source: DKS 2023

b. Projects Impacts and Mitigation Measures

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

Impact AQ-1 GROWTH RESULTING FROM THE 2045 GENERAL PLAN IS ANTICIPATED AND WOULD NOT CONSTITUTE SUBSTANTIAL UNPLANNED POPULATION GROWTH. THE SANTA BARBARA COUNTY ASSOCIATION OF GOVERNMENTS WOULD UPDATE THEIR GROWTH PROJECTIONS TO BE CONSISTENT WITH THE 2045 GENERAL PLAN DURING THE NEXT PLANNING CYCLE. THROUGH MITIGATION MEASURE AQ-1, THE PROJECT WOULD INCORPORATE SBCAPCD STANDARD FUGITIVE DUST CONTROL MEASURES THAT ARE REQUIRED BY THE SBCAPCD GUIDELINES TO BE CONSISTENT WITH THE CLEAN AIR PLAN. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

The SBCAPCD Guidelines state that a project is consistent with the Clean Air Plan if its direct and indirect emissions have been accounted for in the Clean Air Plan’s emissions forecast assumptions and if it would incorporate the standard fugitive dust control measures recommended by SBCAPCD during construction activities. The 2022 Ozone Plan’s direct and indirect emissions inventory for the County as a whole is reliant on population projections provided by the Santa Barbara County Association of Governments (SBCAG). SBCAG generates population projections based on local

General Plans. In this case, SBCAG utilized population projections contained in the City of Solvang General Plan, which are based on existing and anticipated land uses in the city. As discussed further in Section 4.12, *Population and Housing*, the project would lead to an increase of approximately 1,187 residents, increasing Solvang' total population to 7,042, which is above SBCAG's 2045 population forecast of 6,300 residents. This growth, however, would not be unplanned since it is contemplated by the 2045 General Plan. Although projected housing and population growth in Solvang in 2045 exceeds SBCAG's 2045 forecasts, SBCAG would update their growth projections to be consistent with the 2045 General Plan during the next planning cycle. Therefore, because the 2045 General Plan is designed for planned and orderly growth, as mandated by the State, growth impacts would be less than significant.

As stated above, per SBCAPCD Guidelines to be consistent with the Clean Air Plan, a project must incorporate the standard fugitive dust control measures recommended by SBCAPCD during construction activities. These are included as Mitigation Measure AQ-1, and impacts would be less than significant with mitigation.

Mitigation Measures

AQ-1 SBCAPCD's Construction Impact Mitigation: PM₁₀ Mitigation Measures

The applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by SBCAPCD to reduce fugitive dust emissions. Emission reduction measures will include, at a minimum, the following measures:

- During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site and from exceeding SBCAPCD's limit of 20 percent opacity for greater than three minutes in any 30-minute period. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 miles per hour (mph). Reclaimed water shall be used whenever possible. However, reclaimed water shall not be used in or around crops for human consumption.
- The amount of disturbed area shall be minimized.
- On-site vehicle speeds shall be no greater than 15 mph when traveling on unpaved surfaces.
- A track-out prevention device shall be installed and operated 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 stockpiling of material is involved, soil stockpiled for more than one day shall be covered, kept moist, or treated with soil binders to prevent dust generation.
- After clearing, grading, earth moving or excavation is completed, the disturbed area shall be treated 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 driveways and sidewalks to be paved/surfaced shall be completed as soon as possible.
- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. 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 SBCAPCD prior to grading/building permit issuance and/or map clearance.

- The project applicant shall comply with SBCAPCD Rule 345: Control of Fugitive Dust from Construction and Demolition Activities, including all applicable standards and measures therein.

Significance After Mitigation

With implementation of Mitigation Measure AQ-1, the project would be consistent with the Clean Air Plan per the SBCAPCD guidelines through implementation of the required standard fugitive dust control measures. Therefore, impacts would be less than significant with mitigation.

