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4.2 Air Quality

The section analyzes the potential air quality impacts of project construction and operation, including impacts to nearby sensitive receptors. Construction and operational emissions associated with project buildout were calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1. Results were compared to Santa Barbara County Air Pollution Control District (SBCAPCD) thresholds.

4.2.1 Environmental Setting

Climate and Topography

The project site is located in the South Central Coast Air Basin (SCCAB), which includes all of San Luis Obispo, Santa Barbara, and Ventura Counties. The 2022 Ozone Plan for Santa Barbara County describes the air quality setting for the county in detail, including the local climate and meteorology, current and projected air quality, and the regulatory framework for the management of air quality. The climate 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. The Mediterranean climate of the Goleta region produces moderate average temperatures although extreme temperatures can be reached in the winter and summer. The warmest months of the year are August and September, and the coldest month of the year is January. The annual average maximum temperature is 69.3 degrees Fahrenheit (°F), while the annual average minimum temperature is 48.6°F. Rainfall is concentrated in the winter months. Local climate conditions are summarized below in Table 4.2-1.

Table 4.2-1 Goleta Climate Conditions

Temperature Condition	Amount
Average annual rainfall	16.3 inches
Annual average maximum temperature	69.3°F
Annual average minimum temperature	48.6°F
Warmest month	August/September
Coolest month	January
Annual mean temperature	59°F

°F = degrees Fahrenheit
Note: Averages are based on the period of record from January 2, 1941, to June 9, 2016 at the Santa Barbara Municipal Airport, approximately 0.25 miles west of the project site.
Source: Western Regional Climate Center 2016

Temperature inversions (warmer air on top of cooler air) is a common meteorological condition in the area. Inversions in Goleta are formed by the more rapid cooling of air near the ground at night, especially during the winter. This type of inversion is typically seen at lower elevations and is generally accompanied by stable air. Inversions limit the dispersal of air pollutants within the regional airshed because more stable air conditions (i.e., low wind speeds and uniform temperatures) result in lower rates of pollutant dispersion.

Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter with 10 microns in diameter or less (PM_{10}), particulate matter with 2.5 microns or less ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Ozone (O_3) is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic compounds (ROC) and nitrogen oxides (NO_X). These pollutants can have adverse impacts on human health at certain levels of exposure. The following subsections describe the characteristics, sources, and health and atmospheric effects of air pollutants.

Ozone

Ozone (O_3) is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between NO_X and ROC/volatile organic compounds (VOC).[1] ROC 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 NO_2. NO_X is formed during the combustion of fuels, while ROC is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, O_3 readily combines with many different atmosphere components. Consequently, high O_3 levels tend to exist only while high ROC and NO_X levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant. In addition, because O_3 requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors (United States Environmental Protection Agency [United States EPA] 2022a). Depending on the level of exposure, O_3 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; and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.

Carbon Monoxide

Carbon monoxide (CO) is a localized pollutant found in high concentrations 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. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces throughout the year. 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 (United States EPA 2022a).

[1] California Air Resources Board (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 report.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) 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 (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2, commonly called NO_X. NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 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 NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, such as children and the elderly are generally at greater risk for the health effects of NO_2 (United States EPA 2022a). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of O_3/smog and acid rain.

Sulfur Dioxide

Sulfur dioxide (SO_2) is included in a group of highly reactive gases known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 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 SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (United States EPA 2022a).

Particulate Matter

Suspended atmospheric PM_{10} and $PM_{2.5}$ are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are emitted into the atmosphere as by-products of 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 PM_{10} and $PM_{2.5}$ can be very different. PM_{10} 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. PM_{10} 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 United States EPA 's regulatory efforts to remove lead 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 (United States EPA 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 (United States EPA 2022a).

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are airborne substances 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 $1/70^{th}$ 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 2022a). 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 (United States EPA 2020).

Current Air Quality

CARB maintains over 60 air quality monitoring stations throughout California, including two stations in Santa Barbara County. Other monitoring stations in Santa Barbara County are maintained by Santa Barbara County Air Pollution Control District (SBCAPCD). The nearest monitoring station to the project site is the Goleta-Fairview station, located at 380 N. Fairview Avenue, approximately 1.25 miles northwest of the project site. The pollutants monitored at this station are O_3, PM_{10}, and $PM_{2.5}$. The data collected at this station is generally representative of the baseline air quality experienced in the project area. SO_2 has not been monitored at this station since 2009. The last recorded 24-hour average SO_2 value was 0.001 parts per million (ppm), which is below the state 24-hour standard of 0.14 ppm and the federal 24-hour standard of 0.04 ppm. NO_2 and CO have not been monitored at this station since 2019 and 2012, respectively. The last recorded worst-hour NO_2 value was 0.027 ppm, which is below the state and federal standard. In addition, the last recorded 8-hour average CO value was 0.65 ppm, which is below the state and federal 8-hour CO standard of 9.0 ppm. The nearest monitoring station in Santa Barbara County that collects NO_2 data is approximately eight miles north of the project site at the Paradise Road station. In addition, the nearest monitoring site that collects CO data is approximately 20 miles west of the project site at the Las Flores Canyon #1 station. Table 4.2-2 summarizes the annual air quality data for the local airshed from the Goleta-Fairview station.

As shown in Table 4.2-2, PM_{10} measurements exceeded the state standards in the years 2020 and 2022. In addition, $PM_{2.5}$ measurements exceeded the federal $PM_{2.5}$ standard exceedances in 2020. No other state or federal standards were exceeded at these monitoring stations.