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 AQ-2 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE 2045 GENERAL PLAN WOULD GENERATE CONSTRUCTION AND OPERATIONAL-RELATED EMISSIONS. SUCH EMISSIONS MAY RESULT IN ADVERSE IMPACTS TO REGIONAL AIR QUALITY. IMPLEMENTATION OF POLICIES IN THE PROPOSED 2045 GENERAL PLAN UPDATE AND COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE CONSTRUCTION AND OPERATIONAL EMISSIONS. OPERATIONAL EMISSIONS GENERATED FROM THE 2045 GENERAL PLAN WOULD NOT EXCEED SBCAPCD OPERATIONAL EMISSIONS THRESHOLDS. HOWEVER, SPECIFIC PROJECT-LEVEL DETAILS FOR CONSTRUCTION ARE UNKNOWN AT THIS LEVEL OF PLANNING AND INDIVIDUAL PROJECTS MAY EXCEED SBCAPCD THRESHOLDS. THEREFORE, IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction

Construction of development facilitated by the 2045 General Plan may involve activities that result in air pollutant emissions. Construction activities such as demolition, grading, construction worker travel, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants, particularly during site preparation and grading. The extent of daily emissions, particularly ROC and NO_x emissions, generated by construction equipment, would depend on the quantity of equipment used and the hours of operation for each project. The extent of PM_{2.5} and PM₁₀ emissions would depend upon the following factors: 1) the amount of disturbed soils; 2) the length of disturbance time; 3) whether existing structures are demolished; 4) whether excavation is involved; and 5) whether transporting excavated materials offsite is necessary. Dust emissions can lead to both nuisance and health impacts.

SBCAPCD does not currently have quantitative thresholds of significance for plan-level construction that would apply to the proposed project. However, CEQA requires that the short-term impacts such as exhaust emissions from construction equipment and fugitive dust generation during grading be analyzed. If an individual project's construction emissions fall below the project-level thresholds, the project's impacts on regional air quality would be individually and cumulatively less than significant. According to the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents*, it recommends quantification of construction-related emissions and suggest a 25 tons per year threshold for ROC or NO_x as a guideline for determining the significance of construction impacts (SBCAPCD 2022a). This is a limit that requires offsets if the construction activity is for a project that requires SBCAPCD permits and also provides guidance for other construction projects involving standard grading and building activities. In addition, standard dust control measures must be implemented for any discretionary project involving earthmoving activities, regardless of size or

duration. According to the SBCAPCD, proper implementation of these required measures reduces fugitive dust emissions to a level that is less than significant (SBCAPCD 2022a).

Construction of development envisioned under the 2045 General Plan would temporarily increase air pollutant emissions, possibly creating localized areas of unhealthy air pollution concentrations or air quality nuisances. To promote clean air quality to protect public health and safety and to minimize adverse air quality impacts, the 2045 General Plan includes Policies ENV-8.2, ENV-8.3, and ENV-8.4 in the *Environmental and Sustainability Element*, which would minimize emissions of air containments associated with buildout of the 2045 General Plan. These policies are listed below.

- **Policy ENV-8.2: Particulate Emissions Reduction.** The City shall work with the SBCAPCD to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
- **Policy ENV-8.3: Air Quality Mitigation Measures.** The City shall ensure all air quality mitigation measures are feasible, implementable, and cost effective.
- **Policy ENV-8.4: Mitigation Measures.** The City shall require new development and redevelopment to incorporate measures from the most recent SBCAPCD Clean Air Plan to reduce air quality impacts to a less than significant level.

In addition, development projects would be required to adhere to SBCAPCD's fugitive dust control measures, which are listed above in Impact AQ-1.

While consistency with SBCAPCD's Guidelines through implementation of fugitive dust control measures would reduce impacts from construction emissions to less than significant for the majority of projects, specific project-level details are unknown at this level of planning and individual projects may still exceed SBCAPCD thresholds. Therefore, construction impacts would be significant and unavoidable.

Operation

Reasonably expected future development from the 2045 General Plan would generate long-term regional air pollutant emissions, which would result from mobile sources (motor vehicle exhaust) and area sources, such as consumer products and natural gas combustion. Emissions from motor vehicle exhaust were estimated using VMT data for existing conditions (2015), and proposed project (2045). The impact analysis is based on comparing existing conditions to future with project conditions. Table 4.2-6 under *Methodology* shows the estimated regional daily VMT associated with all vehicle trips with the Solvang study area. As shown in Section 4.14, *Transportation*, implementation of the 2045 General Plan would result in 22.18 VMT per capita and 21.52 VMT per employee. Total VMT would increase from existing conditions that can be attributed to regional growth, as well as the increases in households and employment in the Solvang study area, which are described in Section 4.12, *Population and Housing*.

Operation of development facilitated by the 2045 General Plan would generate criteria air pollutant emissions associated with area sources (e.g., architectural coatings, consumer products, and landscaping equipment), energy sources (i.e., use of natural gas for space and water heating), and mobile sources (i.e., vehicle trips to and from the project site). The 2045 General Plan would increase residential and commercial land uses under 2045 buildout. Operational emissions were based on the project characteristics described in Section 2, *Project Description*, and the existing and buildout year scenario estimates of the 2045 General Plan land uses within the Solvang study area in

Table 4.2-5. In addition, mobile vehicle trip data and reasonably anticipated development estimates presented in Table 4.2-6 were used to generate estimates of daily regional emissions.

Table 4.2-7 shows the net difference in operational emissions from the existing conditions and proposed project. As shown in Table 4.2-7, regional thresholds would not be exceeded as a result of the development facilitated by the 2045 General Plan. The 2045 General Plan would increase area and energy source emissions when compared to existing conditions. Area emissions would increase through the use of consumer products, which is the predominant contributor to operational ROC emissions. The use of consumer products varies by land use type and is typically analyzed on a project-specific scale. Energy emissions would increase through consumption of electricity and natural gas from the development facilitated by the 2045 General Plan over existing land uses. While VMT is expected to increase over time as a result of the buildout of the 2045 General Plan, NO_x and CO emissions from mobile sources are generally expected to decrease as a result of statewide emissions reductions measures. The VMT increase would result in a minor increase in PM emissions, which primarily comes from brake and tire wear. None of the criteria pollutant increases from the 2045 General Plan buildout compared to the existing uses would exceed SBCAPCD thresholds. Therefore, the 2045 General Plan operations would be less than significant.

Table 4.2-7 Estimated Operational Emissions

Emissions Source	Maximum Daily Emissions (pounds per day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Existing (2015)						
Mobile	2	28	132	1	56	15
Area	170	2	227	<1	<1	<1
Energy	2	34	19	<1	3	3
Total	174	63	379	1	59	18
Proposed Project						
Mobile	1	11	82	<1	69	18
Area	195	2	266	<1	<1	<1
Energy	2	40	22	<1	3	3
Total	198	53	370	1	73	21
Net Daily Emissions						
Change from Existing Conditions	24	(10)	(9)	<1	14	3
Threshold (area + energy + mobile)	240	240	N/A	N/A	80	N/A
Threshold Exceeded?	No	No	N/A	N/A	No	N/A
Threshold (mobile only)	25	25	N/A	N/A	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A	N/A	N/A

ROC = reactive organic compounds, NO_x = nitrogen oxides, CO = carbon monoxide, SO₂ = sulfur dioxide, PM₁₀ = particulate matter 10 microns in diameter or less, PM_{2.5} = particulate matter 2.5 microns or less in diameter

Notes: All emissions modeling was completed using CalEEMod. See Appendix C for modeling results. Some numbers may not sum precisely due to rounding. Emission data is pulled from “mitigated” results, which account for compliance with regulations (including SBCAPCD Rule 323.1) and project design features. Emissions presented are the highest of the winter and summer modeled emissions.

Mitigation Measures

Refer to Impact AQ-1 for Mitigation Measure AQ-1.

Significance After Mitigation

While consistency with SBCAPCD's Guidelines through implementation of fugitive dust control measures would reduce impacts from construction emissions to less than significant for the majority of projects, specific project-level details are unknown at this level of planning and individual projects may still exceed SBCAPCD thresholds. Therefore, construction impacts would be significant and unavoidable.