Table 4.2-2 Ambient Air Quality Data

Pollutant	2020	2021	2022
Ozone (ppm), Worst Hour[1]	0.084	0.063	0.070
Number of days of state exceedances (>0.09 ppm)	0	0	0
Number of days of federal exceedances (>0.12 ppm)	0	0	0
Ozone (ppm), 8-Hour Average[1]	0.067	0.055	0.059
Number of days of state and federal exceedances (>0.07 ppm)	0	0	0
NO_2 (ppm), Worst Hour[2]	0.007	0.003	0.0088
Number of days of state exceedances (>0.18 ppm)	0	0	0
Number of days of federal exceedances (>0.10 ppm)	0	0	0
Carbon Monoxide (ppm), Highest 8-Hour Average3	1.0	4.5	0.6
Number of days above CAAQS or NAAQS (>9.0 ppm)	0	0	0
PM_{10} ($\mu g/m^3$), Worst 24 Hours[1]	85.8	49.4	50.6
Number of days of state exceedances (>50 $\mu g/m^3$)	11	0	1
Number of days of federal exceedances (>150 $\mu g/m^3$)	0	0	0
$PM_{2.5}$ ($\mu g/m^3$), Worst 24 Hours[1]	61.2	19.4	15.4
Number of days of federal exceedances (>35 $\mu g/m^3$)	6	0	0

ppm= parts per million, $\mu g/m^3$ = microgram per cubic meter, NO_2= nitrogen dioxide, PM_{10}= particulate matter with 10 microns in diameter or less, $PM_{2.5}$ = particulate matter with 2.5 microns in diameter or less.

[1]Data collected at the Goleta-Fairview station.

[2]Data collected at the Paradise Road station.

[3]Data collected at the Las Flores Canyon #1 station.

Source: CARB 2023b

Sensitive Receptors

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses considered more sensitive to air pollution than others due to the types of population groups present or activities involved are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools/daycare centers, and hospitals. Sensitive receivers nearest to the project site consist of mobile homes in the Rancho Goleta mobile home community, located approximately 325 feet east of the project site. Additional sensitive receptors are found approximately 340 feet west of the project site at single-family residences.

4.2.2 Regulatory Setting

The federal and state governments have authority under the federal and state Clean Air Acts (CAA) to regulate emissions of airborne pollutants and have established ambient air quality standards (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 United States EPA 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: O_3, CO, NO_2, SO_2, $PM_{10,}$ $PM_{2.5}$, and Pb. 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 (United States EPA 2022b). In addition, the state of California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards (CARB 2023d). The federal and state CAA are described in more detail below.

a. Federal Regulations

The CAA was enacted in 1970 and amended in 1977 and 1990 [42 United States Code (USC) 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, to achieve the purposes of Section 109 of the CAA [42 USC 7409], the United States EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS).

The primary NAAQS "In the judgment of the Administrator[2], based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health," and the secondary standards are to "protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 USC 7409(b)(2)]. The United States EPA classifies specific geographic areas as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the NAAQS. States are required to adopt enforceable plans, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS. State plans also must control emissions that drift across state lines and harm air quality in downwind states. Table 4.2-3 lists the current federal standards for regulated pollutants.

[2] The term "Administrator" means the Administrator of the United States EPA .

Table 4.2-3 Federal and State Ambient Air Quality Standards

Pollutant	NAAQS	CAAQS
Ozone	0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.070 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.100 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.5 ppm (3-hr avg) 0.14 ppm (24-hr avg) 0.030 ppm (annual avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	0.15 μg/m^3 (rolling 3-month avg) 1.5 μg/m^3 (calendar quarter)	1.5 μg/m^3 (30-day avg)
Particulate Matter (PM_{10})	150 μg/m^3 (24-hr avg)	50 μg/m^3 (24-hr avg) 20 μg/m^3 (annual avg)
Particulate Matter ($PM_{2.5}$)	35 μg/m^3 (24-hr avg) 9 μg/m^3 (annual avg)	12 μg/m^3 (annual avg)
Visibility-Reducing Particles	No Federal Standards	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07–- 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. (8-hr avg)
Sulfates	No Federal Standards	25 μg/m^3 (24-hr avg)
Hydrogen Sulfide	No Federal Standards	0.03 ppm (1-hr avg)
Vinyl Chloride	No Federal Standards	0.01 ppm (24-hr avg)

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; avg = average; μg/m^3 = micrograms per cubic meter

Source: CARB 2016, United States EPA 2024

To derive the NAAQS, the United States EPA reviews data from integrated science assessments and risk/exposure assessments to determine the ambient pollutant concentrations at which human health impacts occur, then reduces these concentrations to establish a margin of safety (United States EPA 2022c). As a result, human health impacts caused by the air pollutants discussed above may affect people when ambient air pollutant concentrations are at or above the concentrations established by the NAAQS. The closer a region is to attainting a particular NAAQS, the lower the human health impact is from that pollutant (San Joaquin Valley Air Pollution Control District 2015). Accordingly, ambient air pollutant concentrations below the NAAQS are considered to be protective of human health (CARB 2023c and 2023d). The NAAQS and the underlying science that forms the basis of the NAAQS are reviewed every five years to determine whether updates are necessary to continue protecting public health with an adequate margin of safety (United States EPA 2015).

b. State Regulations

California Clean Air Act

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code (H&SC) §39000 et seq.). Under the CCAA, the state has developed the California Ambient Air Quality Standards (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.