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

Impact AQ-3 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN COULD RESULT IN CONSTRUCTION ACTIVITY THAT COULD PRODUCE TOXIC AIR CONTAMINANT EMISSIONS IN PROXIMITY TO RESIDENTIAL RECEPTORS. MITIGATION MEASURE AQ-1 WOULD REQUIRE LARGE CONSTRUCTION PROJECTS TO USE EQUIPMENT MEETING CARB TIER 3 OR HIGHER FOR OFF-ROAD HEAVY-DUTY DIESEL ENGINES, WHICH WOULD REDUCE TOXIC AIR CONTAMINANT EMISSIONS. HOWEVER, TIER 3 OR HIGHER EMISSION STANDARD EQUIPMENT OR LEVEL 3 DIESEL PARTICULATE FILTERS CANNOT BE GUARANTEED TO BE COMMERCIALY AVAILABLE. THEREFORE, IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction-related activities facilitated by the 2045 General Plan would result in DPM exhaust emissions from off-road, heavy-duty diesel equipment associated with site preparation (e.g., excavation, grading, clearing), building construction, and other construction activities. DPM is identified as a TAC by CARB. The potential cancer risk from the inhalation of DPM (discussed in the following paragraphs) outweighs the potential non-cancer health impacts (CARB 2023a) and is therefore the focus of this analysis.

Generation of DPM from construction typically occurs in a single area for a short period. Future construction would occur over approximately 21 years (assuming a buildout year of 2045) on lots of two to five acres, but use of diesel-powered construction equipment in any one area would likely occur in less than one year for an individual project and would cease when construction is completed in that area. It is impossible to quantify risk without identified specific project details and locations.

The extent of DPM emissions from any individual construction project depend upon the following factors: (1) the amount of disturbed soils; (2) the length of disturbance time; (3) whether existing structures are demolished; (4) whether excavation is involved; and (5) whether transporting excavated materials off site is necessary. DPM emissions would be reduced during the other phases of individual project construction because activities such as building construction and architectural coating require less diesel-fueled construction equipment.

As discussed in Section 4.2.3.a, SBCAPCD has not established plan-level significance thresholds for construction air pollutant emissions, and SBCAPCD CEQA guidance does not require preparation of a health risk assessment for short-term construction emissions. At this time, development facilitated by the 2045 General Plan does not have sufficient detail (e.g., construction schedule, amount of soil export, specific buildout parameters) to allow for project-level analysis given the programmatic nature of the plan. As a result, it would be speculative to analyze project-level impacts. In addition, SBCAPCD does not recommend project-level emissions thresholds for construction activity.

Therefore, a more qualitative approach to characterizing construction-related air emissions has been employed for this analysis.

According to the OEHHA, construction of individual projects lasting longer than 2 months could potentially expose sensitive receptors to substantial pollutant concentrations and therefore could result in potentially significant health risk impacts.

Individual residential development projects within 1,000 feet of sensitive receptors, that have construction durations longer than two months, and are larger than single-family residences, ADUs, or duplexes can result in potentially significant health risk impacts when Tier 3 or higher construction equipment, which results in substantially lower TAC emissions than older construction equipment, is not utilized. SBCAPCD recommends diesel equipment meeting the CARB Tier 3 or higher emission standards be used in place of older construction equipment to the maximum extent feasible (SBCAPCD 2022a). As a result, the construction of certain individual housing development projects – those with three or more units and a construction duration longer than two months that take place within 1,000 feet of sensitive receptors – could result in potentially significant health risk impacts if construction equipment does not meet CARB Tier 3 or higher for off-road heavy-duty diesel engines. Therefore, this impact would be potentially significant, requiring mitigation.

Operation

Development facilitated by the project could accommodate a net increase of approximately 497 additional residential units and 211 new jobs in Solvang. CARB's guidelines do not designate residential uses as land uses that generate substantial TAC emissions. As a result, this analysis considers quantities of hazardous TACs that could be generated by new residential uses (e.g., cleaning solvents, paints, landscape pesticides, etc.) as below thresholds warranting further study under the California Accidental Release Program. Development facilitated by the 2045 General Plan in accordance with land use and zoning regulations would not site land uses that typically generate TAC near sensitive receptors. Additionally, if the proposed commercial and retail uses site a new stationary TAC source, like an emergency generator, then said stationary source would be required to receive a permit. The permitting process would ensure that the stationary source does not present a health risk to existing nearby sensitive receptors. Therefore, the 2045 General Plan would not result in exposure of existing sensitive receptors to significant carcinogenic or toxic air contaminants and would be consistent with CARB and SBCAPCD guidelines.

To minimize health risks to sensitive receptors located near roadways, the 2045 General Plan includes the following proposed goal and policies that aim to improve air quality and minimize exposure to TAC:

- **Policy MOB-1.12: Air Quality Impact Reduction.** The City shall work to reduce the air quality impacts of motor vehicle use by reducing traffic congestion and promoting efforts to reduce fossil fuel-based motor vehicle use, including support for a citywide network of all electric charging station types (e.g., Level 1, Level II, Tesla, Mega-charging).
- **Policy ENV-9.6: City Fleet and Equipment.** The City shall work toward converting 100 percent of non-emergency City vehicles to electric, hybrid, flex-fuel, or alternative fuels. In addition, the City shall replace gas-powered mowers and other equipment with electric or hybrid models and to use alternative carbon-free models where possible.

Mitigation Measures

The following mitigation measure would be implemented due to potentially significant health risk impacts from TAC exposure during project construction.

AQ-1 Construction Equipment Exhaust Control Measures

For individual residential projects facilitated by the 2045 General Plan that would develop three or more units, would involve demolition, mass grading, or excavation and trenching phases longer than two months and would be located within 1,000 feet of existing sensitive receptors, the City shall enforce a project specific Condition of Approval requiring off-road heavy-duty diesel engines to meet CARB-certified Tier 3 or higher emission standards or employ CARB-certified Level 3 diesel particulate filters to the extent that this equipment is commercially available. "Commercially available" shall be defined as the availability of required equipment in geographic proximity to the project site and within a reasonable timeframe relative to critical path construction timing. If Tier 3 or higher emission standard equipment or Level 3 diesel particulate filters are not commercially available, documentation shall be provided by the project applicant to the City stating that Tier 3 equipment or higher emission standard or Level 3 diesel particulate filters are not commercially available with supporting evidence from the contractor. If CARB-certified Level 3 diesel particulate filters are utilized, they shall be kept in working order and maintained in operable condition according to manufacturer's specifications, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure AQ-1 would reduce potential residual health risk impacts associated with exposure of sensitive receptors to substantial pollutant concentrations of DPM and TACs to the extent feasible. However, as Tier 3 or higher emission standard equipment or Level 3 diesel particulate filters cannot be guaranteed to be commercially available, impacts are conservatively assessed as significant and unavoidable.

Threshold 4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?
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Impact AQ-4 FUTURE DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN WOULD NOT CREATE OBJECTIONABLE ODORS THAT COULD AFFECT A SUBSTANTIAL NUMBER OF PEOPLE OR EXPOSE FUTURE RESIDENTS TO ODORS THAT WOULD PRODUCE A PUBLIC NUISANCE OR HAZARD. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The occurrence and severity of objectionable odors depend on a number of factors, including the nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of the receiving location. Although objectionable odors seldom cause physical harm, they can be perceived as a nuisance, cause distress among the public, and result in citizen complaints.

The 2045 General Plan would facilitate the development of additional housing units in a primarily urbanized area with existing residential and commercial land uses. Construction activities for development forecasted in accordance with the 2045 General Plan may produce temporary odors. Examples of potential odors produced by construction activities include concentrations of unburned hydrocarbons from construction equipment tailpipes and reactive organic gases/compounds from architectural coatings. Such odors generally disperse rapidly from individual project sites, occur at magnitudes that would not affect substantial numbers of people, and would be limited to the temporary construction period.