Toxic Air Contaminants

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. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as DPM; however, TACs 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.

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 Spot" 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 Spot" 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 United States EPA 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 Air Quality Management Plan (AQMP) is the SIP for Santa Barbara County. The AQMP 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.

California Code of Regulations

The California Code of Regulations is the official compilation and publication of the regulations adopted, amended or repealed by state agencies pursuant to the Administrative Procedure Act. They are compiled into Titles and organized into Divisions containing the regulations of state agencies. The following California Code of Regulations would be applicable to the proposed Project:

- **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.

NAAQS and CAAQS Attainment Status

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. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a nonattainment area for that pollutant. Under the federal and state CAA, 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 federal CAA. Areas that have been redesignated to attainment are called maintenance areas.

The project site is within Santa Barbara County, which currently meets the NAAQS for all criteria air pollutants. Santa Barbara County is classified an attainment/maintenance area under the CAAQS for CO, and attainment for $PM_{2.5}$. Santa Barbara County is currently classified as a nonattainment area under the CAAQS for O_3 and PM_{10} (Santa Barbara County 2023).

c. Local Regulations

Santa Barbara County Air Pollution Control District

As the local air quality management agency, the Santa Barbara County Air Pollution Control District (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 4.2.1*, Environmental 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 O_3 standard. In 2006, CARB revised the CAAQS and added an 8-hour average to the O_3 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 O_3 standards only because the District is designated "attainment" for the federal 8-hour O_3 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.

City of Goleta General Plan

The City of Goleta General Plan Conservation Element is intended to guide land use planning by providing goals and policies to preserve air quality. Goals and policies that are applicable to the proposed project include:

- **Policy CE 12 Protection of Air Quality:** To maintain and promote a safe and healthy environment by protecting air quality and minimizing pollutant emissions from new development and from transportation sources.

- **CE 12.2 Control of Air Emissions from New Development:** The following shall apply to reduction of air emissions from new development:
  a. Any development proposal that has the potential to increase emissions of air pollutants shall be referred to the Santa Barbara County Air Pollution Control District for comments and recommended conditions prior to final action by the City.
  b. All new commercial and industrial sources shall be required to use the best available air pollution control technology. Emissions control equipment shall be properly maintained to ensure efficient and effective operation.
  c. Adequate buffers between new sources and sensitive receptors shall be required.
  d. Any permit required by the Santa Barbara County Air Pollution Control District shall be obtained prior to issuance of final development clearance by the City.
- **CE 12.3 Control of Emissions during Grading and Construction:** Construction site emissions shall be controlled by using the following measures:
  a. Watering active construction areas to reduce windborne emissions.
  b. Covering trucks hauling soil, sand, and other loose materials.
  c. Paving or applying nontoxic solid stabilizers on unpaved access roads and temporary parking areas.
  d. Hydroseeding inactive construction areas.
  e. Enclosing or covering open material stockpiles.
  f. Revegetating graded areas immediately upon completion of work.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

Air pollutant emissions generated by project construction and operation were estimated using CalEEMod version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod allows for the use of standardized data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (California Air Pollution Control Officers Associated 2022). The analysis reflects the details of construction and operation of the proposed project as described in Section 2.0, *Project Description*.

Construction

Project construction would primarily generate temporary criteria pollutant emissions from construction equipment operation on-site, construction worker vehicle trips to and from the site, and import of materials off-site. Construction of the proposed project was analyzed based on the land use type and square footage described provided by the applicant, which includes an industrial warehouse, parking spaces, landscaping, and pipelines. Construction of the proposed project would begin in July

2027 and end in September 2028. The model included 3,663 square-feet of demolition for the existing structures and construction debris would be hauled to the Tajiguas landfill, approximately 18.8 miles from the project site. In addition, approximately 37,400 cubic yards of soil would be imported to elevate the building. Construction debris and soil hauled is assumed to be transported by approximately 1,100 dump truck with 34 cubic yard hauling capacity. Based on aerial Google Earth measurements, the water, sewer, and gas pipelines would be approximately 4,373 linear feet to connect the project site to the existing lines adjacent to South Kellogg Avenue. It is assumed that pipeline construction would overlap the construction of the warehouse for approximately 55 days.[3] It is assumed that construction equipment used would be diesel-powered and the project would comply with applicable regulatory standards, such as SBCAPCD fugitive dust control measures and Rule 323.1 Architectural Coating.

Operation

Operational emissions modeled include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by vehicle trips to and from the project site. Daily vehicle trips were sourced from the Updated Traffic and Circulation Study prepared by Associated Transportation Engineers for the proposed project (Appendix B). The trip generation rates in CalEEMod were adjusted to be consistent with the 252 daily vehicle trips estimate in the Traffic and Circulation Study. Based on the Traffic and Circulation Study, approximately 11 percent of the daily vehicle trips would consist of heavy-heavy duty trucks, as shown in Appendix B. Therefore, the project would generate approximately 28 daily one-way truck trips. The vehicle fleet mix was adjusted for 224 passenger vehicles (LDA) and 28 heavy-heavy-duty trucks (HHD). Emissions attributed to energy use include natural gas consumption by appliances and space and water heating. The project site would be supplied with 100 percent renewable electricity from the Central Coast Community Energy prime option. In addition, area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coatings.

Health Risk Assessment

The greatest potential for TAC emissions during construction and operations of the project would be DPM emissions associated with heavy-duty equipment during grading and building construction activities and operational truck trips. In addition, incidental amounts of toxic substances such as oils, solvents, and paints would be used. These products would comply with all applicable SBCAPCD rules for their manufacture and use. The proposed project would be subject to several SBCAPCD rules designed to limit exposure to TACs during construction and operational activities.

The construction and operational HRA was performed in accordance with the revised OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015). The OEHHA Guidance considers the sensitivity of children to TAC emissions, different breathing rates, and time spent at home. Children have a higher breathing rate compared to adults and would likely spend more time at home in nearby residences resulting in longer exposure durations.

The process of assessing health risks from cancer and chronic risk includes a degree of uncertainty. The level of uncertainty depends on the availability of data and the extent to which assumptions are relied upon in cases where the data is incomplete or unknown. All health risk assessments rely upon scientific studies to reduce the level of uncertainty; however, it is not possible to eliminate uncertainty from the analysis. Where assumptions are used to substitute for incomplete or unknown data, it is

[3] Assume a pipeline installation rate of 80 linear feet per day. (4.373 linear feet divide by 80 linear feet per day) = 54.66 days

standard practice in performing health risk assessments to err on the side of health protection to avoid underestimating or underreporting the risk to the public. In general, sources of uncertainty that may lead to an overestimation or an underestimation of the risk include extrapolation of the toxicity data associated with animal exposure used to estimate exposure effects in humans and uncertainty in the exposure estimates. In addition to uncertainty, there exists "a natural range or variability in measured parameters defining the exposure scenario" and the fact that "the greatest quantitative impact is variation among the human population in such properties as height, weight, food consumption, breathing rates, and susceptibility to chemical toxicants" (OEHHA 2015). It is typical to err on the side of health protection by assessing risk on the most sensitive populations, such as children and the elderly, by modeling potential cancer and chronic risk based on high-end breathing rates, by incorporating age sensitivity factors (ASFs), and by not considering exposure reduction measures, such as mechanical air filtration building systems.

Construction emissions rates were based on anticipated annual emissions modeled using the California Emissions Estimator Model (CalEEMod) version 2022.1. CalEEMod differentiates between particulate matter emitted from engine exhaust (i.e., DPM) and particulate matter emitted from ground disturbing activities (i.e., fugitive dust, which does not constitute DPM) (California Air Pollution Control Officers Association [CAPCOA] 2022). DPM concentration was estimated based on the PM_{10} exhaust emissions (not including fugitive PM_{10}) provided by CalEEMod, which are DPM emissions resulting from combustion of diesel-fueled vehicles and off-road equipment during construction. PM_{10} exhaust is composed of DPM and other air toxics; therefore, PM_{10} exhaust is a conservative estimate for DPM emissions estimates.

Operational emissions rates were based on EMission FACtor (EMFAC) PM_{10} exhaust emissions rates for Santa Barbara County during the project's 2028 operational year. The emissions rates for diesel heavy-heavy duty trucks were obtained for speeds of 20, 30, 35, and 40 miles per hour to represent traffic speeds on the project site and the truck route to State Route 217. In addition, emissions rates for an aggregate of speeds were obtained for diesel heavy-heavy duty trucks to represent the idling emissions that would occur at the loading docks.

Dispersion Modeling

Dispersion modeling was performed using the U.S. EPA-approved *American Meteorological Society/Environmental Protection Agency Regulatory Model* (AERMOD) with meteorological data from the representative SBCAPCD monitoring station located in Goleta. The Santa Barbara Airport is the nearest representative air monitoring station with meteorological data and is approximately a quarter mile west of the project site. Vehicle exhaust emissions sources for the project were located on the project site corresponding to the areas of construction and operational activity. Construction activity, including the utility pipeline installation throughout the project site, was modeled as an area source in AERMOD with an assumed release height of five meters, corresponding to the approximate height of off-road equipment mufflers from which exhaust emissions would be released (SCAQMD 2008). Since a portion of construction activity would occur on top of four to six feet of fill, this analysis conservatively estimates cancer and chronic risk with a release height of 5 meters, which would have lower offsite dispersion and greater DPM concentrations at nearby sensitive receptors. Line volume sources[4] were used to represent the haul route, operational truck routes, and idling locations. Construction emissions would not be generated during nighttime hours; therefore, the dispersion modeling allocates the emissions during active construction hours, Monday to Friday from 8:00 a.m.

[4] A series of volume sources with a plume height and width along a line segment based on vehicle height and roadway width.

to 5:00 p.m. Operational emissions were modeled during the project's operating hours of Monday to Saturday from 7:00 a.m. to 6:00 p.m.

347 receptors points using 10-meter spacing were used in AERMOD to represent existing sensitive receptors surrounding the project site. Sensitive receptors identified for modeling were placed at the location of nearby sensitive land uses, which includes residences within 1,000 feet from the project site and along the truck route on South Kellogg Avenue. This analysis focuses on health risk impacts to residential uses because residential exposure parameters, including age sensitivity factors and childhood breathing rates, represent the worst-case exposure scenario. Those sites not specifically modeled would result in risk that would be less than the risk modeled for those receptors included in the analysis due to a lesser exposure duration than residential receptors immediately adjacent to other commercial and industrial land uses. The analysis accounts for the residential receptors located west of the project site, and the Rancho Goleta mobile home park approximately 325 feet east of the project site. In addition, sensitive receptors 1,550 feet from the project site at 175- unit Winslowe townhomes complex were modeled to account for cancer and chronic risk from emissions from truck trips.