The SBCAPCD *Scope and Content of Air Quality Sections in Environmental Documents (2022)* states that certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. Examples include fast food restaurants, bakeries, and coffee roasting facilities. In addition, wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The 2045 General Plan would not create objectionable odors affecting a substantial number of people or expose future residents to odor in concentrations that would produce a public nuisance or hazard. In addition, it is likely project odors would not be distinguishable due to vehicle exhaust on State Route 246. Therefore, operational odor impacts would be less than significant.

Mitigation Measures

No mitigation is required because this impact would be less than significant.

4.2.4 Cumulative Impacts

Regional cumulative impacts consider the City-wide impacts together with similar impacts of future development in and around Santa Barbara County. The general approach to cumulative impact analysis used in this EIR is discussed in Section 3, *Environmental Setting*. Project related air pollution may combine with other cumulative projects to violate criteria pollutant standards if the existing background sources cause nonattainment conditions. Air districts manage attainment of the criteria pollutant standards by adopting rules, regulations, and attainment plans, which comprise a multifaceted programmatic approach to such attainment.

The geographic scope for analyzing cumulative air quality impacts is the SCCAB. The SCCAB is designated a nonattainment area for the ozone CAAQS and the PM₁₀ CAAQS. The SCCAB is in attainment of all other NAAQS and CAAQS. Therefore, cumulative air quality impacts related to PM₁₀ and ozone are potentially significant.

As described under Impact AQ-1, the SBCAPCD's approach for assessing cumulative impacts is based on consistency with the latest adopted Ozone Plan. The 2045 General Plan would result in exceedance of the population forecasts for the City of Solvang in the 2022 Ozone Plan. However, this growth would not be unplanned since it is contemplated by the 2045 General Plan. SBCAG would update their growth projections to be consistent with the 2045 General Plan during the next planning cycle. Therefore, the 2045 General Plan is designed for planned and orderly infill growth to meet housing goals, as mandated by the State. Additionally, SBCAPCD standard dust control measures are required for all earthmoving activities in the SBCAPCD's jurisdiction and would be implemented through Mitigation Measure AQ-1, which would reduce Citywide emissions of PM₁₀ from construction facilitated by the 2045 General Plan. Therefore, the 2045 General Plan would not conflict with or obstruct implementation of the 2022 Ozone Plan.

As identified under Impact AQ-2, the 2045 General Plan would not exceed SBCAPCD operational emissions thresholds for ROC, NO_x, and PM₁₀. However, at this stage of planning, project-specific details regarding construction activity are currently unknown and could potentially exceed SBCAPCD thresholds after mitigation. Therefore, the 2045 General Plan would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment. As shown under Impact AQ-3, construction activity may result in a potentially significant impact related to DPM and TAC exposure within the City. Health risk impacts are localized to the immediate vicinity of DPM and TAC sources, such that people affected by construction-related TAC emissions generated at one housing site would likely not be affected by construction-related TAC emissions generated at another housing site should construction activities occur simultaneously. Discussion of

these impacts considers the cumulative nature of the pollutants in the region; for example, the cancer risk and non-cancer risk thresholds have been set pursuant to existing cancer risks in the area and exceeding those thresholds would be considered a cumulative impact. Implementation of Mitigation Measure AQ-1 would reduce concentrations of DPM and TAC emissions from construction activity associated with future development under the 2045 General Plan. However, Tier 3 or higher emission standard equipment or Level 3 diesel particulate filters cannot be guaranteed to be commercially available. Therefore, the project's contribution to cumulative air quality impacts related to these pollutants would result in a cumulatively considerable impact.

Cumulative projects would adversely affect sensitive receptors from odor emissions if cumulative projects were typical odor-producing land uses. Construction of cumulative projects would result in construction equipment-related odors; however, the temporary nature of construction would ensure less than significant cumulative odor impacts. In addition, it is likely individual project odors would not be distinguishable due to vehicle exhaust on State Route 246. Therefore, operational odor impacts would be less than significant.

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