Cancer Risk

Health risk impacts were assessed using health risk calculation methodology consistent with the 2015 OEHHA Guidance. This health risk assessment addresses construction and operational DPM emissions and the effects on nearby sensitive uses (residential).

Health impacts were evaluated using a dose-response assessment, which describes the relationship between the level of exposure to a substance (i.e., the dose) and the incidence or occurrence of injury (i.e., the response). To determine the total dose to off-site sensitive receptors, the applicable pathways of exposure were identified. The applicable exposure pathways (e.g., inhalation) were identified for the emitted substances, and the receptor locations were identified. The applicable exposure pathways determine the exposure algorithms that are used to estimate dose. After the exposure pathways were identified, the applicable fate and transport algorithms were used to estimate concentrations in the applicable exposure media (e.g., air) and the exposure algorithms were used to determine the substance-specific dose. In accordance with the OEHHA Guidance, the inhalation pathway was evaluated for construction-related and operational-related DPM. For the inhalation pathway, the dose is directly proportional to the breathing rate. As a conservative (i.e., health protective) approach, maximum breathing rates were used in this analysis.

Once dose was calculated, cancer risk was calculated by accounting for cancer potency of the specific pollutant, age sensitivity, exposure duration, averaging time for lifetime cancer risk, and fraction of time spent at home (sensitive receptor). The cancer potency factor (CPF) is specific for each pollutant and is determined through peer-reviewed scientific studies. For example, the Scientific Review Panel recommends a CPF for DPM of 3.0×10^{-4} $(\mu g/m^3)^{-1}$ and a slope factor of 1.1 $(ppm\text{-}day)^{-1}$.[5] The ASFs account for greater susceptibility in early life as compared to adult exposure, starting from the third trimester of pregnancy to 16 years. The fraction of time at home (FAH) takes into account the time actually residing at the sensitive receptor location for various age groups. For example, newborns are expected to reside at home for longer periods of time compared to school-age children, and the elderly (retirees) are expected to spend more time at home compared to people of working age. FAH consistent with OEHHA guidelines were used for the analysis.

[5] CPF and slope factors are built into the HARP2 model used for quantifying risk.

Each age group has different exposure parameters which require cancer risk to be calculated separately for each age group. The estimation of cancer risk uses the following algorithms:

Risk = Dose inhalation × Inhalation CPF × ASF (Equation 1)

Where:

Dose inhalation = CAIR × DBR × A × EF × ED × FAH/AT (Equation 2)
Inhalation CPF = inhalation cancer potency factor
ASF = age-sensitivity factor

Where:

CAIR = concentration of compound in air in micrograms per cubic meter (µg/m3)
DBR = breathing rate in liter per kilogram of body weight per day (L/kg-body weighty/day)
A = inhalation absorption factor (1 for DPM)
EF = exposure frequency in days per year (day/year)
ED = exposure duration in years (year)
FAH = fraction of time at home
AT = averaging time period over which exposure is averaged in days (day)

The OEHHA recommended values for the equations and daily breathing rates (DBR) described above were used in the HRA. Specific modeling details are included in Appendix P.

The incremental increase in cancer risk is the result of multiplying the dose by the pollutant-specific CPF values. Cancer risk is calculated by multiplying the inhalation dose by the inhalation CPF to yield the potential inhalation excess cancer risk. Cancer risk was evaluated for residences in the surrounding area. Risk for all receptors as well as modeling output is included as part of Appendix P of this EIR.

In addition to analyzing health risk during construction and operation, the analysis also considered combined health risk. Construction activity would occur over 15 months; therefore, the combined health risk analysis assumed construction would begin at 3rd trimester age group and would be completed during the first 12 months of the 0-2 years age group, based on OEHHA guidance. In order to provide a more conservative analysis, the operational HRA also began the health risk evaluation at the 3rd trimester age group, because of the greater sensitivity to carcinogens during early-in-life exposure. Because this approach essentially assumes concurrent (instead of consecutive) construction and operation for the 3rd trimester and 0-2 age groups, the combined health risk assessment increases the health risk for these age groups which results in a conservative analysis compared to assuming consecutive construction and operation.

Non Cancer Risk

Non-cancer chronic impacts affect specific target organ systems (also called toxicological endpoints), such as the eye, nervous system, reproductive system, and respiratory system. Non-cancer chronic impacts were assessed based on the hazard index (HI). The evaluation of chronic impacts is based on the maximum annual emissions over a 12-month period of construction activity. The chronic HI is calculated by dividing the maximum modeled annual average concentration at the maximum impacted sensitive receptor by the recommended exposure limit (REL). The REL is the concentration at or below which no adverse health effects are anticipated. For example, OEHHA has recommended

an ambient concentration of 5 µg/m^3 as the chronic inhalation REL for DPM exhaust. Therefore, a sensitive receptor exposed to an annual average DPM concentration of 5 µg/m^3 or less would not result in a chronic impact. The chronic health impact with the maximum HI for the same target organ system is used for health risk determination.

Significance Thresholds

As described in more detail in Section 4.0, *Environmental Impact Analysis,* the following thresholds are based on the County's 2021 *Environmental Thresholds and Guidelines Manual* and Appendix G of the *State CEQA Guidelines*. Impacts would be significant if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. 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;
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction Emissions Thresholds

The County does not currently have quantitative thresholds of significance for short-term construction emissions. SBCAPCD recommends that construction-related NO_X, ROC, PM_{10}, and $PM_{2.5}$ emissions, from diesel and gasoline powered equipment, paving, and other activities, be quantified. 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 2022). 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. The City of Goleta has elected to use this threshold.

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 2022). Therefore, all construction activity would be required to incorporate the SBCAPCD requirements pertaining to minimizing construction-related emissions and demolition of existing structures. The City of Goleta also requires implementation of standard emission and dust control techniques for all construction, as outlined in the General Plan/ Community Land Use Planning Policy (GP/CLUP) Policy CE 12.3.

Operational Emissions Thresholds

As described in the County's *Environmental Thresholds and Guidelines Manual,* a project would have a significant air quality effect on the environment if operation would:

- Emit (from all sources, both stationary and mobile) more than 55 pounds per day for ROC or NO_X, or more than 80 pounds per day for PM_{10}.
- Emit more than 25 pounds per day of NO_X or ROC from motor vehicle trips only.
- Exceed the health risk public notification thresholds adopted by the SBCAPCD Board (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk).

- Be inconsistent with the latest adopted in federal and state air quality plans for Santa Barbara County.

The SBCAPCD's *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.

Toxic Air Containments Thresholds

SBCAPCD has developed significance thresholds for the emissions of TACs based on health risks associated with elevated exposure to such compounds. For carcinogenic compounds, cancer risk is assessed in terms of incremental excess cancer risk. A project would result in a potentially significant impact if it would generate an incremental excess cancer risk of 10 in one million (1×10^{-6}) Additionally, non-carcinogenic health risks are assessed in terms of a hazard index. A project would result in a potentially significant impact if it would result in a chronic and acute hazard index greater than 1.0 (SBCAPCD 2022).

b. Project Impacts and Mitigation Measures

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

Impact AQ-1 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT 2022 OZONE PLAN. THIS IMPACT WOULD BE CLASS III, *LESS THAN SIGNIFICANT*.

A project would be consistent with the 2022 Ozone Plan if its direct and indirect emissions have been accounted for in the 2022 Ozone 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 Goleta General Plan, which are based on existing and anticipated land uses in the City including development of the project site at the proposed intensity of development specified in the project plans.

The 2022 Ozone Plan is based on countywide employment data provided by the California Department of Finance. The 2022 Ozone Plan also states that its growth projections are similar to that of the 2019 SBCAG Regional Growth Forecast 2050, in which assumptions about future land development patterns were used to generate future population and jobs forecasts for Santa Barbara County (SBCAG 2019). These growth projections for Goleta are shown in Table 4.2-4.

Table 4.2-4 SBCAG Population and Job Projections for Goleta

Year	Population Forecast	Job Forecast
2020	32,200	25,580
2025	32,500	27,210
2030	33,100	27,970
2035	33,700	28,740
2040	34,300	29,540
2045	34,500	30,290
2050	34,700	31,070

Source: SBCAG 2019

The proposed project would involve the construction and operation of an industrial warehouse building. The proposed project has no residential or commercial uses and would not directly increase population growth. However, the proposed project could potentially increase the number of new employees in Goleta. The project is estimated to add approximately 75 new employees. Although project employees would likely be drawn from the existing labor pool in the region and may not relocate to the city, the analysis conservatively assumes that all 75 new employees would become new residents. In a conservative scenario, there would be a population growth of 198 based on the city's average persons per household of 2.64. Goleta has a current population of approximately 32,591 persons (California Department of Finance [DOF] 2022). SBCAG's growth forecast estimates that the population in Goleta would increase from an existing population of 32,591 residents to 34,700 residents by 2050. In addition, the growth forecast estimates that jobs would increase from 25,580 jobs in 2020 to 31,070 jobs by 2050. The population in Goleta would increase by 2,109 residents by 2050, and the jobs in Goleta would increase by 5,490 jobs by 2050. Therefore, the addition of 75 employees and 198 new residents to Goleta would be accommodated, and the project would not exceed SBCAG's growth forecasts of population and jobs for Goleta (SBCAG 2019).

In addition, in accordance with standard practices in the City, the following standard SBCAPCD fugitive dust control measures, in the *Scope and Content of Air Quality Sections in Environmental Documents*, would be required for project implementation:

- 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.

Therefore, the proposed project would be consistent with the applicable air quality plan, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

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 CONSTRUCTION AND OPERATION OF THE PROPOSED PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE SOUTH CENTRAL COAST AIR BASIN REGION IS IN NONATTAINMENT UNDER APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARDS. THEREFORE, IMPACTS RELATED TO CONSTRUCTION AND OPERATION WOULD BE CLASS III, *LESS THAN SIGNIFICANT*.

Construction

Construction-generated emissions are temporary and short-term. Construction activities such as demolition, grading, construction worker travel to and from the project site, delivery and hauling of construction supplies and debris to and from the project site, hauling of import soil to the site, and fuel combustion by on-site construction equipment would generate emissions of O_3 precursors (ROC and NO_X), CO, SO_2, and fugitive dust (PM_{10} and $PM_{2.5}$).

Table 4.2-5 summarizes construction emissions that would be generated from the project. As shown therein, construction emissions would not exceed the SBCAPCD construction thresholds used by the City of Goleta for this analysis. Therefore, project construction would not contribute substantially to an existing or projected air quality violation and impacts would be less than significant.

Table 4.2-5 Estimated Annual Construction Emissions

Construction Year	Annual Emissions (tons per year)					
	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2027	<1	1	1	<1	<1	<1
2028	<1	1	1	<1	<1	<1
Overlap						
Utility Pipelines	<1	1	1	<1	<1	<1
Maximum Annual Emissions	**1**	**2**	**2**	**<1**	**<1**	**<1**
Threshold	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, SO_2 = sulfur dioxide, PM_{10} = 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 add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including SBCAPCD Rules 345, 323.1, and 329).

Operation

Operation of the project 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). Table 4.2-6 summarizes the project's operational emissions by emission source (area, energy, and mobile). As shown therein, the emissions generated by the operation of the proposed project would not exceed County operational thresholds used by the City of Goleta for this analysis. Therefore, project operation would not contribute substantially to an existing or projected air quality violation and impacts would be less than significant.

Table 4.2-6 Estimated Operation Emissions

Emissions Source	Maximum Daily Emissions (pounds per day)					
	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	2	<1	3	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	1	3	<1	1	<1
Total	**3**	**1**	**6**	**<1**	**1**	**<1**
Threshold (area + energy + mobile)	55	55	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, SO_2 = sulfur dioxide, PM_{10} = 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

No mitigation measures are required.

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

Impact AQ-3 PROJECT CONSTRUCTION, OPERATION, OR THE COMBINED CONSTRUCTION AND OPERATION TAC EMISSIONS WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT EMISSIONS. IMPACTS WOULD BE CLASS III, *LESS THAN SIGNIFICANT.*

Sensitive receptors are facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. According to CARB, sensitive receptors are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (CARB 2005). The nearest sensitive receptors are residential mobile homes located approximately 325 feet east of the project site across State Route 217. In addition, single-family residences are located approximately 340 feet west of the project site (Corta/Placencia area).

Construction Impacts

Construction-related activities would result in temporary project-generated DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998. Results of the analysis were compared to SBCAPCD thresholds for a cancer risk threshold of 10 in one million persons, and a chronic Hazard Index significance threshold of 1.0. Since DPM is not associated with acute health risks (OEHHA 2022), acute risk was not evaluated in this construction HRA.

Based on the applicant-provided construction schedule, project construction is anticipated to begin in July 2027 and end in September 2028. Project construction would be phased, and each construction

phase would be periodic and short-term. Project-related TAC emissions would cease with the completion of construction activities. The detailed results of the construction HRA are provided in Appendix P and summarized below.

The maximum unmitigated risk from construction of the proposed project was identified for all sensitive receptors within 1,000 feet of the project site boundary as detailed in Appendix P of the EIR. The maximum off-site residential cancer risk would be 0.86 in one million at one of the mobile homes east of the project site across SR-217. In addition, the chronic risk at the maximum off-site receptor would be exposed to a hazard index of 0.02. These maximum cancer and chronic risk estimates would not exceed the regulatory threshold of 10 in one million for cancer risk or hazard index of 1 for chronic risk. Given that neither the cancer risk nor the chronic risk would exceed regulatory thresholds, health risk from construction of the proposed project would be less than significant.

Operational Impacts

CARB's *Air Quality and Land Use Handbook* (2005) recommends siting sensitive receptors more than 1,000 feet away from distribution centers that generate more than 100 diesel-fueled truck round trips per day. Air modeling analysis performed by CARB and SCAQMD showed an 80 percent drop off from diesel particulate emissions from large distribution centers at approximately 1,000 feet (CARB 2005). The proposed project would generate approximately 14 truck round trips per day (28 one-way truck trips) to the project site, based on the Traffic and Circulation Study prepared by Associated Transportation Engineers. These trips are assumed to all be diesel-fueled heavy-heavy-duty truck trips. An operational HRA was performed to conservatively estimate health risk during the proposed project's operating hours.

The maximum unmitigated risk from operation of the proposed project was identified for all sensitive receptors within 1,000 feet of the project site boundary and along the truck route on South Kellogg Avenue and Hollister Avenue as detailed in Appendix P of the EIR. The nearest sensitive receptors along the truck route are adjacent to South Kellogg Avenue at the Winslowe townhomes, which would have the maximally exposed individual receptor. In addition, the proposed project's truck path is approximately 325 feet west of residential mobile homes across State Route 217. A receptor at Winslowe townhomes would be exposed to a cancer risk of 0.08 in one million, due to the receptors being adjacent to the truck route. In addition, the maximally exposed individual receptor chronic risk would have a hazard index of <0.0001. These maximum operational cancer and chronic risk estimates would not exceed the regulatory threshold of 10 in one million for cancer risk or a hazard index of 1 for chronic risk. In addition, the proposed project would generate 14 truck round trips per day, well below CARB's threshold of 100 diesel-fueled round truck trips per day. Therefore, the project is consistent with CARB's siting recommendations for TAC emitting sources. Furthermore, idling of each truck would be limited to five consecutive minutes and operation of diesel-fueled internal combustion engine auxiliary power systems would not be allowed for greater than five minutes within 100 feet of residences pursuant to 13 California Code of Regulations Section 2485. Given that neither the cancer risk nor the chronic risk would exceed regulatory thresholds and the proposed project's consistency CARB's siting recommendations from TAC sources, the health risk from the operation of the proposed project would be less than significant.

Combined Construction and Operational Impacts

The maximum unmitigated combined risk from construction and operation of the proposed project was identified for all sensitive receptors within 1,000 feet of the project site boundary and along the truck route on South Kellogg Avenue as detailed in Appendix P of this EIR. As described in Section 4.2.3.a, the combined health risk assessment considers overlapping construction and operation for the 3rd trimester and 0-2 year age groups, in order to provide a more conservative analysis. Under this scenario, the sensitive receptor across SR-217 at the mobile home park would be exposed to a cancer risk of 0.89 in one million. In addition, the residential receptor chronic risk would have a hazard index of 0.02. These maximum cancer and chronic risk estimates would not exceed the regulatory threshold of 10 in one million for cancer risk or 1.0 for chronic risk. Given that neither the cancer nor chronic risk would exceed regulatory thresholds, combined health risk from construction and operation of the proposed project would be less than significant.

Mitigation Measures

No mitigation measures are required.

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

Impact AQ-4 THE PROPOSED PROJECT WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) THAT WOULD ADVERSELY AFFECT A SUBSTANTIAL NUMBER OF PEOPLE. THEREFORE, IMPACTS WOULD BE CLASS III, *LESS THAN SIGNIFICANT*.

The project would generate oil and diesel fuel odors during construction from equipment use. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. Accordingly, project construction would not result in other emissions, such as those leading to odors, that would adversely affect a substantial number of people, and impacts would be less than significant.

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 proposed project includes an industrial warehouse and would not include industrial use development associated with odor complaints near sensitive receptors. In addition, it is likely project odors would not be distinguishable due to vehicle exhaust on State Route 217. Therefore, operation of the project would not generate other emissions, such as those leading to odors, that would affect a substantial number of people. Operational odor impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.2.4 Cumulative Impacts

Air quality emissions in one location contribute to regional air quality in the SCCAB. Therefore, the geographic scope for considering cumulative impacts to air quality includes the entire SCCAB, which is comprised of San Luis Obispo, Santa Barbara, and Ventura Counties as stated earlier in this section. Air pollution may combine with other cumulative projects (past, present, and reasonably foreseeable future) to violate criteria pollutant standards if the existing background sources cause nonattainment conditions, as they do according to the state standards for Ozone in the SBCAPCD. 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.

Air pollution is largely a cumulative issue, and SBCAPCD has provided guidance on the subject of cumulative impacts. The SBCAPCD *Environmental Review Guidelines and Scope and Content of Air Quality Sections in Environmental Documents* include recommendations for the analysis of cumulative impacts pertaining to ozone and localized pollutants. Inconsistency with the Ozone Plan is considered a cumulatively adverse air quality impact. As shown in Table 3-1, in Section 3.1, *Environmental Setting*, the planned, pending, and reasonably foreseeable projects within Goleta, at the time of this project, would include the construction of a total of 469 residential units. Therefore, based on the Department of Finance's 2.64 persons per household in Goleta, the cumulative growth for the project area would be approximately 1,239 residents. Thus, cumulative development in Goleta would be accommodated from the 2050 population growth increase of 2,109 from existing conditions. Future cumulative development would not exceed the 2022 Ozone Plan growth assumptions and would not result in cumulatively considerable project emissions. In addition, the project is consistent with the current 2022 Ozone Plan growth projections and criteria pollutant emission thresholds. The proposed project's development would consist of an industrial warehouse building, parking lot, and on-site utility pipelines by the anticipated buildout year (2028). The proposed project would accommodate regional growth consistent with the SBCAG 2050 population forecast. As described in Impact AQ-2 above, the proposed project's daily emissions of construction and operation of related pollutants would not exceed SBCAPCD regional thresholds; therefore, the project's contribution to cumulative air quality impacts would not be cumulatively considerable.

According to the SBCAPCD's *Environmental Review Guidelines,* a project's potential contribution to cumulative impacts is assessed utilizing the same significance criteria as those for project specific impacts, which is if the project would generate an incremental excess cancer risk of 10 in one million non-carcinogenic health risks resulting in a chronic and acute hazard index greater than 1.0. In addition, SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* states a project will not have a significant impact on air quality cumulatively if it does not exceed those same thresholds. The guidelines also state that the contribution of project emissions in conjunction with existing and proposed projects in the local area may be considered. As described under Impact AQ-3 above, TAC emissions during construction and operation of the proposed project would expose the maximum off-site residential receptor to a cancer risk of 0.86 in one million and 0.08 in one million, respectively, well below the threshold of 10 in one million. In addition, the chronic risk during construction and operational activities would be below the hazard index threshold of 1.0. As shown in Table 3.1 of Section 3, *Environmental Setting*, of this EIR, several projects could be under construction within 1,000 feet from the project site and potentially overlap with the project's construction activity. In addition, industrial projects north of the project site could generate additional truck trips along the project's truck route on South Kellogg Avenue during project operations. These cumulative projects could expose sensitive receivers to cancer risks exceeding SBCAPCD's 10 in one million threshold for cancer risk or 1.0 acute hazard index for noncancer risk; however, similar to the

proposed project, cumulative projects would be required to comply with SBCAPCD regulations and thresholds to reduce the potential for significant impacts to sensitive receptors. As stated in SBCAPCD's *Environmental Review Guidelines* and *Scope and Content of Air Quality Sections in Environmental Documents,* a project's potential contribution to cumulative impacts is assessed utilizing the same significance criteria as those for project specific impacts. Therefore, with each cumulative project complying with the project-specific thresholds, the proposed project's contribution to localized health risk from construction and operational emissions would not be cumulatively considerable.

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 project odors would not be distinguishable due to vehicle exhaust on State Route 217. The project is not identified as an odor producing facility nor are there developments near the project site that would produce significant odors. Therefore, cumulative odors from the surrounding area from construction and operations would not combined at the same receptors, and the project's cumulative contribution to cumulative odor emission impacts would not be considerable.

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